

**Experiment Number:** 20614 - 01  
**Test Type:** CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Perfluorooctanoic Acid  
**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018  
**Time Report Requested:** 12:58:26  
**First Dose M/F:** 10/27/08 / 10/28/08  
**Lab:** BAT

Final 1\_Core Only

<b>NTP Study Number:</b>	C20614		
<b>Lock Date:</b>	01/10/2012		
<b>Cage Range:</b>	ALL		
<b>Date Range:</b>	ALL		
<b>Reasons For Removal:</b>	25021 TSAC	25020 NATD	25019 MSAC
<b>Removal Date Range:</b>	ALL		
<b>Treatment Groups:</b>	Include ALL		
<b>Study Gender:</b>	Both		
<b>TDMSE Version:</b>	3.0.2.3_002		
<b>PWG Approval Date:</b>	07/25/2018		

Experiment Number: 20614 - 01

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P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 301

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000316

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |                   |  |   |  |
|-------------------|--|---|--|
| * Kidney          | Pelvis<br>Renal Tubule                               | Inflammation<br>Mineral<br>Nephropathy  | Chronic, Minimal<br>Minimal<br>Chronicprogr, Minimal |
| * Liver           |  | Clear Cell Focus                        |  |
| * Lung            | Alveolus<br>[ Infiltration Cellular TGLs = 3 - 4+5 ] | Infiltration Cellular                   | Histiocyte, Mild                                     |
| * Ovary           |  | Atrophy<br>Cyst                         | Minimal  |
|                   | [ Cyst TGLs = 1 - 12 ]                               |   |  |
| * Pituitary Gland | Pars Distalis<br>[ Adenoma TGLs = 4 - 9 ]            | Adenoma                                 |  |
| * Spleen          |  | Extramedullary Hematopoiesis<br>Pigment | Mild<br>Minimal                                      |
| * Thymus          |  | Atrophy                                 | Mild   |
| * Uterus          | Endometrium<br>Endometrium                           | Hyperplasia<br>Metaplasia               | Cystic, Mild<br>Squamous, Mild                       |

\* PROTOCOL REQUIRED TISSUE

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First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 303

TRT#: 2

SEX: Female

DAY ON TEST: 676

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000318

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Glandular
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
  - Adenoma
  - Degeneration
- \* Kidney
  - Nephropathy
- \* Liver
  - Clear Cell Focus
  - Extramedullary Hematopoiesis
- \* Lung
  - Alveolus
    - Infiltration Cellular
    - Inflammation
- \* Mammary Gland
  - [ Infiltration Cellular TGLs = 4 - 4+5 ]
  - Fibroadenoma
  - Hyperplasia
- \* Pituitary Gland
  - [ Fibroadenoma TGLs = 1 - 14 ]
  - Pars Distalis
    - Hyperplasia
- \* Spleen
  - [ Hyperplasia TGLs = 2 - 9 ]
  - Extramedullary Hematopoiesis
- \* Stomach, Forestomach
  - Epithelium
  - Submucosa
  - Hyperplasia
  - Inflammation
  - Ulcer
- \* Thymus
  - [ Hyperplasia TGLs = 5 - 15 ]
  - Atrophy

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

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Perfluorooctanoic Acid

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Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 304

TRT#: 2

SEX: Female

DAY ON TEST: 435

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000319

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

OBSERVATIONS

- |                                |          |                              |                       |
|--------------------------------|----------|------------------------------|-----------------------|
| * Bone Marrow                  |          | Hyperplasia                  | Moderate              |
| * Kidney                       |          | Nephropathy                  | Chronicprogr, Minimal |
| * Liver                        |          | Eosinophilic Focus           |                       |
| * Lung                         | Alveolus | Infiltration Cellular        | Histiocyte, Minimal   |
| * Mammary Gland                |          | Fibroadenoma                 |                       |
| [ Fibroadenoma TGLs = 1 - 14 ] |          |                              |                       |
| * Spleen                       |          | Extramedullary Hematopoiesis | Minimal               |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 306

TRT#: 2

SEX: Female

DAY ON TEST: 745

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000321

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

OBSERVATIONS

- |                  |  |                               |                                 |
|------------------|--|-------------------------------|---------------------------------|
| * Adrenal Cortex |  | Adenoma                       |                                 |
|                  |  | Degeneration                  | Cystic, Mild                    |
| * Kidney         |  | Accumulation, Hyaline Droplet | Minimal                         |
|                  |  | Nephropathy                   | Chronicprogr, Minimal           |
| * Liver          |  | Basophilic Focus              |                                 |
|                  |  | Clear Cell Focus              |                                 |
|                  | Bile Duct                                | Hyperplasia                   | Minimal                         |
| * Lung           | Alveolus                                 | Infiltration Cellular         | Histiocyte, Minimal             |
|                  |  | Inflammation                  | Multifocal, Granulomatous, Mild |
|                  | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                               |                                 |
| * Mammary Gland  |  | Hyperplasia                   | Moderate                        |
| * Ovary          |  | Cyst                          |                                 |
|                  | [ Cyst TGLs = 1 - 12 ]                   |                               |                                 |
| * Spleen         |  | Extramedullary Hematopoiesis  | Mild                            |
|                  |  | Pigment                       | Minimal                         |
| * Thymus         |  | Atrophy                       | Mild                            |

\* PROTOCOL REQUIRED TISSUE

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Species/Strain: RATS/HSD

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Perfluorooctanoic Acid

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First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 307

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000322

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Medulla
- \* Clitoral Gland  
[ Metaplasia TGLs = 1 - 13 ]
- \* Kidney
- \* Liver
- \* Lung  
[ Infiltration Cellular TGLs = 3 - 4+5 ]
- \* Ovary
- \* Pituitary Gland  
[ Adenoma TGLs = 2 - 9 ]
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Duct
- Papilla, Urothelium
- Bile Duct
- Alveolus
- Pars Distalis
- Endometrium
- Hyperplasia
- Metaplasia
- Calculus Micro Observation Only
- Hyperplasia
- Nephropathy
- Clear Cell Focus
- Extramedullary Hematopoiesis
- Hyperplasia
- Pigment
- Infiltration Cellular
- Atrophy
- Cyst
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Adenoma
- Metaplasia
- Minimal
- Squamous, Moderate
- Mild
- Minimal
- Chronicprogr, Mild
- Minimal
- Minimal
- Minimal
- Histiocyte, Minimal
- Mild
- Minimal
- Minimal
- Squamous, Mild

\* PROTOCOL REQUIRED TISSUE

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Species/Strain: RATS/HSD

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First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 309

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000324

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |
| * Uterus                   |                           |                             |                          |

OBSERVATIONS

- |                 |  |                               |                     |
|-----------------|--|-------------------------------|---------------------|
| * Kidney        |  | Accumulation, Hyaline Droplet | Minimal             |
|                 |  | Nephropathy                   | Chronicprogr, Mild  |
| * Liver         |  | Angiectasis                   | Minimal             |
|                 |  | Clear Cell Focus              |                     |
| * Lung          | Alveolus                                 | Infiltration Cellular         | Histiocyte, Minimal |
|                 | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                               |                     |
| * Mammary Gland |  | Hyperplasia                   | Moderate            |
| * Spleen        |  | Extramedullary Hematopoiesis  | Minimal             |
|                 |  | Pigment                       | Mild                |
| * Thymus        |  | Atrophy                       | Mild                |

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**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

**ANIMAL ID:** 310

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 0/0 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000325

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Lymph Node, Mandibular  | * Lymph Node, Mesenteric    | * Mammary Gland          | * Pancreas                 |
| * Parathyroid Gland       | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |

**OBSERVATIONS**

- |                      |  |                                 |                    |
|----------------------|--|---------------------------------|--------------------|
| * Bone Marrow        |  | Hyperplasia                     | Minimal            |
| * Islets, Pancreatic |  | Adenoma                         |                    |
| * Kidney             |  | Calculus Micro Observation Only | Minimal            |
|                      | Renal Tubule                                 | Mineral                         | Mild               |
|                      |  | Nephropathy                     | Chronicprogr, Mild |
| * Liver              |  | Hepatodiaphragmatic Nodule      |                    |
|                      | Bile Duct                                    | Hyperplasia                     | Minimal            |
|                      |  | Inflammation                    | Focal, Minimal     |
|                      | [ Hepatodiaphragmatic Nodule TGLs = 2 - 14 ] |                                 |                    |
| * Lung               | Alveolus                                     | Infiltration Cellular           | Histiocyte, Mild   |
|                      | [ Infiltration Cellular TGLs = 3 - 4+5 ]     |                                 |                    |
| * Nose               |  | Inflammation                    | Minimal            |
| * Ovary              |  | Atrophy                         | Minimal            |
| * Pituitary Gland    | Pars Distalis                                | Adenoma                         |                    |
| * Spleen             |  | Extramedullary Hematopoiesis    | Mild               |
|                      |  | Pigment                         | Minimal            |
| * Thymus             |  | Atrophy                         | Marked             |
| * Uterus             | Endometrium                                  | Hyperplasia                     | Cystic, Marked     |
|                      |  | Polyp Stromal                   |                    |
|                      | [ Hyperplasia TGLs = 1 - 12 ]                |                                 |                    |

\* PROTOCOL REQUIRED TISSUE



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Date Report Requested: 07/25/2018

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First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 311

TRT#: 2

SEX: Female

DAY ON TEST: 533

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000326

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Esophagus               | * Eye                       |
| * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Nose                      |
| * Parathyroid Gland      | * Pituitary Gland          | * Skin                    | * Thyroid Gland             |
| * Trachea                |                            |                           |                             |

OBSERVATIONS

- |                          |                                      |                    |                       |
|--------------------------|--------------------------------------|--------------------|-----------------------|
| * Adrenal Cortex         |                                      | Lymphoma Malignant |                       |
| * Adrenal Medulla        |                                      | Lymphoma Malignant |                       |
| * Bone Marrow            |                                      | Hyperplasia        | Marked                |
| * Brain                  |                                      | Necrosis           | Mild                  |
|                          | [ Necrosis TGLs = 3 - 10+14 ]        |                    |                       |
| * Clitoral Gland         |                                      | Lymphoma Malignant |                       |
| * Heart                  |                                      | Lymphoma Malignant |                       |
| * Intestine Large, Colon |                                      | Lymphoma Malignant |                       |
| * Kidney                 |                                      | Lymphoma Malignant |                       |
|                          | Renal Tubule                         | Mineral            | Minimal               |
|                          |                                      | Nephropathy        | Chronicprogr, Minimal |
| * Liver                  |                                      | Lymphoma Malignant |                       |
| * Lung                   |                                      | Lymphoma Malignant |                       |
| Lymph Node               | Inguinal                             | Lymphoma Malignant |                       |
|                          | [ Lymphoma Malignant TGLs = 4 - 15 ] |                    |                       |
| * Lymph Node, Mandibular |                                      | Lymphoma Malignant |                       |
| * Lymph Node, Mesenteric |                                      | Lymphoma Malignant |                       |
| * Mammary Gland          |                                      | Lymphoma Malignant |                       |
| Mesentery                |                                      | Lymphoma Malignant |                       |
| * Ovary                  |                                      | Lymphoma Malignant |                       |
| * Pancreas               |                                      | Lymphoma Malignant |                       |
|                          | [ Lymphoma Malignant TGLs = 2 - 7 ]  |                    |                       |
| * Salivary Glands        |                                      | Lymphoma Malignant |                       |
| * Spleen                 |                                      | Lymphoma Malignant |                       |

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Lab: BAT

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ANIMAL ID: 311

TRT#: 2

SEX: Female

DAY ON TEST: 533

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000326

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Lymphoma Malignant TGLs = 1 - 6 ]

\* Stomach, Forestomach

Lymphoma Malignant

\* Stomach, Glandular

Lymphoma Malignant

\* Thymus

Lymphoma Malignant

\* Urinary Bladder

Lymphoma Malignant

\* Uterus

Lymphoma Malignant

---

PRIMARY CAUSE OF DEATH

- Spleen Lymphoma Malignant

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First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 313

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000328

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Pancreas               |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                           |               |                              |                         |
|---------------------------|---------------|------------------------------|-------------------------|
| * Liver                   | Bile Duct     | Hyperplasia                  | Mild                    |
| * Lung                    | Alveolus      | Infiltration Cellular        | Histiocyte, Mild        |
|                           |               | Inflammation                 | Chronic Active, Minimal |
| * Ovary                   |               | Atrophy                      | Mild                    |
| * Pituitary Gland         | Pars Distalis | Adenoma                      |                         |
| [ Adenoma TGLs = 1 - 14 ] |               |                              |                         |
| * Spleen                  |               | Extramedullary Hematopoiesis | Minimal                 |
| * Thymus                  |               | Atrophy                      | Moderate                |
| * Uterus                  | Endometrium   | Hyperplasia                  | Cystic, Mild            |
|                           | Endometrium   | Metaplasia                   | Squamous, Minimal       |
|                           |               | Polyp Stromal                | Multiple                |

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Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 314

TRT#: 2

SEX: Female

DAY ON TEST: 722

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000329

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Heart
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lung
- \* Mammary Gland
- \* Nose
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Thyroid Gland

OBSERVATIONS

- \* Harderian Gland
- \* Kidney
- \* Liver
- \* Ovary
- \* Pituitary Gland
- \* Skin
- \* Spleen
- \* Thymus
- \* Uterus
- Bile Duct
- Bile Duct
- Pars Distalis
- Epidermis, Sebaceous Gl
- Lymph Follic
- Endometrium
- Hyperplasia
- Nephropathy
- Cyst
- Hyperplasia
- Atrophy
- Cyst
- Adenoma
- Hyperplasia
- Ulcer
- Atrophy
- Pigment
- Atrophy
- Hyperplasia
- Polyp Stromal
- Mild
- Chronicprogr, Minimal
- Mild
- Mild
- Mild
- Minimal
- Minimal
- Minimal
- Cystic, Mild

[ Polyp Stromal TGLs = 3 - 15 ]

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 315

TRT#: 2

SEX: Female

DAY ON TEST: 744

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000330

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| Blood Vessel                | * Bone                   | * Bone Marrow              | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Lung                   | * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  |
| * Nose                      | * Pancreas               | * Parathyroid Gland        | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

OBSERVATIONS

- |                   |                                |                              |                 |
|-------------------|--------------------------------|------------------------------|-----------------|
| * Adrenal Cortex  |                                | Degeneration                 | Cystic, Minimal |
| * Adrenal Medulla |                                | Hyperplasia                  | Moderate        |
| * Liver           | Bile Duct                      | Hyperplasia                  | Minimal         |
| * Mammary Gland   |                                | Adenocarcinoma               |                 |
|                   | [ Adenocarcinoma TGLs = 1-14 ] |                              |                 |
| * Ovary           |                                | Atrophy                      | Moderate        |
| * Pituitary Gland | Pars Distalis                  | Hyperplasia                  | Minimal         |
| * Spleen          |                                | Extramedullary Hematopoiesis | Mild            |
| * Thymus          |                                | Atrophy                      | Moderate        |
| * Thyroid Gland   | C Cell                         | Adenoma                      |                 |
| * Uterus          | Endometrium                    | Metaplasia                   | Squamous, Mild  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 316

TRT#: 2

SEX: Female

DAY ON TEST: 645

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000331

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Pancreas                | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Trachea                   | * Urinary Bladder        | * Uterus                   |

OBSERVATIONS

- |                     |  |                              |                       |
|---------------------|--|------------------------------|-----------------------|
| * Bone Marrow       |  | Hyperplasia                  | Moderate              |
| * Kidney            |  | Nephropathy                  | Chronicprogr, Minimal |
| * Liver             |  | Basophilic Focus             |                       |
|                     |  | Extramedullary Hematopoiesis | Minimal               |
|                     | Bile Duct                                | Hyperplasia                  | Minimal               |
| * Lung              | Alveolus                                 | Infiltration Cellular        | Histiocyte, Mild      |
|                     | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                              |                       |
| * Mammary Gland     |  | Fibroadenoma                 |                       |
|                     | [ Fibroadenoma TGLs = 2 - 14 ]           |                              |                       |
| * Ovary             |  | Atrophy                      | Minimal               |
|                     |  | Cyst                         |                       |
| * Parathyroid Gland |  | Hyperplasia                  | Focal, Minimal        |
| * Pituitary Gland   | Pars Distalis                            | Hyperplasia                  | Minimal               |
| * Spleen            |  | Extramedullary Hematopoiesis | Moderate              |
| * Thymus            |  | Atrophy                      | Moderate              |
| * Thyroid Gland     | C Cell                                   | Hyperplasia                  | Mild                  |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 317

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000332

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Heart
- \* Kidney
- \* Liver
- Bile Duct
- Bile Duct
- [ Clear Cell Focus TGLs = 3 - 14 ]
- [ Hepatodiaphragmatic Nodule TGLs = 1 - 3 ]
- \* Lung
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- Cardiomyopathy
- Nephropathy
- Angiectasis
- Basophilic Focus
- Clear Cell Focus
- Cyst
- Hepatodiaphragmatic Nodule
- Hyperplasia
- Infiltration Cellular
- Hyperplasia
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Adenoma
- Hyperplasia
- Minimal
- Chronicprogr, Minimal
- Minimal
- Mild
- Histiocyte, Mild
- Mild
- Mild
- Minimal
- Mild
- Moderate
- Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 318

TRT#: 2

SEX: Female

DAY ON TEST: 543

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000333

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

MISSING

\* Lymph Node, Mandibular

OBSERVATIONS

Blood Vessel	Aorta	Mineral	Minimal
* Bone Marrow		Hyperplasia	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Cholangioma	Multiple
	Bile Duct	Cyst	
	[ Cholangioma TGLs = 1,2,3 - 14+15+16 ]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 4 - 4 ]		
* Spleen		Extramedullary Hematopoiesis	Minimal
* Thymus		Atrophy	Moderate

PRIMARY CAUSE OF DEATH - Liver Cholangioma



Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 320

TRT#: 2

SEX: Female

DAY ON TEST: 574

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000335

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex [ Degeneration TGLs = 4 - 16 ]		Degeneration	Cystic, Moderate
* Bone Marrow		Hyperplasia	Mild
* Islets, Pancreatic		Hyperplasia	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Extramedullary Hematopoiesis	Minimal
* Lung [ Infiltration Cellular TGLs = 3 - 4+5 ]	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland [ Fibroadenoma TGLs = 1,2 - 14+15 ]		Fibroadenoma	Multiple
* Ovary		Atrophy	Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
		Pigment	Mild
* Thymus		Atrophy	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Minimal
		Polyp Stromal	

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 321

TRT#: 2

SEX: Female

DAY ON TEST: 744

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000336

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Salivary Glands
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder

OBSERVATIONS

- \* Heart
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- Bile Duct
- Alveolus
- [ Fibroadenoma TGLs = 1 - 14 ]
- [ Granulosa Cell Tumor Benign TGLs = 2 - 12 ]
- [ Adenoma TGLs = 3 - 9 ]
- Pars Distalis
- Cardiomyopathy
- Parasite Metazoan
- Nephropathy
- Degeneration
- Hyperplasia
- Infiltration Cellular
- Fibroadenoma
- Atrophy
- Granulosa Cell Tumor Benign
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Minimal
- Chronicprogr, Minimal
- Cystic, Minimal
- Minimal
- Histiocyte, Minimal
- Mild
- Minimal
- Mild
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 322

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000337

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Kidney Nephropathy Chronicprogr, Minimal
- \* Liver Bile Duct Cyst
- \* Liver Bile Duct Hyperplasia Mild
- \* Lung Alveolus Infiltration Cellular Histiocyte, Mild
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- \* Mammary Gland Hyperplasia Minimal
- \* Ovary Atrophy Minimal
- \* Pituitary Gland Pars Distalis Adenoma
- [ Adenoma TGLs = 2 - 14 ]
- \* Spleen Pigment Minimal
- \* Thymus Atrophy Mild
- \* Thyroid Gland C Cell Hyperplasia Moderate
- \* Uterus Endometrium Hyperplasia Cystic, Minimal
- Endometrium Metaplasia Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 323

TRT#: 2

SEX: Female

DAY ON TEST: 744

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000338

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Pancreas               |
| * Salivary Glands          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Trachea                 | * Urinary Bladder           |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |   |                          |                  |
|-------------------|---|--------------------------|------------------|
| * Liver           |   | Hepatocellular Carcinoma |                  |
|                   | Bile Duct                                 | Hyperplasia              | Minimal          |
|                   |   | Inflammation             | Focal, Minimal   |
|                   | [ Hepatocellular Carcinoma TGLs = 1 - 3 ] |                          |                  |
| * Lung            | Alveolus                                  | Infiltration Cellular    | Histiocyte, Mild |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ]  |                          |                  |
| * Ovary           |   | Atrophy                  | Mild             |
|                   |   | Cyst                     |                  |
| * Pituitary Gland | Pars Distalis                             | Hyperplasia              | Moderate         |
|                   | [ Hyperplasia TGLs = 3 - 9 ]              |                          |                  |
| * Thymus          |   | Atrophy                  | Mild             |
| * Thyroid Gland   | C Cell                                    | Adenoma                  | Multiple         |
| * Uterus          | Endometrium                               | Metaplasia               | Squamous, Mild   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 324

TRT#: 2

SEX: Female

DAY ON TEST: 592

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000339

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | Mesentery                   | * Nose                   | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Salivary Glands        | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |

OBSERVATIONS

- |  |             |                              |                     |
|--|-------------|------------------------------|---------------------|
| * Bone Marrow                                      |             | Hyperplasia                  | Mild                |
| * Liver  | Bile Duct   | Cyst                         |                     |
|  |             | Extramedullary Hematopoiesis | Minimal             |
| Note: Multilocular cyst.<br>[ Cyst TGLs = 2 - 15 ] |             |                              |                     |
| * Lung   | Alveolus    | Infiltration Cellular        | Histiocyte, Minimal |
| * Ovary  |             | Atrophy                      | Mild                |
|  |             | Cyst                         |                     |
| * Skin   | Subcut Tiss | Sarcoma                      |                     |
| [ Sarcoma TGLs = 1 - 14 ]                          |             |                              |                     |
| * Spleen   |             | Extramedullary Hematopoiesis | Minimal             |
| * Thymus   |             | Atrophy                      | Mild                |
| * Uterus   | Endometrium | Metaplasia                   | Squamous, Minimal   |

PRIMARY CAUSE OF DEATH - Skin Subcut Tiss Sarcoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 325

TRT#: 2

SEX: Female

DAY ON TEST: 712

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000340

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Nose	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Moderate
* Liver		Eosinophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 2 - 4+5 ]		
* Lymph Node, Mandibular		Atrophy	Lymphoid, Minimal
* Lymph Node, Mesenteric		Atrophy	Lymphoid, Minimal
* Mammary Gland		Hyperplasia	Minimal
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1 - 14 ]		
* Spleen		Pigment	Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	Follicular Cel	Hypertrophy	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
		Inflammation	Chronic Active, Minimal
	Endometrium	Metaplasia	Squamous, Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 326

TRT#: 2

SEX: Female

DAY ON TEST: 589

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000341

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Brain                   | * Clitoral Gland            |
| * Esophagus              | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Mammary Gland            | * Pancreas                | * Parathyroid Gland         |
| * Salivary Glands        | * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |                             |

OBSERVATIONS

- |                   |  |                               |                          |
|-------------------|--|-------------------------------|--------------------------|
| * Adrenal Cortex  |  | Degeneration                  | Cystic, Minimal          |
|                   |  | Hypertrophy                   | Mild                     |
| * Adrenal Medulla |  | Hyperplasia                   | Minimal                  |
| * Bone Marrow     |  | Hyperplasia                   | Minimal                  |
| * Kidney          |  | Accumulation, Hyaline Droplet | Minimal                  |
|                   |  | Nephropathy                   | Chronicprogr, Mild       |
| * Liver           |  | Inflammation                  | Focal, Minimal           |
| * Lung            |  | Astrocytoma Malignant         | Metastatic (Spinal Cord) |
|                   | [ Astrocytoma Malignant TGLs = 1 - 4+5 ] |                               |                          |
| * Nose            | Respirat Epith                           | Metaplasia                    | Squamous, Minimal        |
| * Ovary           |  | Atrophy                       | Mild                     |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                   | Mild                     |
|                   | [ Hyperplasia TGLs = 3 - 9 ]             |                               |                          |
| Spinal Cord       |  | Astrocytoma Malignant         |                          |
|                   | [ Astrocytoma Malignant TGLs = 2 - 14 ]  |                               |                          |
| * Spleen          |  | Pigment                       | Minimal                  |
| * Thymus          |  | Atrophy                       | Mild                     |
| * Uterus          | Endometrium                              | Hyperplasia                   | Cystic, Mild             |
|                   | Endometrium                              | Metaplasia                    | Squamous, Moderate       |

PRIMARY CAUSE OF DEATH - Spinal Cord Astrocytoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 327

TRT#: 2

SEX: Female

DAY ON TEST: 745

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000342

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |                   |  |                              |                       |
|-------------------|--|------------------------------|-----------------------|
| * Kidney          | Papilla, Urothelium                      | Hyperplasia                  | Minimal               |
|                   |  | Nephropathy                  | Chronicprogr, Minimal |
| * Liver           |  | Basophilic Focus             |                       |
|                   |  | Clear Cell Focus             |                       |
|                   |  | Hepatocellular Adenoma       |                       |
|                   | Bile Duct                                | Hyperplasia                  | Minimal               |
|                   | [ Hepatocellular Adenoma TGLs = 3 - 15 ] |                              |                       |
| * Mammary Gland   |  | Fibroadenoma                 |                       |
|                   |  | Hyperplasia                  | Minimal               |
|                   | [ Fibroadenoma TGLs = 1 - 14 ]           |                              |                       |
| * Ovary           |  | Atrophy                      | Minimal               |
| * Pituitary Gland | Pars Distalis                            | Adenoma                      |                       |
|                   | [ Adenoma TGLs = 2 - 9 ]                 |                              |                       |
| * Spleen          |  | Extramedullary Hematopoiesis | Minimal               |
|                   |  | Pigment                      | Minimal               |
| * Thymus          |  | Atrophy                      | Marked                |
| * Uterus          | Endometrium                              | Hyperplasia                  | Cystic, Moderate      |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 328

TRT#: 2

SEX: Female

DAY ON TEST: 647

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000343

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- \* Uterus

OBSERVATIONS

- \* Bone Marrow Atrophy Mild
- \* Kidney Nephropathy Chronicprogr, Minimal
- \* Liver Bile Duct Hyperplasia Minimal
- Pigment Mild
- \* Lung Alveolus Infiltration Cellular Histiocyte, Minimal
- [ Infiltration Cellular TGLs = 4 - 4+5 ]
- \* Lymph Node, Mesenteric Atrophy Lymphoid, Minimal
- \* Mammary Gland Fibroadenoma Multiple
- [ Fibroadenoma TGLs = 1,2 - 14+15 ]
- \* Ovary Atrophy Mild
- \* Pituitary Gland Pars Distalis Adenoma
- [ Adenoma TGLs = 3 - 16 ]
- \* Spleen Lymph Follic Atrophy Minimal
- Pigment Mild
- \* Thymus Atrophy Marked
- \* Thyroid Gland C Cell Adenoma
- C Cell Hyperplasia Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 329

TRT#: 2

SEX: Female

DAY ON TEST: 547

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000344

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Nose
- \* Pituitary Gland
- \* Thyroid Gland
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Ovary
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Kidney
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Intestine Small, Jejunum  
[ Adenocarcinoma TGLs = 1 - 14 ]
- \* Islets, Pancreatic
- \* Liver
- \* Lung  
[ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Lymph Node, Mesenteric
- \* Mammary Gland
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Uterus
- Hyperplasia
- Hyperplasia
- Adenocarcinoma
- Hyperplasia
- Hyperplasia
- Infiltration Cellular
- Atrophy
- Hyperplasia
- Atrophy
- Hyperplasia
- Inflammation
- Ulcer
- Atrophy
- Hyperplasia
- Mild
- Mild
- Minimal
- Minimal
- Histiocyte, Mild
- Lymphoid, Minimal
- Mild
- Mild
- Moderate
- Chronic Active, Moderate
- Mild
- Moderate
- Cystic, Minimal

PRIMARY CAUSE OF DEATH - Intestine Small, Jejunum Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 330

TRT#: 2

SEX: Female

DAY ON TEST: 452

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000345

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Brain                  | * Clitoral Gland           | * Esophagus               |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Mammary Gland            | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Trachea                 |
| * Urinary Bladder           | * Uterus                 |                            |                           |

OBSERVATIONS

- |                          |   |                  |                      |
|--------------------------|---|------------------|----------------------|
| * Eye                    | Retina  | Degeneration     | Moderate             |
| * Heart                  |   | Cardiomyopathy   | Minimal              |
| * Kidney                 | Papilla, Urothelium   | Hyperplasia      | Minimal              |
|                          | [ Nephropathy TGLs = 1 - 6 ]  | Nephropathy      | Chronicprogr, Marked |
| * Liver                  |   | Basophilic Focus |                      |
|                          |   | Clear Cell Focus |                      |
| * Lymph Node, Mesenteric |   | Atrophy          | Lymphoid, Minimal    |
|                          | Note: Lymphoid atrophy may be stress related and was moribund at necropsy |                  |                      |
| * Nose                   | Respirat Epith  | Hyperplasia      | Mild                 |
|                          |   | Inflammation     | Mild                 |
|                          | Olfactory Epi   | Metaplasia       | Mild                 |
| * Spleen                 | Lymph Follic  | Atrophy          | Mild                 |
|                          |   | Pigment          | Mild                 |
| * Thymus                 |   | Atrophy          | Moderate             |
|                          | Note: Ectopic glandular surrounds thymus.                                 |                  |                      |
| * Thyroid Gland          | C Cell  | Hyperplasia      | Minimal              |

PRIMARY CAUSE OF DEATH - Kidney Papilla Urothelium Hyperplasia

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 331

TRT#: 2

SEX: Female

DAY ON TEST: 621

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000346

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Nose	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Bone Marrow		Hyperplasia	Minimal
* Brain		Hemorrhage	Moderate
	[ Hemorrhage TGLs = 6 - 10+18 ]		
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Basophilic Focus	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 4 - 4+5 ]		
* Mammary Gland		Fibroadenoma	Multiple
		Hyperplasia	Mild
	[ Fibroadenoma TGLs = 1,2 - 14+15 ]		
* Ovary		Atrophy	Minimal
		Cyst	
	[ Cyst TGLs = 3 - 16 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 5 - 17 ]		
* Spleen		Extramedullary Hematopoiesis	Minimal
		Pigment	Mild
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 333

TRT#: 2

SEX: Female

DAY ON TEST: 625

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000348

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Pituitary Gland         | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |

OBSERVATIONS

- |               |  |                              |                      |
|---------------|--|------------------------------|----------------------|
| * Bone Marrow |  | Hyperplasia                  | Marked               |
| * Liver       |  | Pigment                      | Minimal              |
| * Lung        | Alveolus   | Infiltration Cellular        | Histiocyte, Minimal  |
|               | [ Infiltration Cellular TGLs = 3 - 4+5 ]         |                              |                      |
| * Ovary       |  | Atrophy                      | Minimal              |
|               |  | Cyst                         |                      |
| * Spleen      |  | Extramedullary Hematopoiesis | Moderate             |
|               | [ Extramedullary Hematopoiesis TGLs = 2 - 6+15 ] |                              |                      |
| * Thymus      |  | Atrophy                      | Mild                 |
| * Uterus      |  | Dilation                     | Marked               |
|               |  | Inflammation                 | Chronic Active, Mild |
|               | Endometrium                                      | Metaplasia                   | Squamous, Marked     |
|               | [ Metaplasia TGLs = 1,4 - 14+16 ]                |                              |                      |

PRIMARY CAUSE OF DEATH - Uterus Inflammation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 335

TRT#: 2

SEX: Female

DAY ON TEST: 745

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000350

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Kidney
- \* Liver
- [ Mixed Cell Focus TGLs = 5 - 18 ]
- \* Lung
- [ Infiltration Cellular TGLs = 6 - 4+5 ]
- \* Mammary Gland
- [ Fibroadenoma TGLs = 1,2,3 - 14+15+16 ]
- \* Ovary
- \* Pituitary Gland
- [ Adenoma TGLs = 4 - 17 ]
- \* Spleen
- \* Thyroid Gland
- Alveolus
- Pars Distalis
- C Cell
- Hyperplasia
- Calculus Micro Observation Only
- Nephropathy
- Inflammation
- Mixed Cell Focus
- Infiltration Cellular
- Fibroadenoma
- Atrophy
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Hyperplasia
- Mild
- Minimal
- Chronicprogr, Minimal
- Focal, Minimal
- Histiocyte, Minimal
- Multiple
- Marked
- Minimal
- Minimal
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 336

TRT#: 2

SEX: Female

DAY ON TEST: 744

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000351

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver		Basophilic Focus	
		Clear Cell Focus	
	Bile Duct	Cyst	
		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Minimal
		Inflammation	Focal, Minimal
	[ Clear Cell Focus TGLs = 1 - 14 ]		
	[ Cyst TGLs = 2 - 15 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 3 - 16 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
	[ Hyperplasia TGLs = 4 - 9 ]		
* Spleen		Extramedullary Hematopoiesis	Minimal
* Thymus		Atrophy	Mild
* Thyroid Gland	Bilateral, C Cell	Adenoma	
* Uterus	Endometrium	Metaplasia	Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 337

TRT#: 2

SEX: Female

DAY ON TEST: 744

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000352

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Brain                     | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

OBSERVATIONS

- |                             |                     |                              |                       |
|-----------------------------|---------------------|------------------------------|-----------------------|
| * Adrenal Cortex            |                     | Degeneration                 | Cystic, Mild          |
| * Adrenal Medulla           |                     | Hyperplasia                  | Minimal               |
| * Bone Marrow               |                     | Hyperplasia                  | Moderate              |
| * Clitoral Gland            |                     | Carcinoma                    |                       |
| [ Carcinoma TGLs = 2 - 14 ] |                     |                              |                       |
| * Kidney                    | Papilla, Urothelium | Hyperplasia                  | Minimal               |
|                             | Renal Tubule        | Mineral                      | Minimal               |
|                             |                     | Nephropathy                  | Chronicprogr, Minimal |
| * Liver                     |                     | Eosinophilic Focus           |                       |
| * Lung                      | Alveolus            | Infiltration Cellular        | Histiocyte, Minimal   |
| * Mammary Gland             |                     | Adenoma                      |                       |
| [ Adenoma TGLs = 3 - 15 ]   |                     |                              |                       |
| * Ovary                     |                     | Atrophy                      | Minimal               |
| * Pituitary Gland           | Pars Distalis       | Adenoma                      |                       |
| [ Adenoma TGLs = 1 - 9 ]    |                     |                              |                       |
| * Spleen                    |                     | Extramedullary Hematopoiesis | Minimal               |
|                             |                     | Pigment                      | Minimal               |
| * Thymus                    |                     | Atrophy                      | Moderate              |
| * Thyroid Gland             | C Cell              | Adenoma                      |                       |
|                             | C Cell              | Carcinoma                    |                       |
| * Uterus                    |                     | Dilation                     | Mild                  |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 338

TRT#: 2

SEX: Female

DAY ON TEST: 692

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000353

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Brain                     | * Clitoral Gland         |
| * Esophagus                | * Eye                     | * Harderian Gland           | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Nose                    | * Pancreas                  | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                                |               |                              |                       |
|--------------------------------|---------------|------------------------------|-----------------------|
| * Adrenal Cortex               |               | Degeneration                 | Cystic, Mild          |
| * Adrenal Medulla              |               | Hyperplasia                  | Moderate              |
| * Bone Marrow                  |               | Hyperplasia                  | Minimal               |
| * Heart                        |               | Cardiomyopathy               | Minimal               |
| * Kidney                       |               | Nephropathy                  | Chronicprogr, Minimal |
| * Liver                        |               | Basophilic Focus             |                       |
|                                |               | Eosinophilic Focus           |                       |
|                                |               | Extramedullary Hematopoiesis | Minimal               |
|                                |               | Infiltration Cellular        | Mixed Cell, Minimal   |
|                                |               | Fibroadenoma                 |                       |
| * Mammary Gland                |               |                              |                       |
| [ Fibroadenoma TGLs = 1 - 14 ] |               |                              |                       |
| * Ovary                        |               | Atrophy                      | Minimal               |
| * Pituitary Gland              | Pars Distalis | Adenoma                      |                       |
| [ Adenoma TGLs = 2 - 15 ]      |               |                              |                       |
| * Spleen                       |               | Extramedullary Hematopoiesis | Mild                  |
|                                |               | Pigment                      | Minimal               |
| * Thymus                       |               | Atrophy                      | Mild                  |
| * Uterus                       | Endometrium   | Hyperplasia                  | Cystic, Minimal       |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 340

TRT#: 2

SEX: Female

DAY ON TEST: 705

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000355

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Bone Marrow
- \* Brain
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Liver
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thymus
- \* Thyroid Gland
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Clitoral Gland  
[ Inflammation TGLs = 2 - 15 ]  
Inflammation Mild
- \* Kidney  
Calculus Micro Observation Only Minimal  
Nephropathy Chronicprogr, Minimal  
Infiltration Cellular Histiocyte, Moderate
- \* Lung  
Alveolus  
[ Infiltration Cellular TGLs = 3 - 4+5 ]  
Atrophy Lymphoid, Minimal  
Fibroadenoma  
Hyperplasia Minimal
- \* Ovary  
Atrophy Minimal
- \* Pituitary Gland  
Pars Distalis  
Adenoma
- \* Spleen  
Extramedullary Hematopoiesis Minimal  
Pigment Mild
- \* Uterus  
Endometrium  
Metaplasia Squamous, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 342

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000357

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Mild
* Bone Marrow		Hyperplasia	Moderate
* Kidney		Calculus Micro Observation Only	Minimal
* Liver		Basophilic Focus	
		Eosinophilic Focus	
		Hepatocellular Adenoma	
	[ Eosinophilic Focus TGLs = 6 - 3 ]		
	[ Hepatocellular Adenoma TGLs = 5 - 16 ]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 4 - 4+5 ]		
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2,3 - 14+15+17 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
* Spleen		Extramedullary Hematopoiesis	Mild
* Thymus		Atrophy	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Polyp Stromal	
	[ Polyp Stromal TGLs = 7 - 12 ]		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 343

TRT#: 2

SEX: Female

DAY ON TEST: 323

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000358

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular | * Nose                     |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

AUTO PRECLUDES DIAG.

- \* Lymph Node, Mesenteric

OBSERVATIONS

- |                 |  |                              |                            |
|-----------------|--|------------------------------|----------------------------|
| * Bone Marrow   |  | Hyperplasia                  | Moderate                   |
| * Liver         |  | Extramedullary Hematopoiesis | Minimal                    |
| * Lung          |  | Adenocarcinoma               | Metastatic (Mammary Gland) |
|                 | [ Adenocarcinoma TGLs = 2, 3 - 15 + 16 ] |                              |                            |
| * Mammary Gland |  | Adenocarcinoma               |                            |
|                 | [ Adenocarcinoma TGLs = 1 - 14 ]         |                              |                            |
| * Ovary         |  | Atrophy                      | Mild                       |
| * Spleen        |  | Extramedullary Hematopoiesis | Mild                       |
| * Thymus        |  | Atrophy                      | Mild                       |

PRIMARY CAUSE OF DEATH - Mammary Gland Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 344

TRT#: 2

SEX: Female

DAY ON TEST: 667

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000359

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Clitoral Gland
* Esophagus	* Eye	* Harderian Gland	* Heart
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Mammary Gland	* Nose	* Parathyroid Gland	* Salivary Glands
* Skin	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Adrenal Cortex		Leukemia Mononuclear	
* Bone Marrow		Hyperplasia	Moderate
* Brain		Hemorrhage	Moderate
	[ Hemorrhage TGLs = 6 - 10 ]		
* Kidney	Renal Tubule	Mineral	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver		Leukemia Mononuclear	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 4 - 4+5 ]	Leukemia Mononuclear	
* Lymph Node, Mesenteric		Leukemia Mononuclear	
* Ovary		Atrophy	Mild
* Pancreas		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLs = 3 - 15 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 5 - 16 ]		
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLs = 2 - 14 ]		
* Stomach, Forestomach		Leukemia Mononuclear	
* Stomach, Glandular		Leukemia Mononuclear	
* Thymus		Atrophy	Moderate

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 345

TRT#: 2

SEX: Female

DAY ON TEST: 312

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000360

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thymus
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow: Hyperplasia, Moderate
- \* Kidney: Nephropathy, Chronicprogr, Minimal
- \* Liver: Hepatocyte, Increased Mitoses, Minimal
- \* Lung: Alveolus, Infiltration Cellular, Histiocyte, Minimal  
[ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland: Fibroadenoma  
[ Fibroadenoma TGLs = 1 -14 ]
- \* Ovary: Atrophy, Minimal
- \* Pituitary Gland: Pars Distalis, Hyperplasia, Minimal
- \* Spleen: Extramedullary Hematopoiesis, Minimal  
Pigment, Minimal
- \* Thyroid Gland: Follicular Cel, Hypertrophy, Moderate
- \* Uterus: Endometrium, Hyperplasia, Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 347

TRT#: 2

SEX: Female

DAY ON TEST: 274

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000362

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Liver                  | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Ovary                     | * Pancreas               | * Parathyroid Gland        | * Pituitary Gland         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | * Uterus                  |

MISSING

- |                          |                   |
|--------------------------|-------------------|
| * Lymph Node, Mandibular | * Salivary Glands |
|--------------------------|-------------------|

OBSERVATIONS

- |               |  |                       |                   |
|---------------|--|-----------------------|-------------------|
| * Bone Marrow |  | Carcinoma             | Metastatic (Nose) |
| * Brain       |  | Gliosis               | Diffuse, Marked   |
| * Lung        | Alveolus                                 | Infiltration Cellular | Histiocyte, Mild  |
|               | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                       |                   |
| * Nose        | Glands                                   | Carcinoma             |                   |
| * Spleen      |  | Pigment               | Minimal           |

PRIMARY CAUSE OF DEATH - Nose Glands Carcinoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 348

TRT#: 2

SEX: Female

DAY ON TEST: 382

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000363

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         | * Uterus                    |                          |                            |

OBSERVATIONS

- |                          |                |                       |                         |
|--------------------------|----------------|-----------------------|-------------------------|
| * Bone                   | Femur          | Osteosarcoma          |                         |
| * Kidney                 |                | Nephropathy           | Chronicprogr, Minimal   |
| * Lung                   | Alveolus       | Infiltration Cellular | Histiocyte, Mild        |
| * Lymph Node, Mandibular |                | Hyperplasia           | Lymphoid, Moderate      |
| * Ovary                  |                | Atrophy               | Mild                    |
| * Spleen                 |                | Pigment               | Mild                    |
| * Stomach, Forestomach   | Epithelium     | Hyperplasia           | Mild                    |
|                          | Submucosa      | Inflammation          | Chronic Active, Minimal |
| * Thymus                 |                | Atrophy               | Mild                    |
| * Thyroid Gland          | Follicular Cel | Hypertrophy           | Mild                    |

PRIMARY CAUSE OF DEATH - Bone Femur Osteosarcoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 349

TRT#: 2

SEX: Female

DAY ON TEST: 745

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000364

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Nose                    | * Ovary                     | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

MISSING

- \* Thymus

OBSERVATIONS

- |                   |  |                              |                  |
|-------------------|--|------------------------------|------------------|
| * Bone Marrow     |  | Hyperplasia                  | Moderate         |
| * Liver           |  | Extramedullary Hematopoiesis | Minimal          |
| * Lung            | Alveolus                                 | Infiltration Cellular        | Histiocyte, Mild |
|                   | [ Infiltration Cellular TGLs = 3 - 4+5 ] |                              |                  |
| * Mammary Gland   |  | Fibroadenoma                 | Multiple         |
|                   | [ Fibroadenoma TGLs = 1,2 - 14+15 ]      | Hyperplasia                  | Moderate         |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                  | Minimal          |
| * Spleen          |  | Extramedullary Hematopoiesis | Mild             |
| * Thyroid Gland   | C Cell                                   | Hyperplasia                  | Minimal          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 350

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000365

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |                   |  |                              |                            |
|-------------------|--|------------------------------|----------------------------|
| * Kidney          |  | Adenocarcinoma               | Metastatic (Mammary Gland) |
| * Lung            | Alveolus                                 | Infiltration Cellular        | Histiocyte, Moderate       |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                              |                            |
| * Mammary Gland   |  | Adenocarcinoma               |                            |
|                   | [ Adenocarcinoma TGLs = 1 - 14 ]         |                              |                            |
| * Ovary           |  | Atrophy                      | Mild                       |
|                   |  | Cyst                         |                            |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                  | Mild                       |
| * Spleen          |  | Extramedullary Hematopoiesis | Minimal                    |
|                   |  | Pigment                      | Minimal                    |
| * Thymus          |  | Atrophy                      | Mild                       |
| * Uterus          | Endometrium                              | Hyperplasia                  | Cystic, Minimal            |
|                   | Endometrium                              | Metaplasia                   | Squamous, Mild             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 351

TRT#: 2

SEX: Female

DAY ON TEST: 673

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000366

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |                          |  |                                 |                       |
|--------------------------|--|---------------------------------|-----------------------|
| * Kidney                 |  | Calculus Micro Observation Only | Minimal               |
|                          |  | Nephropathy                     | Chronicprogr, Minimal |
| * Lung                   | Alveolus                                 | Infiltration Cellular           | Histiocyte, Minimal   |
|                          | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                                 |                       |
| * Lymph Node, Mandibular |  | Atrophy                         | Lymphoid, Minimal     |
| * Ovary                  |  | Atrophy                         | Minimal               |
| * Pituitary Gland        | Pars Distalis                            | Adenoma                         |                       |
|                          | [ Adenoma TGLs = 1 - 14 ]                |                                 |                       |
| * Spleen                 | Lymph Follic                             | Atrophy                         | Minimal               |
|                          |  | Pigment                         | Mild                  |
| * Thymus                 |  | Atrophy                         | Minimal               |
| * Uterus                 | Endometrium                              | Metaplasia                      | Squamous, Minimal     |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 352

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000367

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

OBSERVATIONS

- |                   |  |                                 |                       |
|-------------------|--|---------------------------------|-----------------------|
| * Bone Marrow     |  | Hyperplasia                     | Mild                  |
| * Kidney          |  | Calculus Micro Observation Only | Minimal               |
|                   |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver           |  | Clear Cell Focus                |                       |
|                   |  | Extramedullary Hematopoiesis    | Minimal               |
| * Mammary Gland   |  | Fibroadenoma                    | Multiple              |
|                   | [ Fibroadenoma TGLs = 1,2,3 - 14+15+16 ] |                                 |                       |
| * Ovary           |  | Cyst                            |                       |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                     | Mild                  |
| * Spleen          |  | Extramedullary Hematopoiesis    | Mild                  |
| * Thymus          |  | Atrophy                         | Marked                |

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 353

TRT#: 2

SEX: Female

DAY ON TEST: 745

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000368

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Stomach, Forestomach
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Liver
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Bile Duct
- Bile Duct
- [ Cyst TGLs = 1 - 14 ]
- [ Fibroadenoma TGLs = 2,3 - 15+16 ]
- Pars Distalis
- Endometrium
- Endometrium
- Degeneration
- Calculus Micro Observation Only
- Nephropathy
- Cyst
- Extramedullary Hematopoiesis
- Hyperplasia
- Fibroadenoma
- Atrophy
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Hyperplasia
- Metaplasia
- Cystic, Minimal
- Minimal
- Chronicprogr, Mild
- Minimal
- Minimal
- Multiple
- Minimal
- Moderate
- Mild
- Minimal
- Minimal
- Mild
- Cystic, Minimal
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 354

TRT#: 2

SEX: Female

DAY ON TEST: 638

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000369

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Nose	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder			

OBSERVATIONS

* Bone Marrow		Hyperplasia	Moderate
* Kidney		Calculus Micro Observation Only	Mild
		Nephropathy	Chronicprogr, Minimal
* Liver	Bile Duct	Cyst	
	Hepatocyte	Increased Mitoses	Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2 - 15 ]		
* Spleen		Extramedullary Hematopoiesis	Mild
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 355

TRT#: 2

SEX: Female

DAY ON TEST: 661

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000370

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 1 - 4+5 ]		
* Ovary		Atrophy	Mild
		Cyst	
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2 - 14 ]		
* Spleen	Lymph Follic	Atrophy	Mild
* Thymus		Atrophy	Mild
* Uterus		Adenomyosis	Mild
	Endometrium	Hyperplasia	Cystic, Mild
	Endometrium	Metaplasia	Squamous, Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 356

TRT#: 2

SEX: Female

DAY ON TEST: 744

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000371

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Cortex
- \* Islets, Pancreatic
- \* Kidney
- \* Liver
- \* Lung
  - [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Ovary
- \* Pituitary Gland
  - [ Adenoma TGLs = 1 - 9 ]
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Alveolus
- Pars Distalis
- C Cell
- Endometrium
- Degeneration
- Hyperplasia
- Calculus Micro Observation Only
- Nephropathy
- Extramedullary Hematopoiesis
- Inflammation
- Infiltration Cellular
- Atrophy
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Hyperplasia
- Cystic, Mild
- Mild
- Minimal
- Chronicprogr, Minimal
- Minimal
- Focal, Minimal
- Histiocyte, Minimal
- Mild
- Moderate
- Minimal
- Marked
- Marked
- Cystic, Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 357

TRT#: 2

SEX: Female

DAY ON TEST: 744

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000372

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Salivary Glands
- \* Trachea
- Blood Vessel
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Skin
- \* Urinary Bladder
- \* Bone
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Glandular
- \* Brain
- \* Heart
- \* Intestine Small, Duodenum
- \* Kidney
- \* Parathyroid Gland
- \* Thyroid Gland

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Clitoral Gland
- \* Liver
- \* Lung
  - [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1 - 14 ]
- \* Nose
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Uterus
- Bile Duct
- Alveolus
- Pars Distalis
- Epithelium
- Endometrium
- Degeneration
- Hyperplasia
- Hyperplasia
- Basophilic Focus
- Eosinophilic Focus
- Extramedullary Hematopoiesis
- Hyperplasia
- Infiltration Cellular
- Fibroadenoma
- Hyperplasia
- Inflammation
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Hyperplasia
- Atrophy
- Hyperplasia
- Polyp Stromal
- Cystic, Moderate
- Moderate
- Squamous, Moderate
- Minimal
- Minimal
- Histiocyte, Mild
- Minimal
- Minimal
- Mild
- Minimal
- Moderate
- Cystic, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 358

TRT#: 2

SEX: Female

DAY ON TEST: 746

DOSE: 0/0 ppm

DISP: Terminal Sacrifice

HISTO: 1000373

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Parathyroid Gland
- \* Spleen
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Heart
  - Cardiomyopathy
  - Minimal
- \* Kidney
  - Schwann Cell
  - Hyperplasia
  - Mild
  - Nephropathy
  - Chronicprogr, Minimal
- \* Liver
  - Basophilic Focus
  - Eosinophilic Focus
  - Infiltration Cellular
  - Histiocyte, Mild
- \* Lung
  - Alveolus
  - [ Infiltration Cellular TGLs = 3 - 4+5 ]
- \* Mammary Gland
  - Fibroadenoma
  - [ Fibroadenoma TGLs = 2 - 14 ]
- \* Ovary
  - Atrophy
  - Mild
  - Cyst
- \* Pituitary Gland
  - Pars Distalis
  - Adenoma
- \* Thymus
  - Atrophy
  - Moderate
- \* Thyroid Gland
  - Follicular Cel
  - Hypertrophy
  - Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 359

TRT#: 2

SEX: Female

DAY ON TEST: 411

DOSE: 0/0 ppm

DISP: Moribund Sacrifice

HISTO: 1000374

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Nose                      | * Ovary                  | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |
| * Uterus                    |                          |                            |                           |

OBSERVATIONS

- |          |           |                |                       |
|----------|-----------|----------------|-----------------------|
| * Brain  |           | Necrosis       | Marked                |
| * Heart  |           | Cardiomyopathy | Minimal               |
| * Kidney |           | Nephropathy    | Chronicprogr, Minimal |
| * Liver  | Bile Duct | Cyst           |                       |
| * Spleen |           | Pigment        | Mild                  |
| * Thymus |           | Atrophy        | Moderate              |

PRIMARY CAUSE OF DEATH - Brain Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 360

TRT#: 2

SEX: Female

DAY ON TEST: 688

DOSE: 0/0 ppm

DISP: Natural Death

HISTO: 1000375

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                |
| * Urinary Bladder          | * Uterus                  |                             |                          |

OBSERVATIONS

- |                          |                                     |                                 |                    |
|--------------------------|-------------------------------------|---------------------------------|--------------------|
| * Kidney                 |                                     | Calculus Micro Observation Only | Minimal            |
| * Liver                  |                                     | Clear Cell Focus                |                    |
|                          |                                     | Extramedullary Hematopoiesis    | Minimal            |
| * Lymph Node, Mandibular |                                     | Atrophy                         | Lymphoid, Moderate |
| * Mammary Gland          |                                     | Fibroadenoma                    | Multiple           |
|                          |                                     | Hyperplasia                     | Mild               |
|                          | [ Fibroadenoma TGLs = 1,2 - 14+15 ] |                                 |                    |
| * Ovary                  |                                     | Cyst                            |                    |
| * Pituitary Gland        | Pars Distalis                       | Adenoma                         |                    |
|                          | [ Adenoma TGLs = 3 - 9 ]            |                                 |                    |
| * Spleen                 | Lymph Follic                        | Atrophy                         | Mild               |
|                          |                                     | Extramedullary Hematopoiesis    | Moderate           |
|                          |                                     | Pigment                         | Minimal            |
| * Thymus                 |                                     | Atrophy                         | Moderate           |
| * Thyroid Gland          | Bilateral, C Cell                   | Adenoma                         |                    |
|                          | [ Adenoma TGLs = 4 - 9 ]            |                                 |                    |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 362

TRT#: 4

SEX: Female

DAY ON TEST: 695

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000377

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Mammary Gland          | * Nose                     |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         | * Uterus                    |                          |                            |

**MISSING**

- \* Thymus

**OBSERVATIONS**

- |                          |  |                              |                      |
|--------------------------|--|------------------------------|----------------------|
| * Eye                    | Retina                                   | Degeneration                 | Moderate             |
| * Kidney                 | Papilla, Urothelium                      | Hyperplasia                  | Minimal              |
|                          | [ Nephropathy TGLs = 1 - 6 ]             | Nephropathy                  | Chronicprogr, Marked |
| * Liver                  | Hepatocyte                               | Cytoplasmic Alteration       | Mild                 |
|                          | Hepatocyte                               | Hypertrophy                  | Minimal              |
|                          |  | Pigment                      | Minimal              |
| * Lung                   | Hepatocyte                               | Single Cell Death            | Minimal              |
|                          | Alveolus                                 | Infiltration Cellular        | Histiocyte, Mild     |
|                          | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                              |                      |
| * Lymph Node, Mesenteric |  | Atrophy                      | Lymphoid, Minimal    |
| * Ovary                  |  | Atrophy                      | Marked               |
| * Spleen                 | Lymph Follic                             | Atrophy                      | Minimal              |
|                          |  | Extramedullary Hematopoiesis | Minimal              |
|                          |  | Pigment                      | Minimal              |
| * Thyroid Gland          | Follicular Cel                           | Hypertrophy                  | Moderate             |

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 363

TRT#: 4

SEX: Female

DAY ON TEST: 643

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000378

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Brain                   | * Clitoral Gland            |
| * Esophagus              | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Mammary Gland             |
| * Nose                   | * Pancreas                 | * Parathyroid Gland       | * Pituitary Gland           |
| * Salivary Glands        | * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |                             |

OBSERVATIONS

- |                          |  |                              |                                    |
|--------------------------|--|------------------------------|------------------------------------|
| * Adrenal Cortex         |  | Degeneration                 | Cystic, Mild                       |
| * Adrenal Medulla        |  | Hyperplasia                  | Minimal                            |
| * Bone Marrow            |  | Hyperplasia                  | Moderate                           |
| * Kidney                 |  | Nephropathy                  | Chronicprogr, Minimal              |
| * Liver                  | Bile Duct                                | Hyperplasia                  | Minimal                            |
|                          | Centrilobular                            | Necrosis                     | Mild                               |
| * Lung                   | Alveolus                                 | Infiltration Cellular        | Histiocyte, Mild                   |
|                          |  | Inflammation                 | Multifocal, Granulomatous, Minimal |
|                          | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                              |                                    |
| * Lymph Node, Mandibular |  | Atrophy                      | Lymphoid, Minimal                  |
| * Lymph Node, Mesenteric |  | Atrophy                      | Lymphoid, Mild                     |
| * Ovary                  |  | Atrophy                      | Minimal                            |
| * Spleen                 | Lymph Follic                             | Atrophy                      | Mild                               |
|                          |  | Extramedullary Hematopoiesis | Moderate                           |
| * Thymus                 |  | Atrophy                      | Mild                               |
| * Uterus                 |  | Dilation                     | Marked                             |
|                          |  | Inflammation                 | Marked                             |
|                          | [ Dilation TGLs = 1 - 14 ]               |                              |                                    |
|                          | [ Inflammation TGLs = 1 - 14 ]           |                              |                                    |

PRIMARY CAUSE OF DEATH - Uterus Dilation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 364

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000379

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

OBSERVATIONS

- |                   |  |                               |                       |
|-------------------|--|-------------------------------|-----------------------|
| * Adrenal Medulla |  | Hyperplasia                   | Minimal               |
| * Kidney          |  | Accumulation, Hyaline Droplet | Minimal               |
|                   |  | Nephropathy                   | Chronicprogr, Minimal |
| * Liver           |  | Inflammation                  | Focal, Minimal        |
| * Lung            | Alveolus                                 | Infiltration Cellular         | Histiocyte, Mild      |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                               |                       |
| * Mammary Gland   |  | Fibroadenoma                  |                       |
|                   |  | Hyperplasia                   | Mild                  |
|                   | [ Fibroadenoma TGLs = 1 - 14 ]           |                               |                       |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                   | Mild                  |
| * Spleen          |  | Extramedullary Hematopoiesis  | Minimal               |
| * Thymus          |  | Atrophy                       | Moderate              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 368

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000383

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Salivary Glands
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Skin
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Stomach, Forestomach
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Adrenal Cortex
- \* Eye
- \* Heart
- \* Kidney
- \* Liver
- \* Mammary Gland
- \* Ovary
- \* Pancreas
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Retina
- Papilla, Urothelium
- Bile Duct
- Bile Duct
- Acinus
- Pars Distalis
- C Cell
- C Cell
- Endometrium
- Endometrium
- Degeneration
- Degeneration
- Cardiomyopathy
- Calculus Micro Observation Only
- Hyperplasia
- Nephropathy
- Clear Cell Focus
- Cyst
- Fatty Change
- Hyperplasia
- Hyperplasia
- Atrophy
- Atrophy
- Hyperplasia
- Extramedullary Hematopoiesis
- Atrophy
- Adenoma
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Metaplasia
- Cystic, Minimal
- Mild
- Minimal
- Minimal
- Minimal
- Minimal
- Chronicprogr, Minimal
- Focal, Minimal
- Minimal
- Minimal
- Mild
- Minimal
- Minimal
- Mild
- Mild
- Cystic, Minimal
- Squamous, Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 369

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000384

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| Blood Vessel                | * Bone                   | * Bone Marrow              | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | Lymph Node               | * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  |
| * Nose                      | * Ovary                  | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |
| * Uterus                    |                          |                            |                           |

OBSERVATIONS

- |                   |                                |                              |                       |
|-------------------|--------------------------------|------------------------------|-----------------------|
| * Adrenal Cortex  |                                | Degeneration                 | Cystic, Mild          |
| * Adrenal Medulla |                                | Hyperplasia                  | Moderate              |
| * Kidney          |                                | Nephropathy                  | Chronicprogr, Minimal |
| * Liver           |                                | Basophilic Focus             |                       |
|                   | Bile Duct                      | Hyperplasia                  | Mild                  |
| * Mammary Gland   |                                | Fibroadenoma                 |                       |
|                   | [ Fibroadenoma TGLs = 1 - 14 ] | Hyperplasia                  | Moderate              |
| * Spleen          |                                | Extramedullary Hematopoiesis | Mild                  |
|                   |                                | Pigment                      | Minimal               |
| * Thymus          |                                | Atrophy                      | Moderate              |

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 370

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000385

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

OBSERVATIONS

- |                   |               |                              |          |
|-------------------|---------------|------------------------------|----------|
| * Adrenal Medulla |               | Pheochromocytoma Benign      |          |
| * Liver           | Bile Duct     | Hyperplasia                  | Minimal  |
| * Mammary Gland   |               | Hyperplasia                  | Mild     |
| * Ovary           |               | Cyst                         |          |
| * Pituitary Gland | Pars Distalis | Hyperplasia                  | Minimal  |
| * Spleen          |               | Extramedullary Hematopoiesis | Minimal  |
|                   |               | Pigment                      | Minimal  |
| * Thymus          |               | Atrophy                      | Moderate |
| * Thyroid Gland   | C Cell        | Adenoma                      |          |

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 372

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000387

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Skin
- \* Trachea
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Stomach, Forestomach
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Kidney
- \* Liver
- Bile Duct
- [ Cyst TGLs = 2,3 - 15+16 ]
- \* Lung
- [ Infiltration Cellular TGLs = 4 - 4 ]
- \* Ovary
- \* Pancreas
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- [ Hyperplasia TGLs = 1 - 14 ]
- Hyperplasia
- Hyperplasia
- Nephropathy
- Clear Cell Focus
- Cyst
- Extramedullary Hematopoiesis
- Infiltration Cellular
- Atrophy
- Cyst
- Atrophy
- Hyperplasia
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Minimal
- Moderate
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Minimal
- Minimal
- Minimal
- Moderate
- Mild
- Moderate
- Cystic, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 373

TRT#: 4

SEX: Female

DAY ON TEST: 707

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000388

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                            |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex         | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow            | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Eye                    | * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Nose                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands        | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thyroid Gland          | * Trachea                   | * Urinary Bladder        |                            |

OBSERVATIONS

- |                                |              |                              |                       |
|--------------------------------|--------------|------------------------------|-----------------------|
| * Intestine Large, Rectum      |              | Inflammation                 | Focal, Mild           |
| * Kidney                       |              | Nephropathy                  | Chronicprogr, Minimal |
| * Lung                         | Alveolus     | Infiltration Cellular        | Histiocyte, Minimal   |
| * Mammary Gland                |              | Fibroadenoma                 |                       |
| [ Fibroadenoma TGLs = 1 - 14 ] |              |                              |                       |
| * Ovary                        |              | Atrophy                      | Minimal               |
| * Spleen                       | Lymph Follic | Atrophy                      | Mild                  |
|                                |              | Extramedullary Hematopoiesis | Moderate              |
| * Thymus                       |              | Atrophy                      | Moderate              |
| * Uterus                       | Endometrium  | Hyperplasia                  | Minimal               |
|                                | Endometrium  | Metaplasia                   | Squamous, Minimal     |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 374

TRT#: 4

SEX: Female

DAY ON TEST: 470

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000389

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Bone Marrow		Hyperplasia	Minimal
* Intestine Large, Colon		Parasite Metazoan	
* Kidney	Papilla, Urothelium	Hyperplasia	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver	Bile Duct	Cyst	
		Inflammation	Focal, Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 2 - 4+5 ]		
* Lymph Node, Mandibular		Infiltration Cellular	Plasma Cell, Mild
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Nose		Inflammation	Mild
* Spleen		Extramedullary Hematopoiesis	Moderate
* Thymus		Atrophy	Moderate

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 375

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000390

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Nose
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Pancreas
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Kidney
    - Papilla, Urothelium
  - \* Liver
    - Bile Duct
  - \* Lung
    - Alveolus
    - [ Infiltration Cellular TGLs = 2 - 4+5 ]
  - \* Lymph Node, Mandibular
  - \* Lymph Node, Mesenteric
  - \* Mammary Gland
    - [ Fibroadenoma TGLs = 1 - 14 ]
  - \* Ovary
  - \* Spleen
    - Lymph Follic
  - \* Thymus
  - \* Uterus
    - Endometrium
- Hyperplasia
  - Nephropathy
  - Clear Cell Focus
  - Hyperplasia
  - Inflammation
  - Infiltration Cellular
  - Atrophy
  - Atrophy
  - Fibroadenoma
  - Atrophy
  - Atrophy
  - Atrophy
  - Hyperplasia
- Minimal
  - Chronicprogr, Minimal
  - Minimal
  - Focal, Minimal
  - Histiocyte, Mild
  - Lymphoid, Minimal
  - Lymphoid, Minimal
  - Mild
  - Mild
  - Moderate
  - Cystic, Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 376

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000391

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           |                          |                            |

OBSERVATIONS

- |                   |  |                       |                       |
|-------------------|--|-----------------------|-----------------------|
| * Adrenal Cortex  |  | Hypertrophy           | Minimal               |
| * Kidney          |  | Nephropathy           | Chronicprogr, Minimal |
| * Liver           | Bile Duct                                | Hyperplasia           | Minimal               |
|                   |  | Inflammation          | Focal, Minimal        |
| * Lung            | Alveolus                                 | Infiltration Cellular | Histiocyte, Minimal   |
|                   | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                       |                       |
| * Ovary           |  | Atrophy               | Minimal               |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia           | Mild                  |
|                   | [ Hyperplasia TGLs = 2 - 9 ]             |                       |                       |
| * Spleen          |  | Pigment               | Minimal               |
| * Thymus          |  | Atrophy               | Moderate              |
| * Uterus          | Endometrium                              | Hyperplasia           | Cystic, Mild          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 377

TRT#: 4

SEX: Female

DAY ON TEST: 574

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000392

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Nose
- \* Pancreas
- \* Salivary Glands
- \* Skin
- \* Thyroid Gland
- \* Trachea
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Kidney                      Papilla, Urothelium                      Hyperplasia                      Minimal
- \* Liver                      Hepatocyte                      Cytoplasmic Alteration                      Minimal
- Bile Duct                      Hyperplasia                      Minimal
- Hepatocyte                      Hypertrophy                      Mild
- Hepatocyte                      Increased Mitoses                      Minimal
- Hepatocyte                      Single Cell Death                      Minimal
- \* Lung                      Alveolus                      Infiltration Cellular                      Histiocyte, Mild
- [ Infiltration Cellular    TGLs = 2 - 4+5 ]
- \* Mammary Gland                      Fibroadenoma
- [ Fibroadenoma    TGLs = 1 - 14 ]
- \* Ovary                      Atrophy                      Minimal
- \* Spleen                      Extramedullary Hematopoiesis                      Minimal
- Pigment                      Minimal
- \* Thymus                      Atrophy                      Moderate
- \* Uterus                      Endometrium                      Hyperplasia                      Cystic, Minimal
- Endometrium                      Metaplasia                      Squamous, Mild

PRIMARY CAUSE OF DEATH                      - Mammary Gland    Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 378

TRT#: 4

SEX: Female

DAY ON TEST: 695

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000393

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Spleen
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Lung
  - [ Infiltration Cellular TGLs = 3 - 4+5 ]
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1 - 14 ]
- \* Ovary
- \* Pituitary Gland
  - [ Adenoma TGLs = 2 - 15 ]
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Papilla, Urothelium
- Alveolus
- Pars Distalis
- C Cell
- Endometrium
- Degeneration
- Hyperplasia
- Calculus Micro Observation Only
- Hyperplasia
- Infiltration Cellular
- Fibroadenoma
- Hyperplasia
- Atrophy
- Adenoma
- Atrophy
- Adenoma
- Hyperplasia
- Polyp Stromal
- Cystic, Mild
- Mild
- Minimal
- Minimal
- Histiocyte, Minimal
- Minimal
- Minimal
- Mild
- Mild
- Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 379

TRT#: 4

SEX: Female

DAY ON TEST: 484

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000394

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Pituitary Gland         | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |

OBSERVATIONS

- |                 |                                |                              |                |
|-----------------|--------------------------------|------------------------------|----------------|
| * Bone Marrow   |                                | Hyperplasia                  | Mild           |
| * Liver         | Hepatocyte                     | Cytoplasmic Alteration       | Minimal        |
|                 | Bile Duct                      | Hyperplasia                  | Mild           |
|                 | Hepatocyte                     | Hypertrophy                  | Mild           |
|                 | Hepatocyte                     | Increased Mitoses            | Minimal        |
|                 |                                | Necrosis                     | Minimal        |
|                 | Hepatocyte                     | Single Cell Death            | Minimal        |
| * Mammary Gland |                                | Fibroadenoma                 |                |
|                 | [ Fibroadenoma TGLs = 1 - 14 ] |                              |                |
| * Ovary         |                                | Atrophy                      | Minimal        |
| * Spleen        |                                | Extramedullary Hematopoiesis | Mild           |
| * Thymus        |                                | Atrophy                      | Mild           |
| * Uterus        | Endometrium                    | Hyperplasia                  | Cystic, Mild   |
|                 | Endometrium                    | Metaplasia                   | Squamous, Mild |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 380

TRT#: 4

SEX: Female

DAY ON TEST: 676

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000395

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Nose                      | * Pancreas               | * Parathyroid Gland        | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        | * Uterus                   |                           |

OBSERVATIONS

- |                          |                           |                                 |          |
|--------------------------|---------------------------|---------------------------------|----------|
| * Adrenal Cortex         |                           | Necrosis                        | Minimal  |
| * Intestine Large, Colon |                           | Parasite Metazoan               |          |
| * Kidney                 |                           | Calculus Micro Observation Only | Minimal  |
|                          | Papilla, Urothelium       | Hyperplasia                     | Minimal  |
| * Liver                  |                           | Clear Cell Focus                |          |
|                          |                           | Pigment                         | Mild     |
| * Ovary                  |                           | Atrophy                         | Mild     |
| * Pituitary Gland        | Pars Distalis             | Adenoma                         |          |
|                          | [ Adenoma TGLs = 1 - 14 ] |                                 |          |
| * Spleen                 |                           | Pigment                         | Mild     |
| * Thymus                 |                           | Atrophy                         | Moderate |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 381

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000396

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Brain                   | * Clitoral Gland            |
| * Esophagus              | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      |
| * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         | * Skin                      |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

OBSERVATIONS

- |                   |                     |                              |                       |
|-------------------|---------------------|------------------------------|-----------------------|
| * Adrenal Cortex  |                     | Degeneration                 | Cystic, Minimal       |
| * Adrenal Medulla |                     | Hyperplasia                  | Minimal               |
| * Bone Marrow     |                     | Hyperplasia                  | Moderate              |
| * Kidney          | Papilla, Urothelium | Hyperplasia                  | Minimal               |
|                   |                     | Nephropathy                  | Chronicprogr, Minimal |
| * Liver           | Bile Duct           | Cyst                         |                       |
|                   |                     | Extramedullary Hematopoiesis | Minimal               |
|                   | Bile Duct           | Hyperplasia                  | Minimal               |
|                   |                     | Inflammation                 | Focal, Minimal        |
| * Ovary           |                     | Cyst                         |                       |
| * Pancreas        | Acinus              | Hyperplasia                  | Mild                  |
| * Spleen          |                     | Extramedullary Hematopoiesis | Mild                  |
| * Thymus          |                     | Atrophy                      | Moderate              |
| * Uterus          | Endometrium         | Hyperplasia                  | Cystic, Moderate      |
|                   | Endometrium         | Metaplasia                   | Squamous, Minimal     |
|                   |                     | Thrombus                     | Mild                  |

[ Hyperplasia TGLs = 1 - 12 ]

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 383

TRT#: 4

SEX: Female

DAY ON TEST: 470

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000398

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Pancreas                | * Parathyroid Gland         | * Salivary Glands        | * Skin                     |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                | * Urinary Bladder          |

OBSERVATIONS

- |                   |  |                              |                       |
|-------------------|--|------------------------------|-----------------------|
| * Bone Marrow     |  | Hyperplasia                  | Moderate              |
| * Kidney          |  | Nephropathy                  | Chronicprogr, Minimal |
| * Liver           | Hepatocyte                               | Hypertrophy                  | Mild                  |
|                   | Hepatocyte                               | Increased Mitoses            | Minimal               |
|                   | Hepatocyte                               | Single Cell Death            | Minimal               |
| * Lung            | Alveolus                                 | Infiltration Cellular        | Histiocyte, Mild      |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                              |                       |
| * Mammary Gland   |  | Fibroadenoma                 |                       |
|                   | [ Fibroadenoma TGLs = 1 - 14 ]           |                              |                       |
| * Ovary           |  | Atrophy                      | Minimal               |
|                   |  | Cyst                         |                       |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                  | Mild                  |
| * Spleen          |  | Extramedullary Hematopoiesis | Minimal               |
| * Thymus          |  | Atrophy                      | Moderate              |
| * Thyroid Gland   | C Cell                                   | Adenoma                      |                       |
|                   | Follicular Cel                           | Hypertrophy                  | Moderate              |
| * Uterus          | Endometrium                              | Metaplasia                   | Squamous, Minimal     |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 384

TRT#: 4

SEX: Female

DAY ON TEST: 574

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000399

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Ovary
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- \* Uterus

OBSERVATIONS

- \* Bone Marrow Hyperplasia Mild
- \* Kidney Cortex Cyst Minimal
- [ Cyst TGLs = 3 - 6+16 ]
- \* Liver Extramedullary Hematopoiesis Minimal
- \* Lung Alveolus Infiltration Cellular Histiocyte, Minimal
- \* Mammary Gland Fibroadenoma Multiple
- [ Fibroadenoma TGLs = 1,2 - 14+15 ]
- \* Spleen Extramedullary Hematopoiesis Mild
- Lymph Follic Hyperplasia Minimal
- \* Thymus Atrophy Moderate
- \* Thyroid Gland Follicular Cel Hypertrophy Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 386

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000401

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Bile Duct
- Alveolus
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- Pars Distalis
- Lymph Follic
- Endometrium
- Endometrium
- Hyperplasia
- Cardiomyopathy
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Atrophy
- Hyperplasia
- Atrophy
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Metaplasia
- Minimal
- Minimal
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Minimal
- Minimal
- Mild
- Minimal
- Minimal
- Moderate
- Cystic, Minimal
- Squamous, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 387

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000402

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Liver
  - [ Hepatodiaphragmatic Nodule TGLs = 4 - 15 ]
- \* Lung
  - [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1 - 14 ]
- \* Pituitary Gland
  - [ Adenoma TGLs = 3 - 15 ]
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- Pars Distalis
- C Cell
- Degeneration
- Nephropathy
- Hepatodiaphragmatic Nodule
- Infiltration Cellular
- Fibroadenoma
- Hyperplasia
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Adenoma
- Cystic, Minimal
- Chronicprogr, Minimal
- Histiocyte, Moderate
- Moderate
- Mild
- Minimal
- Minimal

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 388

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000403

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Brain                     | * Clitoral Gland         |
| * Esophagus                | * Eye                     | * Harderian Gland           | * Heart                  |
| * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Glandular      | * Trachea                   | * Urinary Bladder        |
| * Uterus                   |                           |                             |                          |

OBSERVATIONS

- |                          |  |                              |                      |
|--------------------------|--|------------------------------|----------------------|
| * Adrenal Cortex         |  | Degeneration                 | Cystic, Mild         |
| * Adrenal Medulla        |  | Hyperplasia                  | Mild                 |
| * Bone Marrow            |  | Hyperplasia                  | Moderate             |
| * Intestine Large, Colon |  | Parasite Metazoan            |                      |
| * Kidney                 | Papilla, Urothelium                      | Hyperplasia                  | Minimal              |
| * Liver                  | Hepatocyte                               | Cytoplasmic Alteration       | Mild                 |
|                          | Hepatocyte                               | Hypertrophy                  | Minimal              |
|                          | Centrilobular                            | Necrosis                     | Mild                 |
| * Lung                   | Alveolus                                 | Infiltration Cellular        | Histiocyte, Mild     |
|                          | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                              |                      |
| * Mammary Gland          |  | Fibroadenoma                 |                      |
|                          | [ Fibroadenoma TGLs = 1 - 14 ]           |                              |                      |
| * Ovary                  |  | Atrophy                      | Mild                 |
| * Pituitary Gland        | Pars Distalis                            | Adenoma                      |                      |
| * Spleen                 | Lymph Follic                             | Atrophy                      | Minimal              |
|                          |  | Extramedullary Hematopoiesis | Moderate             |
| * Stomach, Forestomach   | Epithelium                               | Hyperplasia                  | Moderate             |
|                          | Submucosa                                | Inflammation                 | Chronic Active, Mild |
|                          |  | Ulcer                        | Mild                 |
|                          | [ Hyperplasia TGLs = 3 - 15 ]            |                              |                      |
| * Thymus                 |  | Atrophy                      | Marked               |
| * Thyroid Gland          | C Cell                                   | Adenoma                      |                      |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

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**ANIMAL ID:** 388

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 0/300 ppm

**DISP:** Natural Death

**HISTO:** 1000403

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 389

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000404

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

OBSERVATIONS

- |                          |  |                       |                       |
|--------------------------|--|-----------------------|-----------------------|
| * Adrenal Cortex         |  | Degeneration          | Cystic, Minimal       |
| * Intestine Large, Colon |  | Parasite Metazoan     |                       |
| * Kidney                 | Cortex                                   | Cyst                  |                       |
|                          | Papilla, Urothelium                      | Hyperplasia           | Minimal               |
|                          |  | Nephropathy           | Chronicprogr, Minimal |
|                          | [ Cyst TGLs = 1 - 6 ]                    |                       |                       |
| * Liver                  | Bile Duct                                | Hyperplasia           | Minimal               |
| * Lung                   | Alveolus                                 | Infiltration Cellular | Histiocyte, Moderate  |
|                          | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                       |                       |
| * Ovary                  |  | Atrophy               | Minimal               |
|                          |  | Cyst                  |                       |
| * Thymus                 |  | Atrophy               | Moderate              |
| * Uterus                 |  | Dilation              | Moderate              |

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 390

TRT#: 4

SEX: Female

DAY ON TEST: 250

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000405

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Lung                   | * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  |
| * Mammary Gland             | * Nose                   | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | * Uterus                  |

OBSERVATIONS

- |                  |                           |                              |          |
|------------------|---------------------------|------------------------------|----------|
| * Adrenal Cortex |                           | Vacuolization Cytoplasmic    | Minimal  |
| * Bone Marrow    |                           | Hyperplasia                  | Mild     |
| * Liver          | Hepatocyte                | Cytoplasmic Alteration       | Moderate |
|                  |                           | Extramedullary Hematopoiesis | Minimal  |
|                  | Hepatocyte                | Hypertrophy                  | Mild     |
|                  | Centrilobular             | Necrosis                     | Mild     |
| * Ovary          |                           | Atrophy                      | Mild     |
|                  |                           | Cyst                         |          |
| * Skin           | Subcut Tiss               | Fibroma                      |          |
|                  | [ Fibroma TGLs = 1 - 14 ] |                              |          |
| * Spleen         |                           | Extramedullary Hematopoiesis | Mild     |
| * Thymus         |                           | Atrophy                      | Mild     |

PRIMARY CAUSE OF DEATH - Skin Subcut Tiss Fibroma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 391

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000406

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Bile Duct
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 3 - 4+5 ]
- [ Hemangiosarcoma TGLs = 1 - 14 ]
- [ Extramedullary Hematopoiesis TGLs = 2 - 6 ]
- Endometrium
- Endometrium
- Hyperplasia
- Hyperplasia
- Calculus Micro Observation Only
- Nephropathy
- Basophilic Focus
- Extramedullary Hematopoiesis
- Hyperplasia
- Hypertrophy
- Infiltration Cellular
- Atrophy
- Adenoma
- Hemangiosarcoma
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Metaplasia
- Polyp Stromal
- Minimal
- Moderate
- Minimal
- Chronicprogr, Minimal
- Minimal
- Minimal
- Histiocyte, Mild
- Minimal
- Marked
- Moderate
- Cystic, Mild
- Squamous, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 392

TRT#: 4

SEX: Female

DAY ON TEST: 690

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000407

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lung
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Forestomach
- \* Trachea
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland

OBSERVATIONS

- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Renal Tubule
- Papilla, Urothelium
- Bile Duct
- Pars Distalis
- Endometrium
- Endometrium
- Parasite Metazoan
- Adenoma
- Hyperplasia
- Infarct
- Nephropathy
- Hyperplasia
- Hyperplasia
- Inflammation
- Atrophy
- Cyst
- Adenoma
- Pigment
- Atrophy
- Hyperplasia
- Metaplasia
- Minimal
- Minimal
- Chronicprogr, Minimal
- Minimal
- Minimal
- Mild
- Moderate
- Moderate
- Moderate
- Cystic, Minimal
- Squamous, Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 393

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000408

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     | * Pancreas                |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  | * Urinary Bladder         |

OBSERVATIONS

- |                   |  |                                 |                       |
|-------------------|--|---------------------------------|-----------------------|
| * Adrenal Medulla |  | Hyperplasia                     | Mild                  |
| * Bone Marrow     |  | Hyperplasia                     | Minimal               |
| * Kidney          |  | Calculus Micro Observation Only | Minimal               |
|                   |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver           |  | Basophilic Focus                |                       |
|                   |  | Clear Cell Focus                |                       |
| * Lung            | Alveolus                                 | Infiltration Cellular           | Histiocyte, Minimal   |
|                   | [ Infiltration Cellular TGLs = 4 - 4+5 ] |                                 |                       |
| * Mammary Gland   |  | Fibroadenoma                    | Multiple              |
|                   | [ Fibroadenoma TGLs = 1,2 - 14+15 ]      |                                 |                       |
| * Ovary           |  | Atrophy                         | Mild                  |
|                   | [ Cyst TGLs = 3 - 16 ]                   | Cyst                            |                       |
| * Pituitary Gland | Pars Distalis                            | Adenoma                         |                       |
| * Thymus          |  | Atrophy                         | Moderate              |
| * Thyroid Gland   | C Cell                                   | Adenoma                         |                       |
| * Uterus          | Endometrium                              | Hyperplasia                     | Cystic, Minimal       |
|                   |  | Polyp Stromal                   |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 394

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000409

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Nose
- \* Skin
- \* Stomach, Forestomach
- \* Trachea
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                                 |                       |
|-------------------|--|---------------------------------|-----------------------|
| * Kidney          |  | Calculus Micro Observation Only | Minimal               |
|                   |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver           | Bile Duct                                | Cyst                            |                       |
|                   | Bile Duct                                | Hyperplasia                     | Mild                  |
| * Lung            | Alveolus                                 | Infiltration Cellular           | Histiocyte, Moderate  |
|                   | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                                 |                       |
| * Ovary           |  | Atrophy                         | Minimal               |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                     | Marked                |
| * Spleen          | Lymph Follic                             | Hyperplasia                     | Minimal               |
|                   |  | Pigment                         | Minimal               |
| * Thymus          |  | Atrophy                         | Moderate              |
| * Uterus          | Endometrium                              | Adenocarcinoma                  |                       |
|                   | Endometrium                              | Hyperplasia                     | Cystic, Mild          |
|                   | Endometrium                              | Metaplasia                      | Squamous, Minimal     |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 395

TRT#: 4

SEX: Female

DAY ON TEST: 638

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000410

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

OBSERVATIONS

- |                                |                    |                         |
|--------------------------------|--------------------|-------------------------|
| * Heart                        | Cardiomyopathy     | Minimal                 |
| * Liver                        | Basophilic Focus   |                         |
|                                | Clear Cell Focus   |                         |
|                                | Eosinophilic Focus |                         |
|                                | Inflammation       | Focal, Minimal          |
| * Lung                         | Inflammation       | Chronic Active, Minimal |
| * Mammary Gland                | Fibroadenoma       |                         |
| [ Fibroadenoma TGLs = 1 - 14 ] |                    |                         |
| * Ovary                        | Cyst               |                         |
| * Thymus                       | Atrophy            | Moderate                |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 396

TRT#: 4

SEX: Female

DAY ON TEST: 687

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000411

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

**AUTO PRECLUDES DIAG.**

* Lymph Node, Mandibular	* Lymph Node, Mesenteric
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**OBSERVATIONS**

Blood Vessel	Aorta	Mineral	Mild
* Bone Marrow		Hyperplasia	Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney	Papilla, Urothelium	Hyperplasia	Minimal
	Renal Tubule	Mineral	Minimal
	[ Mineral TGLs = 2 - 6 ]		
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal
	Bile Duct	Hyperplasia	Mild
	Hepatocyte	Hypertrophy	Moderate
		Pigment	Minimal
* Lung		Inflammation	Chronic Active, Minimal
* Ovary		Atrophy	Marked
		Granulosa Cell Tumor Malignant	
	[ Granulosa Cell Tumor Malignant TGLs = 1 - 14 ]		
* Spleen		Extramedullary Hematopoiesis	Mild
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
* Stomach, Glandular	Mucosa	Mineral	Mild
* Thymus		Atrophy	Marked

PRIMARY CAUSE OF DEATH - Ovary Granulosa Cell Tumor Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 397

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000412

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Nose                    |
| * Pancreas                  | * Salivary Glands        | * Skin                     | * Stomach, Glandular      |
| * Thymus                    | * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                        |  |  |                          |
|------------------------|--|--|--------------------------|
| * Adrenal Medulla      |  | Hyperplasia<br>Pheochromocytoma Benign | Mild                     |
| * Bone Marrow          |  | Hyperplasia                            | Moderate                 |
| * Kidney               |  | Calculus Micro Observation Only        | Mild                     |
|                        | Papilla, Urothelium                                | Hyperplasia                            | Minimal                  |
|                        |  | Nephropathy                            | Chronicprogr, Minimal    |
| * Liver                |  | Basophilic Focus                       |                          |
|                        |  | Extramedullary Hematopoiesis           | Minimal                  |
| * Mammary Gland        |  | Adenocarcinoma                         | Multiple                 |
|                        | [ Adenocarcinoma TGLs = 1, 2, 3, 5 - 14+15+16+17 ] |  |                          |
| * Ovary                |  | Atrophy                                | Minimal                  |
| * Pituitary Gland      | Pars Distalis                                      | Adenoma                                |                          |
|                        | [ Adenoma TGLs = 4 - 9 ]                           |  |                          |
| * Spleen               |  | Extramedullary Hematopoiesis           | Marked                   |
|                        | [ Extramedullary Hematopoiesis TGLs = 7 - 6 ]      |  |                          |
| * Stomach, Forestomach | Epithelium   | Hyperplasia                            | Moderate                 |
|                        | Submucosa  | Inflammation                           | Chronic Active, Moderate |
|                        |  | Ulcer                                  | Minimal                  |
|                        | [ Hyperplasia TGLs = 8 - 18 ]                      |  |                          |
| * Uterus               | Endometrium  | Adenoma                                |                          |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

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**ANIMAL ID:** 397

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 0/300 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000412

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Adenoma TGLs = 6 - 12 ]

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 398

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000413

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |                   |  |                                 |                       |
|-------------------|--|---------------------------------|-----------------------|
| * Kidney          |  | Calculus Micro Observation Only | Minimal               |
|                   |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver           |  | Clear Cell Focus                |                       |
|                   | Bile Duct                                | Hyperplasia                     | Minimal               |
| * Lung            | Alveolus                                 | Infiltration Cellular           | Histiocyte, Marked    |
|                   | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                                 |                       |
| * Ovary           |  | Atrophy                         | Mild                  |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                     | Minimal               |
| * Spleen          |  | Extramedullary Hematopoiesis    | Minimal               |
|                   |  | Pigment                         | Mild                  |
| * Thymus          |  | Atrophy                         | Mild                  |
| * Uterus          | Endometrium                              | Hyperplasia                     | Cystic, Minimal       |
|                   | Endometrium                              | Metaplasia                      | Squamous, Minimal     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 399

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000414

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Nose
- \* Salivary Glands
- \* Skin
- \* Trachea
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Bile Duct
- Alveolus
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- Pars Distalis
- Lymph Follic
- C Cell
- Endometrium
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Cyst
- Hyperplasia
- Atrophy
- Atrophy
- Adenoma
- Hyperplasia
- Polyp Stromal
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Marked
- Moderate
- Minimal
- Moderate
- Cystic, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 400

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000415

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Glandular
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Thyroid Gland
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Uterus
- Adenoma
- Calculus Micro Observation Only
- Hyperplasia
- Nephropathy
- Hepatocellular Carcinoma
- Hyperplasia
- Infiltration Cellular
- Hyperplasia
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Hyperplasia
- Atrophy
- Dilation
- Minimal
- Minimal
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Minimal
- Mild
- Minimal
- Minimal
- Minimal
- Minimal
- Moderate
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 401

TRT#: 4

SEX: Female

DAY ON TEST: 589

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000416

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Esophagus
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Thyroid Gland
- \* Trachea

OBSERVATIONS

- \* Bone Marrow Hyperplasia Marked
- \* Clitoral Gland Hyperplasia Squamous, Mild
- \* Eye Choroid Lymphoma Malignant
- \* Intestine Large, Colon Lymphoma Malignant
- \* Kidney Lymphoma Malignant
- \* Liver Nephropathy Chronicprogr, Minimal
- \* Lung Lymphoma Malignant
- Lymph Node Lumbar Lymphoma Malignant
- Pancreatic Lymphoma Malignant

Note: Tissue is actually retroperitoneal fat, but since there is no better organ in TDMSE under which to make the diagnosis, I left it as lymph node.

[ Lymphoma Malignant TGLs = 4 - 17 ]

[ Lymphoma Malignant TGLs = 3 - 16 ]

- \* Lymph Node, Mandibular Lymphoma Malignant

[ Lymphoma Malignant TGLs = 1 - 14 ]

- \* Lymph Node, Mesenteric Lymphoma Malignant

[ Lymphoma Malignant TGLs = 7 - 19 ]

- \* Mammary Gland Lymphoma Malignant

- \* Ovary Lymphoma Malignant

- Oviduct Lymphoma Malignant

- \* Pituitary Gland Pars Distalis Hyperplasia Mild

- \* Spleen Lymphoma Malignant

[ Lymphoma Malignant TGLs = 2 - 15 ]

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 401

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 589

**DOSE:** 0/300 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000416

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Stomach, Forestomach

Lymphoma Malignant

\* Stomach, Glandular

Lymphoma Malignant

\* Thymus

Lymphoma Malignant

[ Lymphoma Malignant TGLs = 6 - 18 ]

\* Urinary Bladder

Lymphoma Malignant

\* Uterus

Lymphoma Malignant

[ Lymphoma Malignant TGLs = 5 - 12 ]

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PRIMARY CAUSE OF DEATH

- Thymus Lymphoma Malignant

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 402

TRT#: 4

SEX: Female

DAY ON TEST: 533

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000417

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Trachea                 | * Urinary Bladder           | * Uterus                 |

OBSERVATIONS

- |                 |                                |                              |                       |
|-----------------|--------------------------------|------------------------------|-----------------------|
| * Kidney        | Papilla, Urothelium            | Hyperplasia                  | Minimal               |
|                 |                                | Nephropathy                  | Chronicprogr, Minimal |
| * Lung          | Alveolus                       | Infiltration Cellular        | Histiocyte, Minimal   |
| * Mammary Gland |                                | Fibroadenoma                 |                       |
|                 |                                | Hyperplasia                  | Mild                  |
|                 | [ Fibroadenoma TGLs = 1 - 14 ] |                              |                       |
| * Ovary         |                                | Cyst                         |                       |
| * Spleen        |                                | Extramedullary Hematopoiesis | Mild                  |
| * Thymus        |                                | Atrophy                      | Mild                  |
| * Thyroid Gland | Follicular Cel                 | Hypertrophy                  | Mild                  |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 403

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000418

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Liver
- \* Lung
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Alveolus
- Pars Distalis
- Endometrium
- Endometrium
- Adenoma
- Nephropathy
- Basophilic Focus
- Clear Cell Focus
- Inflammation
- Pigment
- Infiltration Cellular
- Hyperplasia
- Atrophy
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Metaplasia
- Chronicprogr, Minimal
- Focal, Minimal
- Mild
- Histiocyte, Moderate
- Minimal
- Mild
- Minimal
- Mild
- Minimal
- Moderate
- Cystic, Minimal
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 404

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000419

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        |
| * Salivary Glands          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Trachea                 | * Urinary Bladder           | * Uterus                 |

OBSERVATIONS

- |                 |                           |  |                                  |
|-----------------|---------------------------|--|----------------------------------|
| * Kidney        | Renal Tubule              | Mineral<br>Nephropathy                     | Minimal<br>Chronicprogr, Minimal |
| * Liver         | Hepatocyte<br>Hepatocyte  | Basophilic Focus<br>Cytoplasmic Alteration | Minimal<br>Minimal               |
| * Lung          | Alveolus                  | Hypertrophy<br>Infiltration Cellular       | Histiocyte, Mild                 |
| * Mammary Gland |                           | Adenoma<br>Hyperplasia                     | Minimal                          |
|                 | [ Adenoma TGLs = 1 - 14 ] |  |                                  |
| * Ovary         |                           | Cyst                                       |                                  |
| * Thymus        |                           | Atrophy                                    | Moderate                         |
| * Thyroid Gland | Follicular Cel            | Hypertrophy                                | Moderate                         |

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 407

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000422

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Clitoral Gland           | * Esophagus               | * Harderian Gland           | * Heart                  |
| * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Nose                    | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

OBSERVATIONS

- |                          |  |                                 |                       |
|--------------------------|--|---------------------------------|-----------------------|
| * Adrenal Cortex         |  | Hypertrophy                     | Minimal               |
| * Adrenal Medulla        |  | Hyperplasia                     | Marked                |
| * Eye                    | Retina                                   | Degeneration                    | Moderate              |
| * Intestine Large, Colon |  | Parasite Metazoan               |                       |
| * Kidney                 |  | Calculus Micro Observation Only | Minimal               |
|                          |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver                  |  | Clear Cell Focus                |                       |
|                          | Bile Duct                                | Hyperplasia                     | Minimal               |
| * Lung                   | Alveolus                                 | Infiltration Cellular           | Histiocyte, Mild      |
|                          | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                                 |                       |
| * Ovary                  |  | Atrophy                         | Mild                  |
| * Pancreas               | Acinus                                   | Atrophy                         | Minimal               |
| * Pituitary Gland        | Pars Distalis                            | Hyperplasia                     | Mild                  |
| * Spleen                 |  | Extramedullary Hematopoiesis    | Minimal               |
|                          |  | Pigment                         | Minimal               |
| * Thymus                 |  | Atrophy                         | Moderate              |
| * Thyroid Gland          | C Cell                                   | Hyperplasia                     | Moderate              |
| * Uterus                 | Endometrium                              | Hyperplasia                     | Cystic, Mild          |
|                          | Endometrium                              | Metaplasia                      | Squamous, Mild        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 408

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000423

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Trachea                 | * Urinary Bladder           |                          |                            |

OBSERVATIONS

- |                   |                               |              |                       |
|-------------------|-------------------------------|--------------|-----------------------|
| * Eye             | Retina                        | Degeneration | Mild                  |
| * Kidney          |                               | Nephropathy  | Chronicprogr, Minimal |
| * Liver           | Bile Duct                     | Hyperplasia  | Minimal               |
| * Ovary           |                               | Atrophy      | Mild                  |
| * Pituitary Gland |                               | Angiectasis  | Mild                  |
|                   | [ Angiectasis TGLs = 1 - 9 ]  |              |                       |
| * Spleen          |                               | Pigment      | Minimal               |
| * Thymus          |                               | Atrophy      | Moderate              |
| * Thyroid Gland   | C Cell                        | Adenoma      |                       |
| * Uterus          | Cervix                        | Hypertrophy  | Moderate              |
|                   | [ Hypertrophy TGLs = 2 - 12 ] |              |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 410

TRT#: 4

SEX: Female

DAY ON TEST: 744

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000425

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mesenteric
- \* Nose
- \* Salivary Glands
- \* Skin
- \* Trachea
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Stomach, Forestomach
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Kidney
  - Papilla, Urothelium
  - Renal Tubule
- \* Liver
  - Hyperplasia
  - Mineral
  - Nephropathy
  - Cholangiocarcinoma
  - Inflammation
- \* Mammary Gland
  - [ Cholangiocarcinoma TGLs = 2 - 15 ]
  - Note: Second fibroadenoma in routine section.
  - [ Fibroadenoma TGLs = 1 - 14 ]
- \* Ovary
  - Fibroadenoma
- \* Pituitary Gland
  - [ Adenoma TGLs = 3 - 16 ]
  - Pars Distalis
- \* Spleen
  - Atrophy
  - Cyst
  - Adenoma
- \* Thymus
  - Pigment
  - Atrophy
- \* Thyroid Gland
  - C Cell
  - Hyperplasia
- \* Uterus
  - Endometrium
  - Endometrium
  - Hyperplasia
  - Metaplasia

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 411

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000426

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Islets, Pancreatic  
[ Adenoma TGLs = 4 - 14 ]
- \* Kidney
- \* Liver  
Bile Duct  
Bile Duct  
[ Cyst TGLs = 1 - 14 ]
- \* Lung  
Alveolus  
[ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland  
[ Cyst TGLs = 3 - 9 ]
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- Adenoma
- Calculus Micro Observation Only
- Nephropathy
- Cyst
- Hyperplasia
- Inflammation
- Infiltration Cellular
- Hyperplasia
- Cyst
- Cyst
- Extramedullary Hematopoiesis
- Pigment
- Hyperplasia
- Atrophy
- Minimal
- Chronicprogr, Minimal
- Minimal
- Focal, Minimal
- Histiocyte, Moderate
- Moderate
- Minimal
- Mild
- Minimal
- Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01  
Test Type: CHRONIC  
Route: DOSED FEED  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid  
CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
Time Report Requested: 12:58:26  
First Dose M/F: 10/27/08 / 10/28/08  
Lab: BAT

ANIMAL ID: 412

TRT#: 4

SEX: Female

DAY ON TEST: 695

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000427

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Bone Marrow		Hyperplasia	Moderate
* Kidney	Papilla, Urothelium	Hyperplasia	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver	Centrilobular	Necrosis	Marked
		Pigment	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Marked
	[ Infiltration Cellular TGLs = 2 - 4+5 ]		
* Mammary Gland		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 1 - 14 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3 - 9 ]		
* Spleen	Lymph Follic	Atrophy	Mild
		Extramedullary Hematopoiesis	Moderate
* Thymus		Atrophy	Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

CONTRIBUTORY CAUSE OF DEATH - Liver Centrilobular Necrosis

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 413

TRT#: 4

SEX: Female

DAY ON TEST: 737

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000428

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
		Pheochromocytoma Benign	
* Bone Marrow		Hyperplasia	Moderate
* Kidney		Calculus Micro Observation Only	Minimal
	Renal Tubule	Mineral	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver		Angiectasis	Minimal
		Basophilic Focus	
	Hepatocyte	Cytoplasmic Alteration	Minimal
	Bile Duct	Hyperplasia	Mild
	Hepatocyte	Hypertrophy	Moderate
* Mammary Gland		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 1 - 14 ]		
* Ovary		Atrophy	Mild
		Inflammation	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
	[ Hyperplasia TGLs = 2 - 9 ]		
* Spleen		Extramedullary Hematopoiesis	Moderate
* Thymus		Atrophy	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

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**ANIMAL ID:** 413

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 737

**DOSE:** 0/300 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000428

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Mammary Gland Adenocarcinoma

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 414

TRT#: 4

SEX: Female

DAY ON TEST: 659

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000429

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Papilla, Urothelium
- Renal Tubule
- Bile Duct
- Alveolus
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- Pars Distalis
- Lymph Follic
- Endometrium
- Endometrium
- Hyperplasia
- Cardiomyopathy
- Mineral
- Hyperplasia
- Mineral
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Atrophy
- Cyst
- Hyperplasia
- Atrophy
- Pigment
- Atrophy
- Hyperplasia
- Metaplasia
- Minimal
- Moderate
- Mild
- Minimal
- Moderate
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Minimal
- Mild
- Minimal
- Mild
- Moderate
- Moderate
- Cystic, Minimal
- Squamous, Mild

PRIMARY CAUSE OF DEATH - Heart Cardiomyopathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 415

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000430

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Trachea                  | * Urinary Bladder         | * Uterus                    |                          |

OBSERVATIONS

- |                 |  |   |  |
|-----------------|--|---|--|
| * Kidney        | Epithelium, Renal Tubule<br>Renal Tubule             | Cytoplasmic Alteration<br>Dilation<br>Nephropathy | Mild<br>Moderate<br>Chronicprogr, Mild |
| * Liver         | Bile Duct  | Hyperplasia                                       | Minimal                                |
| * Lung          | Alveolus<br>[ Infiltration Cellular TGLs = 1 - 4+5 ] | Infiltration Cellular                             | Histiocyte, Mild                       |
| * Mammary Gland |  | Hyperplasia                                       | Moderate                               |
| * Ovary         |  | Cyst  |  |
| * Spleen        |  | Pigment   | Mild                                   |
| * Thymus        |  | Atrophy   | Moderate                               |
| * Thyroid Gland | Follicular Cel                                       | Hypertrophy                                       | Mild                                   |

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 416

TRT#: 4

SEX: Female

DAY ON TEST: 739

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000431

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Urinary Bladder
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Uterus

MISSING

- \* Parathyroid Gland
- \* Thymus

OBSERVATIONS

- Blood Vessel  
Note: Pancreatic arteries involved. Inflammation Minimal
- \* Eye Retina Degeneration Moderate
- \* Intestine Large, Colon Parasite Metazoan
- \* Kidney Nephropathy Chronicprogr, Marked  
[ Nephropathy TGLs = 1 - 6 ]
- \* Liver Hepatocyte Cytoplasmic Alteration Minimal  
Hepatocyte Hypertrophy Minimal
- \* Lung Alveolus Infiltration Cellular Histiocyte, Mild  
[ Infiltration Cellular TGLs = 2 - 4 ]
- \* Ovary Cyst
- \* Spleen Pigment Minimal
- \* Thyroid Gland Follicular Cel Hypertrophy Mild

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 417

TRT#: 4

SEX: Female

DAY ON TEST: 746

DOSE: 0/300 ppm

DISP: Natural Death

HISTO: 1000432

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Heart
- \* Lung
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Salivary Glands
- \* Thyroid Gland
- Blood Vessel
- \* Eye
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Trachea
- \* Bone
- \* Harderian Gland
- \* Kidney
- \* Pancreas
- \* Stomach, Forestomach

MISSING

- \* Clitoral Gland
- \* Intestine Small, Ileum
- \* Urinary Bladder
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Uterus
- \* Intestine Large, Colon
- \* Lymph Node, Mesenteric
- \* Intestine Large, Rectum
- \* Ovary

OBSERVATIONS

- \* Bone Marrow
- \* Liver
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1,2 - 14+15 ]
- \* Pituitary Gland
  - [ Hyperplasia TGLs = 3 - 16 ]
  - Pars Distalis
- \* Spleen
- \* Thymus
- Hyperplasia
- Inflammation
- Fibroadenoma
- Hyperplasia
- Extramedullary Hematopoiesis
- Atrophy
- Moderate
- Focal, Minimal
- Multiple
- Marked
- Moderate
- Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 418

TRT#: 4

SEX: Female

DAY ON TEST: 695

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000433

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- [ Infiltration Cellular TGLs = 5 - 4+5 ]
- Lymph Node
- [ Adenocarcinoma TGLs = 3 - 16 ]
- \* Mammary Gland
- [ Adenocarcinoma TGLs = 1 - 14 ]
- [ Fibroadenoma TGLs = 2,4 - 15+17 ]
- \* Ovary
- \* Pituitary Gland
- [ Adenoma TGLs = 6 - 9 ]
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Papilla, Urothelium
- Bile Duct
- Alveolus
- Axillary
- Pars Distalis
- C Cell
- Endometrium
- Endometrium
- Hyperplasia
- Hyperplasia
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Adenocarcinoma
- Adenocarcinoma
- Fibroadenoma
- Atrophy
- Adenoma
- Extramedullary Hematopoiesis
- Atrophy
- Adenoma
- Hyperplasia
- Metaplasia
- Mild
- Minimal
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Minimal
- Metastatic (Mammary Gland)
- Multiple
- Minimal
- Mild
- Moderate
- Cystic, Mild
- Squamous, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 419

TRT#: 4

SEX: Female

DAY ON TEST: 718

DOSE: 0/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000434

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Salivary Glands
- \* Trachea
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Mammary Gland
- [ Fibroadenoma TGLs = 1 - 14 ]
- \* Ovary
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Papilla, Urothelium
- Follicular Cel
- Endometrium
- Hyperplasia
- Calculus Micro Observation Only
- Hyperplasia
- Extramedullary Hematopoiesis
- Fibroadenoma
- Atrophy
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hypertrophy
- Hyperplasia
- Moderate
- Minimal
- Minimal
- Minimal
- Moderate
- Moderate
- Minimal
- Moderate
- Minimal
- Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 420

TRT#: 4

SEX: Female

DAY ON TEST: 745

DOSE: 0/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000435

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Stomach, Forestomach
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Heart
  - Note: Heart has ectopic parathyroid in one atrial appendage.
- \* Kidney
  - Papilla, Urothelium
  - Renal Tubule
- \* Lung
  - [ Infiltration Cellular TGLs = 1 - 4 ]
  - Alveolus
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- Hyperplasia
- Calculus Micro Observation Only
- Hyperplasia
- Mineral
- Nephropathy
- Infiltration Cellular
- Hyperplasia
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Adenoma
- Mild
- Minimal
- Minimal
- Minimal
- Chronicprogr, Minimal
- Histiocyte, Minimal
- Mild
- Minimal
- Mild
- Mild
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 421

TRT#: 6

SEX: Female

DAY ON TEST: 322

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000436

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Nose                    |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

OBSERVATIONS

- |                 |                                |                              |                   |
|-----------------|--------------------------------|------------------------------|-------------------|
| * Bone Marrow   |                                | Hyperplasia                  | Mild              |
| * Heart         |                                | Cardiomyopathy               | Minimal           |
| * Kidney        | Renal Tubule                   | Mineral                      | Minimal           |
| * Liver         | Hepatocyte                     | Cytoplasmic Alteration       | Minimal           |
|                 | Hepatocyte                     | Hypertrophy                  | Minimal           |
|                 |                                | Necrosis                     | Minimal           |
| * Mammary Gland |                                | Fibroadenoma                 |                   |
|                 | [ Fibroadenoma TGLs = 1 - 14 ] |                              |                   |
| * Ovary         |                                | Atrophy                      | Minimal           |
| * Spleen        |                                | Extramedullary Hematopoiesis | Minimal           |
|                 |                                | Pigment                      | Minimal           |
| * Thymus        |                                | Atrophy                      | Mild              |
| * Uterus        | Endometrium                    | Hyperplasia                  | Cystic, Mild      |
|                 | Endometrium                    | Metaplasia                   | Squamous, Minimal |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 422

TRT#: 6

SEX: Female

DAY ON TEST: 718

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000437

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Nose
- \* Salivary Glands
- \* Skin
- \* Thyroid Gland
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Bile Duct
- Alveolus
- Pars Distalis
- Endometrium
- Calculus Micro Observation Only
- Basophilic Focus
- Eosinophilic Focus
- Hyperplasia
- Infiltration Cellular
- Atrophy
- Adenoma
- Pigment
- Atrophy
- Hyperplasia
- Minimal
- Minimal
- Histiocyte, Moderate
- Moderate
- Minimal
- Moderate
- Cystic, Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 423

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000438

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Moderate
		Pheochromocytoma Benign	
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Moderate
* Liver		Basophilic Focus	
	Hepatocyte	Cytoplasmic Alteration	Minimal
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Ovary		Atrophy	Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 2 - 9 ]		
* Spleen		Extramedullary Hematopoiesis	Mild
* Thymus		Atrophy	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 424

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000439

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Bile Duct
- Alveolus
- Pars Distalis
- C Cell
- Endometrium
- Endometrium
- Nephropathy
- Basophilic Focus
- Hyperplasia
- Infiltration Cellular
- Fibroadenoma
- Atrophy
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Adenoma
- Hyperplasia
- Metaplasia
- Chronicprogr, Mild
- Minimal
- Histiocyte, Minimal
- Multiple
- Minimal
- Minimal
- Minimal
- Minimal
- Moderate
- Multiple
- Cystic, Minimal
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 425

TRT#: 6

SEX: Female

DAY ON TEST: 533

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000440

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Harderian Gland
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lung
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- \* Bone Marrow
- \* Eye
- \* Heart
- \* Kidney
- \* Liver
- \* Mammary Gland
- [ Adenocarcinoma TGLs = 1 - 14 ]
- [ Galactocele TGLs = 3 - 16 ]
- \* Ovary
- \* Pancreas
- \* Pituitary Gland
- \* Spleen
- [ Extramedullary Hematopoiesis TGLs = 2 - 15 ]
- \* Thymus
- \* Thyroid Gland
- \* Uterus

- Hyperplasia
- Inflammation
- Cardiomyopathy
- Nephropathy
- Extramedullary Hematopoiesis
- Adenocarcinoma
- Galactocele
- Atrophy
- Cyst
- Inflammation
- Hyperplasia
- Extramedullary Hematopoiesis
- Hyperplasia
- Atrophy
- Hypertrophy
- Hyperplasia

- Marked
- Minimal
- Minimal
- Chronicprogr, Minimal
- Moderate
- Mild
- Minimal
- Chronic Active, Minimal
- Moderate
- Marked
- Mild
- Moderate
- Marked
- Cystic, Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 426

TRT#: 6

SEX: Female

DAY ON TEST: 634

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000441

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lung
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow: Hyperplasia, Moderate
- \* Kidney: Calculus Micro Observation Only, Minimal
- \* Liver: Clear Cell Focus
- Bile Duct: Extramedullary Hematopoiesis, Minimal
- Hepatocyte: Hyperplasia, Mild
- Hepatocyte: Hypertrophy, Moderate
- [ Hyperplasia TGLs = 2 - 15 ]
- \* Mammary Gland: Adenocarcinoma
- [ Adenocarcinoma TGLs = 1 - 14 ]
- \* Ovary: Atrophy, Minimal
- Cyst
- \* Pituitary Gland: Pars Distalis, Hyperplasia, Minimal
- [ Hyperplasia TGLs = 3 - 16 ]
- \* Spleen: Extramedullary Hematopoiesis, Moderate
- \* Thymus: Atrophy, Moderate
- \* Uterus: Endometrium, Hyperplasia, Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 427

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000442

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Islets, Pancreatic
- \* Kidney
- \* Liver
- Note: per NNLA
- [ Cyst TGLs = 3 - 15 ]
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- [ Hyperplasia TGLs = 2 - 14 ]
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Bile Duct
- Alveolus
- Pars Distalis
- C Cell
- Endometrium
- Adenoma
- Calculus Micro Observation Only
- Nephropathy
- Cyst
- Infiltration Cellular
- Inflammation
- Fibroadenoma
- Hyperplasia
- Atrophy
- Hyperplasia
- Pigment
- Atrophy
- Adenoma
- Hyperplasia
- Minimal
- Chronicprogr, Minimal
- Histiocyte, Moderate
- Chronic Active, Minimal
- Mild
- Minimal
- Mild
- Minimal
- Moderate
- Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 430

TRT#: 6

SEX: Female

DAY ON TEST: 638

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000445

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Salivary Glands
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Stomach, Glandular
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Thyroid Gland

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Nose
- \* Ovary
- \* Pituitary Gland
- \* Skin
- \* Spleen
- \* Thymus
- \* Uterus
- Papilla, Urothelium
- Bile Duct
- Alveolus
- Pars Distalis
- Subcut Tiss
- Endometrium
- Degeneration
- Hyperplasia
- Calculus Micro Observation Only
- Hyperplasia
- Nephropathy
- Cyst
- Extramedullary Hematopoiesis
- Pigment
- Infiltration Cellular
- Fibroadenoma
- Inflammation
- Atrophy
- Cyst
- Hyperplasia
- Fibroma
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Cystic, Mild
- Moderate
- Minimal
- Minimal
- Chronicprogr, Minimal
- Minimal
- Minimal
- Histiocyte, Minimal
- Minimal
- Minimal
- Moderate
- Moderate
- Cystic, Mild

Note: per NNLA

[ Infiltration Cellular TGLs = 3 - 4+5 ]

[ Fibroadenoma TGLs = 2 - 15 ]

[ Fibroma TGLs = 1 - 14 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 430

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 638

**DOSE:** 150/300 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000445

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Endometrium

Metaplasia

Squamous, Minimal

Polyp Stromal

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 431

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000446

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Trachea
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Adrenal Medulla  
Blood Vessel  
Note: Vascular inflammation involves cardiac, gastric, mesenteric, and renal arterioles and a pancreatic artery.
- \* Bone Marrow
- \* Heart
- \* Kidney  
Papilla, Urothelium
- \* Liver  
Hepatocyte
- \* Lung  
Alveolus  
[ Infiltration Cellular TGLs = 1 - 4+5 ]
- \* Ovary
- \* Pituitary Gland  
Pars Distalis  
[ Hyperplasia TGLs = 2 - 9 ]
- \* Spleen  
Lymph Follic
- \* Thymus
- \* Uterus  
Endometrium
- Pheochromocytoma Benign
- Inflammation
- Hyperplasia
- Cardiomyopathy
- Hyperplasia
- Nephropathy
- Cytoplasmic Alteration
- Eosinophilic Focus
- Extramedullary Hematopoiesis
- Infiltration Cellular
- Inflammation
- Atrophy
- Cyst
- Hyperplasia
- Atrophy
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Polyp Stromal
- Moderate
- Moderate
- Minimal
- Minimal
- Chronicprogr, Moderate
- Minimal
- Minimal
- Histiocyte, Mild
- Chronic Active, Minimal
- Marked
- Marked
- Minimal
- Mild
- Moderate
- Cystic, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 432

TRT#: 6

SEX: Female

DAY ON TEST: 295

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000447

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   | * Ovary                    |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |

OBSERVATIONS

- |          |              |                |                       |
|----------|--------------|----------------|-----------------------|
| * Heart  |              | Cardiomyopathy | Minimal               |
|          |              | Mineral        | Minimal               |
|          |              | Necrosis       | Acute, Minimal        |
| * Kidney | Renal Tubule | Mineral        | Minimal               |
|          |              | Nephropathy    | Chronicprogr, Minimal |
| * Spleen | Lymph Follic | Atrophy        | Mild                  |
|          |              | Pigment        | Mild                  |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 433

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000448

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    |
| * Pancreas                  | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Trachea                | * Urinary Bladder          |                           |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                       |                       |
|-------------------|--|-----------------------|-----------------------|
| * Adrenal Cortex  |  | Degeneration          | Cystic, Minimal       |
| * Heart           |  | Cardiomyopathy        | Minimal               |
| * Kidney          |  | Lipoma                |                       |
|                   |  | Nephropathy           | Chronicprogr, Minimal |
| * Liver           |  | Basophilic Focus      |                       |
|                   |  | Clear Cell Focus      |                       |
|                   | Bile Duct                                | Hyperplasia           | Mild                  |
| * Lung            | Alveolus                                 | Infiltration Cellular | Histiocyte, Marked    |
|                   | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                       |                       |
| * Ovary           |  | Atrophy               | Minimal               |
|                   |  | Cyst                  |                       |
| * Pituitary Gland | Pars Distalis                            | Adenoma               |                       |
| * Spleen          |  | Pigment               | Mild                  |
| * Thymus          |  | Atrophy               | Moderate              |
| * Thyroid Gland   | C Cell                                   | Adenoma               |                       |
| * Uterus          | Endometrium                              | Hyperplasia           | Cystic, Minimal       |
|                   | Endometrium                              | Metaplasia            | Squamous, Minimal     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 434

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000449

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Skin
- \* Spleen
- \* Trachea
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Glandular

OBSERVATIONS

- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Parasite Metazoan
- Nephropathy
- Basophilic Focus
- Bile Duct
- Alveolus
- Pars Distalis
- C Cell
- Endometrium
- Endometrium
- Hyperplasia
- Hyperplasia
- Atrophy
- Hyperplasia
- Hyperplasia
- Metaplasia
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Marked
- Moderate
- Moderate
- Moderate
- Moderate
- Cystic, Minimal
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 437

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000452

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Nose                    | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Trachea                   | * Urinary Bladder        |                            |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                                 |                       |
|-------------------|--|---------------------------------|-----------------------|
| * Adrenal Medulla |  | Pheochromocytoma Benign         |                       |
| * Kidney          |  | Calculus Micro Observation Only | Minimal               |
|                   | Papilla, Urothelium                      | Hyperplasia                     | Minimal               |
|                   |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver           |  | Clear Cell Focus                |                       |
|                   | Hepatocyte                               | Cytoplasmic Alteration          | Minimal               |
|                   |  | Eosinophilic Focus              |                       |
|                   | Hepatocyte                               | Hypertrophy                     | Minimal               |
| * Mammary Gland   |  | Fibroadenoma                    | Multiple              |
|                   | [ Fibroadenoma TGLs = 1,2,3 - 14+15+16 ] |                                 |                       |
| * Ovary           |  | Atrophy                         | Mild                  |
| * Pancreas        |  | Basophilic Focus                |                       |
| * Pituitary Gland | Pars Distalis                            | Adenoma                         |                       |
|                   | [ Adenoma TGLs = 4 - 9 ]                 |                                 |                       |
| * Spleen          |  | Extramedullary Hematopoiesis    | Mild                  |
| * Thymus          |  | Atrophy                         | Minimal               |
| * Thyroid Gland   | Follicular Cel                           | Hypertrophy                     | Minimal               |
| * Uterus          | Endometrium                              | Hyperplasia                     | Cystic, Minimal       |
|                   |  | Inflammation                    | Suppurative, Minimal  |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 438

TRT#: 6

SEX: Female

DAY ON TEST: 739

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000453

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

OBSERVATIONS

- |                   |  |                              |                       |
|-------------------|--|------------------------------|-----------------------|
| * Adrenal Cortex  |  | Degeneration                 | Cystic, Moderate      |
|                   |  | Hypertrophy                  | Minimal               |
| * Kidney          |  | Nephropathy                  | Chronicprogr, Minimal |
| * Mammary Gland   |  | Adenocarcinoma               |                       |
|                   |  | Fibroadenoma                 | Multiple              |
|                   | [ Adenocarcinoma TGLs = 4 - 17 ]         |                              |                       |
|                   | [ Fibroadenoma TGLs = 1,2,3 - 14+15+16 ] |                              |                       |
| * Ovary           |  | Atrophy                      | Mild                  |
|                   |  | Cyst                         |                       |
| * Pituitary Gland | Pars Distalis                            | Adenoma                      |                       |
|                   | [ Adenoma TGLs = 5 - 18 ]                |                              |                       |
| * Spleen          |  | Extramedullary Hematopoiesis | Minimal               |
|                   |  | Pigment                      | Minimal               |
| * Thymus          |  | Atrophy                      | Moderate              |
| * Thyroid Gland   | C Cell                                   | Adenoma                      |                       |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 439

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000454

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone
- \* Bone Marrow
- \* Brain
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Nose
- \* Pancreas
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric

OBSERVATIONS

- |                          |                  |                              |                     |
|--------------------------|------------------|------------------------------|---------------------|
| * Kidney                 | Cortex           | Cyst<br>Nephropathy          | Chronicprogr, Mild  |
| * Liver                  | Bile Duct        | Extramedullary Hematopoiesis | Minimal             |
| * Lung                   | Alveolus         | Hyperplasia                  | Minimal             |
| [ Infiltration Cellular  | TGLs = 1 - 4+5 ] | Infiltration Cellular        | Histiocyte, Minimal |
| * Lymph Node, Mandibular |                  | Infiltration Cellular        | Plasma Cell, Mild   |
| * Ovary                  |                  | Atrophy                      | Minimal             |
| * Pituitary Gland        | Pars Distalis    | Cyst                         | Minimal             |
| * Spleen                 |                  | Hyperplasia                  | Minimal             |
| * Thymus                 |                  | Extramedullary Hematopoiesis | Minimal             |
| * Thyroid Gland          | C Cell           | Pigment                      | Minimal             |
| * Uterus                 | Endometrium      | Atrophy                      | Moderate            |
|                          | Endometrium      | Hyperplasia                  | Marked              |
|                          |                  | Hyperplasia                  | Cystic, Mild        |
|                          |                  | Metaplasia                   | Squamous, Minimal   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 440

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000455

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lung
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Forestomach
- \* Trachea
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland

OBSERVATIONS

- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Renal Tubule
- Hepatocyte
- Bile Duct
- Hepatocyte
- Pars Distalis
- Endometrium
- Parasite Metazoan
- Hyperplasia
- Nephropathy
- Cytoplasmic Alteration
- Hyperplasia
- Hypertrophy
- Pigment
- Hyperplasia
- Atrophy
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Inflammation
- Atypical, Mild
- Chronicprogr, Mild
- Minimal
- Mild
- Minimal
- Minimal
- Minimal
- Mild
- Minimal
- Mild
- Moderate
- Cystic, Mild
- Suppurative, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 441

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000456

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Nose
- \* Salivary Glands
- \* Thymus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Pancreas
- \* Skin
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
    - [ Adenoma TGLs = 1 - 14 ]
    - [ Atrophy TGLs = 2 - 9 ]
  - \* Kidney
    - Renal Tubule
  - \* Liver
    - Bile Duct
    - Hepatocyte
    - Hepatocyte
  - \* Lung
    - Alveolus
    - [ Infiltration Cellular TGLs = 3 - 4+5 ]
  - \* Lymph Node, Mandibular
  - \* Lymph Node, Mesenteric
  - \* Mammary Gland
  - \* Ovary
  - \* Spleen
    - Lymph Follic
  - \* Uterus
    - Endometrium
- Adenoma  
Atrophy
- Marked
- Calculus Micro Observation Only  
Mineral  
Nephropathy  
Cyst  
Cytoplasmic Alteration  
Hypertrophy  
Infiltration Cellular
- Minimal  
Minimal  
Chronicprogr, Moderate  
Minimal  
Mild  
Histiocyte, Moderate
- Atrophy  
Atrophy  
Hyperplasia  
Atrophy  
Cyst  
Atrophy  
Extramedullary Hematopoiesis  
Hyperplasia
- Lymphoid, Mild  
Lymphoid, Minimal  
Mild  
Minimal  
Mild  
Mild  
Cystic, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 443

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000458

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Kidney
- \* Nose
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lung
- \* Ovary
- \* Salivary Glands
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Cortex
- \* Liver
- \* Mammary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- Bile Duct
- C Cell
- Degeneration
- Eosinophilic Focus
- Hyperplasia
- Fibroadenoma
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Adenoma
- Cystic, Mild
- Minimal
- Marked
- Mild
- Minimal
- Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 445

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000460

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Kidney
- \* Pancreas
- \* Spleen
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Intestine Large, Colon
- \* Liver
- \* Lung
  - [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland
  - [ Adenocarcinoma TGLs = 1 - 14 ]
- \* Ovary
- \* Pituitary Gland
- \* Thymus
- \* Uterus
- Alveolus
- Pars Distalis
- Endometrium
- Endometrium
- Hyperplasia
- Hyperplasia
- Parasite Metazoan
- Degeneration
- Eosinophilic Focus
- Pigment
- Infiltration Cellular
- Adenocarcinoma
- Atrophy
- Hyperplasia
- Atrophy
- Hyperplasia
- Metaplasia
- Minimal
- Moderate
- Cystic, Minimal
- Minimal
- Histiocyte, Mild
- Mild
- Moderate
- Moderate
- Cystic, Mild
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 447

TRT#: 6

SEX: Female

DAY ON TEST: 533

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000462

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Kidney                    | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |                            |

OBSERVATIONS

- |                   |                                |                              |                   |
|-------------------|--------------------------------|------------------------------|-------------------|
| * Bone Marrow     |                                | Hyperplasia                  | Mild              |
| * Liver           |                                | Extramedullary Hematopoiesis | Minimal           |
| * Mammary Gland   |                                | Fibroadenoma                 |                   |
|                   | [ Fibroadenoma TGLs = 1 - 14 ] |                              |                   |
| * Ovary           |                                | Atrophy                      | Minimal           |
| * Pituitary Gland | Pars Distalis                  | Hyperplasia                  | Mild              |
| * Spleen          |                                | Extramedullary Hematopoiesis | Moderate          |
| * Thymus          |                                | Atrophy                      | Mild              |
| * Uterus          | Endometrium                    | Hyperplasia                  | Cystic, Mild      |
|                   | Endometrium                    | Metaplasia                   | Squamous, Minimal |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 448

TRT#: 6

SEX: Female

DAY ON TEST: 718

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000463

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Brain                     |
| * Clitoral Gland         | * Esophagus                | * Eye                     | * Harderian Gland           |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Nose                    | * Pancreas                  |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                    | * Stomach, Glandular        |
| * Trachea                | * Urinary Bladder          |                           |                             |

OBSERVATIONS

- |                        |                                |                                 |                          |
|------------------------|--------------------------------|---------------------------------|--------------------------|
| * Adrenal Cortex       | Zona Fascult                   | Hyperplasia                     | Marked                   |
| * Bone Marrow          |                                | Hyperplasia                     | Moderate                 |
| * Heart                |                                | Cardiomyopathy                  | Minimal                  |
| * Kidney               |                                | Calculus Micro Observation Only | Minimal                  |
|                        | Renal Tubule                   | Mineral                         | Minimal                  |
|                        |                                | Nephropathy                     | Chronicprogr, Minimal    |
| * Liver                |                                | Basophilic Focus                |                          |
|                        | Hepatocyte                     | Cytoplasmic Alteration          | Minimal                  |
|                        |                                | Extramedullary Hematopoiesis    | Minimal                  |
|                        | Hepatocyte                     | Hypertrophy                     | Marked                   |
|                        | Hepatocyte                     | Increased Mitoses               | Minimal                  |
|                        | Hepatocyte                     | Single Cell Death               | Minimal                  |
| * Mammary Gland        |                                | Fibroadenoma                    |                          |
|                        | [ Fibroadenoma TGLs = 1 - 14 ] |                                 |                          |
| * Ovary                |                                | Atrophy                         | Mild                     |
| * Pituitary Gland      | Pars Distalis                  | Hyperplasia                     | Minimal                  |
| * Spleen               |                                | Extramedullary Hematopoiesis    | Moderate                 |
| * Stomach, Forestomach | Epithelium                     | Hyperplasia                     | Moderate                 |
|                        | Submucosa                      | Inflammation                    | Chronic Active, Moderate |
|                        |                                | Ulcer                           | Minimal                  |
| * Thymus               |                                | Atrophy                         | Marked                   |
| * Thyroid Gland        | Follicular Cel                 | Hypertrophy                     | Minimal                  |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 448

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 718

**DOSE:** 150/300 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000463

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

Inflammation

Suppurative, Minimal

Cervix

Stromal Hyperplasia

Marked

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 449

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000464

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Brain                     | * Clitoral Gland         |
| * Esophagus                | * Eye                     | * Harderian Gland           | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Salivary Glands           | * Skin                   |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                       |                    |
|-------------------|--|-----------------------|--------------------|
| * Adrenal Cortex  |  | Hypertrophy           | Minimal            |
| * Adrenal Medulla |  | Hyperplasia           | Minimal            |
| * Bone Marrow     |  | Hyperplasia           | Minimal            |
| * Heart           |  | Cardiomyopathy        | Minimal            |
| * Kidney          | Renal Tubule                             | Mineral               | Minimal            |
|                   |  | Nephropathy           | Chronicprogr, Mild |
| * Liver           |  | Eosinophilic Focus    |                    |
|                   | Bile Duct                                | Hyperplasia           | Minimal            |
|                   |  | Pigment               | Minimal            |
| * Lung            | Alveolus                                 | Infiltration Cellular | Histiocyte, Marked |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                       |                    |
| * Mammary Gland   |  | Hyperplasia           | Minimal            |
| * Ovary           |  | Atrophy               | Mild               |
|                   |  | Cyst                  |                    |
|                   | [ Cyst TGLs = 1 - 12 ]                   |                       |                    |
| * Pituitary Gland | Pars Distalis                            | Adenoma               |                    |
|                   | [ Adenoma TGLs = 3 - 14 ]                |                       |                    |
| * Spleen          |  | Pigment               | Mild               |
| * Thymus          |  | Atrophy               | Moderate           |
| * Uterus          | Endometrium                              | Metaplasia            | Squamous, Minimal  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 450

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000465

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Papilla, Urothelium
- Bile Duct
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- [ Adenoma TGLs = 1 - 14 ]
- Pars Distalis
- C Cell
- Endometrium
- Degeneration
- Cardiomyopathy
- Calculus Micro Observation Only
- Hyperplasia
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Hyperplasia
- Atrophy
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Adenoma
- Metaplasia
- Cystic, Moderate
- Minimal
- Minimal
- Minimal
- Chronicprogr, Minimal
- Minimal
- Histiocyte, Moderate
- Minimal
- Moderate
- Minimal
- Mild
- Marked
- Squamous, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 452

TRT#: 6

SEX: Female

DAY ON TEST: 589

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000467

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |

OBSERVATIONS

- |                 |                                |                              |                       |
|-----------------|--------------------------------|------------------------------|-----------------------|
| * Bone Marrow   |                                | Hyperplasia                  | Mild                  |
| * Kidney        |                                | Nephropathy                  | Chronicprogr, Minimal |
| * Liver         | Bile Duct                      | Hyperplasia                  | Minimal               |
| * Mammary Gland |                                | Fibroadenoma                 |                       |
|                 |                                | Hyperplasia                  | Moderate              |
|                 | [ Fibroadenoma TGLs = 1 - 14 ] |                              |                       |
| * Ovary         |                                | Cyst                         |                       |
| * Spleen        |                                | Extramedullary Hematopoiesis | Mild                  |
|                 |                                | Pigment                      | Minimal               |
| * Thymus        |                                | Atrophy                      | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 453

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000468

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mesenteric    | * Nose                   | * Pancreas                 |
| * Parathyroid Gland       | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |

MISSING

- \* Lymph Node, Mandibular

OBSERVATIONS

- |                   |   |                              |                       |
|-------------------|---|------------------------------|-----------------------|
| * Bone Marrow     |   | Hyperplasia                  | Mild                  |
| * Kidney          |   | Nephropathy                  | Chronicprogr, Minimal |
| * Liver           |   | Eosinophilic Focus           |                       |
| * Lung            | Alveolus  | Infiltration Cellular        | Histiocyte, Minimal   |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ]                              |                              |                       |
| * Mammary Gland   |   | Fibroadenoma                 |                       |
|                   | Note: Fibroadenoma has sebaceous differentiation (unusual variation). |                              |                       |
|                   | [ Fibroadenoma TGLs = 1 - 14 ]  |                              |                       |
| * Ovary           |   | Atrophy                      | Mild                  |
| * Pituitary Gland | Pars Distalis   | Hyperplasia                  | Marked                |
|                   | [ Hyperplasia TGLs = 3 - 15 ]   |                              |                       |
| * Spleen          |   | Extramedullary Hematopoiesis | Minimal               |
|                   |   | Pigment                      | Minimal               |
| * Thymus          |   | Atrophy                      | Moderate              |
| * Uterus          | Endometrium   | Hyperplasia                  | Cystic, Minimal       |
|                   | Endometrium   | Metaplasia                   | Squamous, Mild        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 454

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000469

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Bone Marrow		Hyperplasia	Minimal
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Colon		Parasite Metazoan	
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver		Basophilic Focus	
	Bile Duct	Cyst	
	Hepatocyte	Cytoplasmic Alteration	Minimal
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Marked
	Hepatocyte	Increased Mitoses	Moderate
		Pigment	Mild
	Hepatocyte	Single Cell Death	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1 - 4+5 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Extramedullary Hematopoiesis	Mild
	Lymph Follic	Hyperplasia	Mild
		Pigment	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 454

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 150/300 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000469

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Uterus	C Cell	Hyperplasia	Moderate
	Endometrium	Hyperplasia	Cystic, Minimal
	Cervix	Hypertrophy	Marked
	Endometrium	Metaplasia	Squamous, Minimal
		Polyp Stromal	

[ Hypertrophy TGLs = 2 - 14 ]

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 455

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000470

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Bone Marrow
- \* Brain
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thymus
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Clitoral Gland [ Cyst TGLs = 1 - 14 ] Duct Cyst
- \* Intestine Large, Colon Parasite Metazoan
- \* Kidney Calculus Micro Observation Only Minimal
- \* Liver Nephropathy Chronicprogr, Minimal
- \* Liver Eosinophilic Focus
- \* Liver Bile Duct Hyperplasia Minimal
- \* Liver [ Eosinophilic Focus TGLs = 7 - 18 ] Inflammation Focal, Minimal
- \* Lung Alveolus Infiltration Cellular Histiocyte, Minimal
- \* Lung [ Infiltration Cellular TGLs = 5 - 4 ]
- \* Mammary Gland Fibroadenoma
- \* Mammary Gland [ Fibroadenoma TGLs = 3 - 16 ] Hyperplasia Minimal
- \* Ovary Atrophy Mild
- \* Ovary Cyst
- \* Pituitary Gland Pars Distalis Hyperplasia Minimal
- \* Skin Subcut Tiss Inflammation Marked
- \* Skin [ Inflammation TGLs = 2 - 15 ]
- \* Spleen Extramedullary Hematopoiesis Mild
- \* Spleen Pigment Minimal
- \* Thyroid Gland C Cell Carcinoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 455

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 150/300 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000470

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Carcinoma TGLs = 6 - 9 ]			
* Uterus	Lymphatic	Angiectasis	Marked
	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Mild
[ Angiectasis TGLs = 4 - 17 ]			

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 457

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000472

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Glandular
- \* Uterus
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Skin
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Stomach, Forestomach
- \* Urinary Bladder

MISSING

- \* Parathyroid Gland

OBSERVATIONS

Blood Vessel	Aorta	Mineral	Minimal
* Intestine Large, Colon		Parasite Metazoan	
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Minimal
		Inflammation	Focal, Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Marked
		Inflammation	Chronic Active, Minimal
	[ Infiltration Cellular TGLs = 1 - 4+5 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Extramedullary Hematopoiesis	Mild
		Pigment	Minimal
* Thymus		Atrophy	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 458

TRT#: 6

SEX: Female

DAY ON TEST: 742

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000473

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Uterus
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Salivary Glands
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Kidney
- \* Ovary
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Intestine Large, Colon
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- Hepatocyte
- Bile Duct
- Centrilobular
- Alveolus
- [ Infiltration Cellular TGLs = 3 - 4+5 ]
- [ Fibroadenoma TGLs = 1 - 14 ]
- Pars Distalis
- [ Hyperplasia TGLs = 2 - 9 ]
- Hyperplasia
- Hyperplasia
- Parasite Metazoan
- Cytoplasmic Alteration
- Hyperplasia
- Necrosis
- Infiltration Cellular
- Fibroadenoma
- Hyperplasia
- Extramedullary Hematopoiesis
- Atrophy
- Minimal
- Mild
- Minimal
- Minimal
- Moderate
- Histiocyte, Minimal
- Moderate
- Moderate
- Moderate

PRIMARY CAUSE OF DEATH - Liver Centrilobular Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 459

TRT#: 6

SEX: Female

DAY ON TEST: 351

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000474

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Uterus
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Thyroid Gland
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
  - [ Adenocarcinoma TGLs = 2,3,4,5,6 - 15+16+17+18+19 ]
- \* Mammary Gland
  - [ Adenocarcinoma TGLs = 1 - 14 ]
- \* Ovary
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- Hyperplasia
- Adenocarcinoma
- Extramedullary Hematopoiesis
- Adenocarcinoma
- Adenocarcinoma
- Atrophy
- Extramedullary Hematopoiesis
- Inflammation
- Adenocarcinoma
- Atrophy
- Moderate
- Metastatic (Mammary Gland)
- Minimal
- Metastatic (Mammary Gland)
- Minimal
- Moderate
- Chronic Active, Minimal
- Metastatic (Mammary Gland)
- Moderate

PRIMARY CAUSE OF DEATH - Mammary Gland Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 460

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000475

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| Blood Vessel                | * Bone                   | * Bone Marrow              | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Nose                    |
| * Pancreas                  | * Salivary Glands        | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |   |                              |                       |
|-------------------|---|------------------------------|-----------------------|
| * Adrenal Cortex  |   | Degeneration                 | Cystic, Minimal       |
| * Adrenal Medulla |   | Hyperplasia                  | Marked                |
| * Kidney          | Cortex                                      | Cyst                         |                       |
|                   | Papilla, Urothelium                         | Hyperplasia                  | Minimal               |
|                   |   | Nephropathy                  | Chronicprogr, Minimal |
| * Liver           |   | Eosinophilic Focus           |                       |
|                   | Hepatocyte                                  | Hypertrophy                  | Minimal               |
|                   | Hepatocyte                                  | Increased Mitoses            | Minimal               |
|                   |   | Pigment                      | Minimal               |
| * Mammary Gland   |   | Fibroadenoma                 | Multiple              |
|                   |   | Hyperplasia                  | Minimal               |
|                   | [ Fibroadenoma TGLs = 1,2 - 14+15 ]         |                              |                       |
| * Ovary           |   | Atrophy                      | Mild                  |
|                   |   | Cyst                         |                       |
| * Pituitary Gland | Pars Distalis                               | Hyperplasia                  | Moderate              |
| * Skin            |   | Cyst Epithelial Inclusion    |                       |
|                   | [ Cyst Epithelial Inclusion TGLs = 3 - 16 ] |                              |                       |
| * Spleen          |   | Extramedullary Hematopoiesis | Minimal               |
|                   |   | Pigment                      | Mild                  |
| * Thymus          |   | Atrophy                      | Marked                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 460

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 150/300 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000475

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Uterus

Endometrium

Metaplasia

Squamous, Minimal

---

Experiment Number: 20614 - 01  
Test Type: CHRONIC  
Route: DOSED FEED  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid  
CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
Time Report Requested: 12:58:26  
First Dose M/F: 10/27/08 / 10/28/08  
Lab: BAT

ANIMAL ID: 461

TRT#: 6

SEX: Female

DAY ON TEST: 714

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000476

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

OBSERVATIONS

* Bone Marrow		Hyperplasia	Mild
* Kidney		Carcinoma	Metastatic (Ovary)
[ Carcinoma TGLs = 4 - 17 ]			
* Liver		Carcinoma	Metastatic (Ovary)
	Hepatocyte	Increased Mitoses	Mild
	Centrilobular	Necrosis	Marked
[ Carcinoma TGLs = 3 - 16 ]			
* Lung		Carcinoma	Metastatic (Ovary)
[ Carcinoma TGLs = 5,6 - 4+5+18 ]			
* Lymph Node, Mesenteric		Carcinoma	Metastatic (Ovary)
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLs = 8 - 20 ]			
* Ovary		Atrophy	Marked
		Carcinoma	
[ Carcinoma TGLs = 1 - 14 ]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
Skeletal Muscle		Carcinoma	Metastatic (Ovary)
[ Carcinoma TGLs = 2 - 15 ]			
* Spleen	Lymph Follic	Atrophy	Moderate
		Carcinoma	Metastatic (Ovary)
		Extramedullary Hematopoiesis	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

ANIMAL ID: 461

TRT#: 6

SEX: Female

DAY ON TEST: 714

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000476

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Carcinoma TGLs = 7 - 19 ]

\* Thymus

Atrophy

Marked

---

PRIMARY CAUSE OF DEATH

- Ovary Carcinoma

---



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 462

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000477

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Renal Tubule
- Bile Duct
- Pars Distalis
- [ Adenoma TGLs = 1 - 14 ]
- Cardiomyopathy
- Mineral
- Nephropathy
- Hyperplasia
- Inflammation
- Atrophy
- Adenoma
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Hyperplasia
- Metaplasia
- Minimal
- Minimal
- Chronicprogr, Minimal
- Minimal
- Chronic Active, Minimal
- Minimal
- Minimal
- Minimal
- Mild
- Minimal
- Cystic, Minimal
- Squamous, Minimal

**Experiment Number:** 20614 - 01  
**Test Type:** CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Perfluorooctanoic Acid  
**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018  
**Time Report Requested:** 12:58:26  
**First Dose M/F:** 10/27/08 / 10/28/08  
**Lab:** BAT

**ANIMAL ID:** 463

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 150/300 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000478

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

**OBSERVATIONS**

* Adrenal Cortex		Degeneration	Cystic, Mild
* Adrenal Medulla		Hyperplasia	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Basophilic Focus	
		Clear Cell Focus	
		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Mild
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 3 - 4+5 ]		
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2 - 14+15 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
	Endometrium	Metaplasia	Squamous, Minimal

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 464

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000479

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thyroid Gland	* Trachea	* Urinary Bladder

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Mild
* Adrenal Medulla		Pheochromocytoma Benign	
* Kidney		Calculus Micro Observation Only	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver	Bile Duct	Hyperplasia	Minimal
		Inflammation	Focal, Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Marked
		Inflammation	Chronic Active, Mild
	[ Infiltration Cellular TGLs = 2 - 4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Rathkes Cleft	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
* Thymus		Atrophy	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 465

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000480

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Kidney
- \* Lung
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Ovary
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Trachea
- \* Urinary Bladder
- \* Uterus

OBSERVATIONS

- \* Bone Marrow
  - Hyperplasia
  - Moderate
- \* Liver
  - Basophilic Focus
  - Cyst
  - Cytoplasmic Alteration
  - Mild
  - Eosinophilic Focus
  - Extramedullary Hematopoiesis
  - Minimal
  - Hypertrophy
  - Minimal
  - Single Cell Death
  - Minimal
- Bile Duct
  - Hepatocyte
  - Hepatocyte
  - Hepatocyte
- [ Cyst TGLs = 3 -16 ]
  - [ Eosinophilic Focus TGLs = 2 - 3+15 ]
- \* Mammary Gland
  - Fibroadenoma
  - Hyperplasia
  - Moderate
- [ Fibroadenoma TGLs = 1 - 14 ]
- \* Spleen
  - Extramedullary Hematopoiesis
  - Moderate
  - Pigment
  - Minimal
- \* Thymus
  - Atrophy
  - Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 466

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000481

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Ovary                   | * Parathyroid Gland         | * Salivary Glands        | * Skin                     |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

OBSERVATIONS

- |  |                                     |                              |                    |
|--|-------------------------------------|------------------------------|--------------------|
| Blood Vessel   |                                     | Inflammation                 | Mild               |
| Note: Arterial inflammation involves cardiac, pancreatic, and rectal arteries. |                                     |                              |                    |
| * Kidney   |                                     | Nephropathy                  | Chronicprogr, Mild |
| * Liver  | Hepatocyte                          | Cytoplasmic Alteration       | Minimal            |
|  |                                     | Eosinophilic Focus           |                    |
|  | Hepatocyte                          | Hypertrophy                  | Minimal            |
|  | Hepatocyte                          | Increased Mitoses            | Minimal            |
|  | Hepatocyte                          | Single Cell Death            | Minimal            |
| * Lung   | Alveolus                            | Infiltration Cellular        | Histiocyte, Marked |
| * Mammary Gland  |                                     | Adenoma                      |                    |
|  |                                     | Fibroadenoma                 | Multiple           |
|  |                                     | Hyperplasia                  | Marked             |
|  | [ Fibroadenoma TGLs = 1,2 - 14+15 ] |                              |                    |
| * Pancreas   | Acinus                              | Atrophy                      | Minimal            |
| * Pituitary Gland  | Pars Distalis                       | Adenoma                      |                    |
|  | [ Adenoma TGLs = 3 - 9 ]            |                              |                    |
| * Spleen   |                                     | Extramedullary Hematopoiesis | Minimal            |
|  |                                     | Pigment                      | Minimal            |
| * Thymus   |                                     | Atrophy                      | Moderate           |
| * Thyroid Gland  | C Cell                              | Hyperplasia                  | Minimal            |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 467

TRT#: 6

SEX: Female

DAY ON TEST: 622

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000482

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Salivary Glands
- \* Stomach, Glandular
- \* Thyroid Gland
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Nose
- \* Skin
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder

OBSERVATIONS

- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node, Mesenteric
- \* Mammary Gland
- [ Galactocele TGLs = 1 - 14 ]
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Alveolus
- Pars Distalis
- Lymph Follic
- Endometrium
- Cardiomyopathy
- Nephropathy
- Basophilic Focus
- Infiltration Cellular
- Atrophy
- Galactocele
- Atrophy
- Adenoma
- Atrophy
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Minimal
- Chronicprogr, Minimal
- Histiocyte, Minimal
- Lymphoid, Minimal
- Mild
- Minimal
- Minimal
- Minimal
- Minimal
- Minimal
- Moderate
- Cystic, Mild

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 469

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000484

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | * Bone                     | * Bone Marrow             |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     | * Pancreas                |
| * Salivary Glands           | * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Trachea                   | * Urinary Bladder        |                            |                           |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                       |                       |
|-------------------|--|-----------------------|-----------------------|
| Blood Vessel      | Aorta                                    | Mineral               | Minimal               |
| * Heart           |  | Cardiomyopathy        | Minimal               |
| * Kidney          | Renal Tubule                             | Mineral               | Minimal               |
|                   |  | Nephropathy           | Chronicprogr, Minimal |
| * Liver           |  | Clear Cell Focus      |                       |
|                   | Bile Duct                                | Hyperplasia           | Minimal               |
|                   |  | Inflammation          | Focal, Minimal        |
| * Lung            | Alveolus                                 | Infiltration Cellular | Histiocyte, Moderate  |
|                   | [ Infiltration Cellular TGLs = 3 - 4+5 ] |                       |                       |
| * Mammary Gland   |  | Fibroadenoma          | Multiple              |
|                   | [ Fibroadenoma TGLs = 1,2 - 14+15 ]      |                       |                       |
| * Ovary           |  | Atrophy               | Minimal               |
|                   |  | Cyst                  |                       |
| * Pituitary Gland | Pars Distalis                            | Adenoma               |                       |
| * Spleen          |  | Pigment               | Minimal               |
| * Thymus          |  | Atrophy               | Moderate              |
| * Thyroid Gland   | C Cell                                   | Hyperplasia           | Mild                  |
| * Uterus          | Endometrium                              | Hyperplasia           | Cystic, Minimal       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 470

TRT#: 6

SEX: Female

DAY ON TEST: 564

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000485

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Kidney
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Pituitary Gland
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Ovary
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Uterus
- Bile Duct
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- Lymph Follic
- Epithelium
- Endometrium
- [ Adenocarcinoma TGLs = 1 - 14 ]
- Degeneration
- Hyperplasia
- Hyperplasia
- Necrosis
- Adenocarcinoma
- Infiltration Cellular
- Atrophy
- Atrophy
- Cyst
- Atrophy
- Pigment
- Hyperplasia
- Atrophy
- Adenocarcinoma
- Cystic, Minimal
- Mild
- Minimal
- Minimal
- Metastatic (Uterus)
- Histiocyte, Mild
- Moderate
- Mild
- Minimal
- Minimal
- Moderate
- Marked

PRIMARY CAUSE OF DEATH - Uterus Endometrium Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 471

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000486

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Brain                   | * Clitoral Gland            |
| * Esophagus              | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mesenteric    |
| * Nose                   | * Parathyroid Gland        | * Salivary Glands         | * Skin                      |
| * Stomach, Glandular     | * Thymus                   | * Trachea                 | * Urinary Bladder           |

OBSERVATIONS

- |                          |  |                              |                       |
|--------------------------|--|------------------------------|-----------------------|
| * Adrenal Cortex         |  | Degeneration                 | Cystic, Moderate      |
| * Adrenal Medulla        |  | Hyperplasia                  | Marked                |
| * Bone Marrow            |  | Hyperplasia                  | Minimal               |
| * Kidney                 |  | Nephropathy                  | Chronicprogr, Minimal |
| * Liver                  |  | Cholangioma                  |                       |
|                          | Hepatocyte                               | Cytoplasmic Alteration       | Minimal               |
|                          | Bile Duct                                | Hyperplasia                  | Minimal               |
|                          |  | Pigment                      | Minimal               |
|                          | [ Cholangioma TGLs = 6 - 18 ]            |                              |                       |
| * Lung                   | Alveolus                                 | Infiltration Cellular        | Histiocyte, Marked    |
|                          | [ Infiltration Cellular TGLs = 4 - 4+5 ] |                              |                       |
| * Lymph Node, Mandibular |  | Infiltration Cellular        | Plasma Cell, Mild     |
| * Mammary Gland          |  | Fibroadenoma                 | Multiple              |
|                          | [ Fibroadenoma TGLs = 1,2,3 - 14+15+16 ] |                              |                       |
| * Ovary                  |  | Atrophy                      | Moderate              |
| * Pancreas               | Acinus                                   | Atrophy                      | Minimal               |
| * Pituitary Gland        | Pars Distalis                            | Hyperplasia                  | Marked                |
|                          | [ Hyperplasia TGLs = 5 - 17 ]            |                              |                       |
| * Spleen                 |  | Extramedullary Hematopoiesis | Mild                  |
|                          |  | Pigment                      | Minimal               |
| * Stomach, Forestomach   |  | Inflammation                 | Chronic Active, Mild  |
| * Thyroid Gland          | C Cell                                   | Adenoma                      |                       |
| * Uterus                 | Endometrium                              | Hyperplasia                  | Cystic, Mild          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 471

**TRT#:** 6

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 150/300 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000486

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Polyp Stromal

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 472

TRT#: 6

SEX: Female

DAY ON TEST: 695

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000487

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mesenteric    | * Nose                   | * Pancreas                 | * Parathyroid Gland       |
| * Salivary Glands           | * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

OBSERVATIONS

- |                          |  |                              |                       |
|--------------------------|--|------------------------------|-----------------------|
| * Adrenal Cortex         | Zona Fascult                             | Hyperplasia                  | Minimal               |
| * Bone Marrow            |  | Hyperplasia                  | Mild                  |
| * Kidney                 |  | Nephropathy                  | Chronicprogr, Minimal |
| * Liver                  | Hepatocyte                               | Cytoplasmic Alteration       | Minimal               |
|                          | Bile Duct                                | Hyperplasia                  | Minimal               |
|                          | Hepatocyte                               | Hypertrophy                  | Minimal               |
| * Lung                   | Alveolus                                 | Infiltration Cellular        | Histiocyte, Minimal   |
|                          | [ Infiltration Cellular TGLs = 4 - 4+5 ] |                              |                       |
| * Lymph Node, Mandibular |  | Hyperplasia                  | Lymphoid, Mild        |
| * Mammary Gland          |  | Fibroadenoma                 |                       |
|                          | [ Fibroadenoma TGLs = 1 - 14 ]           | Hyperplasia                  | Minimal               |
| * Ovary                  |  | Atrophy                      | Moderate              |
|                          | [ Cyst TGLs = 2 - 12 ]                   | Cyst                         |                       |
| * Pituitary Gland        | Pars Distalis                            | Adenoma                      |                       |
|                          | [ Adenoma TGLs = 3 - 9 ]                 |                              |                       |
| * Spleen                 |  | Extramedullary Hematopoiesis | Moderate              |
| * Thymus                 |  | Atrophy                      | Moderate              |
| * Uterus                 | Endometrium                              | Hyperplasia                  | Cystic, Minimal       |
|                          | Endometrium                              | Metaplasia                   | Squamous, Mild        |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 473

TRT#: 6

SEX: Female

DAY ON TEST: 368

DOSE: 150/300 ppm

DISP: Moribund Sacrifice

HISTO: 1000488

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Kidney
- \* Ovary
- \* Salivary Glands
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Uterus
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Pituitary Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 1,2 - 4+5 ]
- [ Fibroadenoma TGLs = 3 - 14 ]
- Follicular Cel
- Hyperplasia
- Hyperplasia
- Cytoplasmic Alteration
- Hypertrophy
- Single Cell Death
- Infiltration Cellular
- Fibroadenoma
- Extramedullary Hematopoiesis
- Atrophy
- Hypertrophy
- Moderate
- Mild
- Minimal
- Minimal
- Minimal
- Histiocyte, Minimal
- Minimal
- Mild
- Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 474

TRT#: 6

SEX: Female

DAY ON TEST: 349

DOSE: 150/300 ppm

DISP: Natural Death

HISTO: 1000489

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Pituitary Gland         | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

OBSERVATIONS

- |                 |                |              |                       |
|-----------------|----------------|--------------|-----------------------|
| * Brain         |                | Necrosis     | Marked                |
| * Kidney        |                | Nephropathy  | Chronicprogr, Minimal |
| * Liver         | Bile Duct      | Hyperplasia  | Minimal               |
|                 |                | Inflammation | Focal, Mild           |
|                 |                | Necrosis     | Mild                  |
| * Ovary         |                | Cyst         |                       |
| * Spleen        | Lymph Follic   | Atrophy      | Mild                  |
|                 |                | Pigment      | Mild                  |
| * Thyroid Gland | Follicular Cel | Hypertrophy  | Mild                  |

PRIMARY CAUSE OF DEATH - Brain Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 475

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000490

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    |
| * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  | * Urinary Bladder         |

OBSERVATIONS

- |                   |  |                                 |                         |
|-------------------|--|---------------------------------|-------------------------|
| * Adrenal Cortex  |  | Degeneration                    | Cystic, Minimal         |
| * Bone Marrow     |  | Hyperplasia                     | Moderate                |
| * Kidney          |  | Calculus Micro Observation Only | Minimal                 |
|                   | Papilla, Urothelium                        | Hyperplasia                     | Minimal                 |
| * Liver           |  | Basophilic Focus                |                         |
|                   | Hepatocyte                                 | Cytoplasmic Alteration          | Minimal                 |
|                   | Hepatocyte                                 | Hypertrophy                     | Minimal                 |
|                   |  | Necrosis                        | Minimal                 |
|                   |  | Pigment                         | Minimal                 |
| * Lung            | Alveolus                                   | Infiltration Cellular           | Histiocyte, Mild        |
|                   |  | Inflammation                    | Chronic Active, Minimal |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ]   |                                 |                         |
| * Ovary           |  | Atrophy                         | Minimal                 |
| * Pituitary Gland | Pars Distalis                              | Hyperplasia                     | Minimal                 |
| * Spleen          | Lymph Follic                               | Atrophy                         | Minimal                 |
| * Thymus          |  | Atrophy                         | Moderate                |
| * Thyroid Gland   | Follicular Cel                             | Hypertrophy                     | Minimal                 |
| * Uterus          | Bilateral, Endometrium                     | Adenocarcinoma                  |                         |
|                   | [ Adenocarcinoma TGLs = 1,3,4 - 14+15+16 ] |                                 |                         |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 476

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000491

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Kidney	Papilla, Urothelium	Hyperplasia	Minimal
		Nephropathy	Chronicprogr, Mild
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 1 - 4+5 ]	Inflammation	Multifocal, Granulomatous, Minimal
* Ovary		Atrophy	Moderate
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Extramedullary Hematopoiesis	Mild
		Pigment	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 477

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000492

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Kidney	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Minimal
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Marked
	[ Infiltration Cellular TGLs = 2 - 4+5 ]		
* Mammary Gland		Fibroadenoma	
		Hyperplasia	Moderate
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
	[ Hyperplasia TGLs = 3 - 15 ]		
* Spleen		Pigment	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 478

TRT#: 6

SEX: Female

DAY ON TEST: 744

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000493

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Salivary Glands           | * Skin                   |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |  |                     |                        |                    |
|--|---------------------|------------------------|--------------------|
| * Kidney                                 | Papilla, Urothelium | Hyperplasia            | Minimal            |
|  | Renal Tubule        | Mineral                | Minimal            |
| * Liver                                  |                     | Basophilic Focus       |                    |
|  |                     | Clear Cell Focus       |                    |
|  | Hepatocyte          | Cytoplasmic Alteration | Minimal            |
|  | Hepatocyte          | Hypertrophy            | Minimal            |
|  |                     | Mixed Cell Focus       |                    |
| [ Mixed Cell Focus TGLs = 3 - 15 ]       |                     |                        |                    |
| * Lung                                   | Alveolus            | Infiltration Cellular  | Histiocyte, Marked |
| [ Infiltration Cellular TGLs = 2 - 4+5 ] |                     |                        |                    |
| * Mammary Gland                          |                     | Fibroadenoma           |                    |
| [ Fibroadenoma TGLs = 1 - 14 ]           |                     |                        |                    |
| * Ovary                                  |                     | Atrophy                | Moderate           |
| * Pituitary Gland                        | Pars Distalis       | Hyperplasia            | Moderate           |
| * Spleen                                 |                     | Pigment                | Minimal            |
| * Thymus                                 |                     | Atrophy                | Moderate           |
| * Uterus                                 | Endometrium         | Hyperplasia            | Cystic, Mild       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 479

TRT#: 6

SEX: Female

DAY ON TEST: 745

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000494

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Bile Duct
- Alveolus
- Pars Distalis
- Endometrium
- Endometrium
- Hypertrophy
- Hyperplasia
- Parasite Metazoan
- Calculus Micro Observation Only
- Nephropathy
- Extramedullary Hematopoiesis
- Hyperplasia
- Pigment
- Infiltration Cellular
- Fibroadenoma
- Atrophy
- Hyperplasia
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Metaplasia
- Mild
- Moderate
- Minimal
- Chronicprogr, Minimal
- Minimal
- Minimal
- Histiocyte, Marked
- Minimal
- Marked
- Mild
- Moderate
- Cystic, Moderate
- Squamous, Mild

[ Hyperplasia TGLs = 2 - 15 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 480

TRT#: 6

SEX: Female

DAY ON TEST: 746

DOSE: 150/300 ppm

DISP: Terminal Sacrifice

HISTO: 1000495

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular |
| * Mammary Gland            | * Nose                    | * Ovary                     | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | * Uterus                 |

OBSERVATIONS

- |                          |               |                  |                       |
|--------------------------|---------------|------------------|-----------------------|
| * Kidney                 |               | Nephropathy      | Chronicprogr, Minimal |
| * Liver                  |               | Clear Cell Focus |                       |
|                          | Bile Duct     | Hyperplasia      | Minimal               |
|                          |               | Inflammation     | Focal, Minimal        |
|                          |               | Pigment          | Minimal               |
| * Lymph Node, Mesenteric |               | Hyperplasia      | Lymphoid, Mild        |
| * Pancreas               | Acinus        | Atrophy          | Minimal               |
| * Pituitary Gland        | Pars Distalis | Hyperplasia      | Minimal               |
| * Spleen                 |               | Pigment          | Minimal               |
| * Thymus                 |               | Atrophy          | Minimal               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 481

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000496

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Skin
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Stomach, Glandular

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- \* Adrenal Cortex
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Stomach, Forestomach
- Degeneration
- Parasite Metazoan
- Hyperplasia
- Nephropathy
- Cytoplasmic Alteration
- Eosinophilic Focus
- Hyperplasia
- Hypertrophy
- Pigment
- Single Cell Death
- Infiltration Cellular
- Inflammation
- Atrophy
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Hyperplasia
- Inflammation
- Cystic, Minimal
- Minimal
- Chronicprogr, Minimal
- Moderate
- Minimal
- Mild
- Mild
- Minimal
- Histiocyte, Minimal
- Chronic Active, Minimal
- Mild
- Minimal
- Minimal
- Minimal
- Moderate
- Chronic Active, Minimal

[ Infiltration Cellular TGLs = 1 - 4+5 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 481

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000496

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Mild

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 482

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000497

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Kidney
- \* Liver
- [ Hepatocellular Carcinoma TGLs = 1 - 14 ]
- \* Lung
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- Papilla, Urothelium
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Alveolus
- Pars Distalis
- Hyperplasia
- Hyperplasia
- Clear Cell Focus
- Cytoplasmic Alteration
- Eosinophilic Focus
- Hepatocellular Carcinoma
- Hypertrophy
- Inflammation
- Pigment
- Single Cell Death
- Infiltration Cellular
- Inflammation
- Hyperplasia
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Marked
- Mild
- Mild
- Moderate
- Focal, Minimal
- Marked
- Mild
- Histiocyte, Marked
- Chronic Active, Minimal
- Moderate
- Minimal
- Minimal
- Mild
- Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 483

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000498

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Pancreas
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Nose
- \* Skin
- \* Uterus

MISSING

- \* Lymph Node, Mandibular

OBSERVATIONS

- \* Kidney
  - Papilla, Urothelium
    - Hyperplasia
    - Inflammation
  - Pelvis
    - Inflammation
  - Papilla
    - Necrosis
    - Nephropathy
- [ Inflammation TGLs = 3 - 14 ]
- \* Liver
  - Hepatocyte
    - Basophilic Focus
    - Cytoplasmic Alteration
  - Hepatocyte
    - Hypertrophy
    - Necrosis
    - Pigment
- \* Lung
  - Hepatocyte
    - Single Cell Death
  - Alveolus
    - Infiltration Cellular
    - Inflammation
- [ Infiltration Cellular TGLs = 4 - 4+5 ]
- \* Mammary Gland
  - Fibroadenoma
    - Hyperplasia
- [ Fibroadenoma TGLs = 1 - 15 ]
- \* Ovary
  - Cyst
- [ Cyst TGLs = 2 - 12 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 483

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000498

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal
* Thymus		Atrophy	Marked
* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal

---



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 484

TRT#: 8

SEX: Female

DAY ON TEST: 66

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000499

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

\* Bone

\* Eye

\* Nose

MISSING

\* Adrenal Cortex

\* Adrenal Medulla

Blood Vessel

\* Brain

\* Clitoral Gland

\* Esophagus

\* Harderian Gland

\* Heart

\* Intestine Large, Cecum

\* Intestine Large, Colon

\* Intestine Large, Rectum

\* Intestine Small, Duodenum

\* Intestine Small, Ileum

\* Intestine Small, Jejunum

\* Islets, Pancreatic

\* Kidney

\* Liver

\* Lung

\* Lymph Node, Mandibular

\* Lymph Node, Mesenteric

\* Mammary Gland

\* Ovary

\* Pancreas

\* Parathyroid Gland

\* Pituitary Gland

\* Salivary Glands

\* Skin

\* Spleen

\* Stomach, Forestomach

\* Stomach, Glandular

\* Thymus

\* Thyroid Gland

\* Trachea

\* Urinary Bladder

\* Uterus

OBSERVATIONS

\* Bone Marrow

Atrophy

Mild

PRIMARY CAUSE OF DEATH

- UNCERTAIN

Animal Note: Almost entire animal was cannibalized!

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 485

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000500

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Nose	* Pancreas	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder	* Uterus	

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Kidney	Papilla, Urothelium	Hyperplasia	Moderate
	Pelvis	Inflammation	Chronic, Mild
		Nephropathy	Chronicprogr, Minimal
* Liver		Clear Cell Focus	
	Bile Duct	Cyst	
	Hepatocyte	Cytoplasmic Alteration	Mild
		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Mild
		Pigment	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 2 - 4+5 ]		
* Lymph Node, Mandibular		Atrophy	Mild
* Lymph Node, Mesenteric		Atrophy	Lymphoid, Minimal
* Mammary Gland		Hyperplasia	Mild
* Ovary		Cyst	
	[ Cyst TGLs = 1 - 12 ]		
* Parathyroid Gland		Adenoma	
* Spleen		Pigment	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 486

TRT#: 8

SEX: Female

DAY ON TEST: 505

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000501

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Uterus
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Ovary
- \* Salivary Glands
- \* Thyroid Gland
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pancreas
- \* Skin
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow
- \* Kidney
- [ Dilation TGLs = 1 - 6 ]
- \* Liver
- \* Lung
- \* Spleen
- \* Thymus
- Pelvis
- Papilla, Urothelium
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Alveolus
- Hyperplasia
- Calculus Micro Observation Only
- Dilation
- Hyperplasia
- Nephropathy
- Basophilic Focus
- Cytoplasmic Alteration
- Extramedullary Hematopoiesis
- Hypertrophy
- Inflammation
- Pigment
- Single Cell Death
- Infiltration Cellular
- Extramedullary Hematopoiesis
- Atrophy
- Moderate
- Minimal
- Minimal
- Mild
- Chronicprogr, Minimal
- Minimal
- Mild
- Minimal
- Focal, Mild
- Mild
- Minimal
- Histiocyte, Minimal
- Moderate
- Marked

PRIMARY CAUSE OF DEATH - UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 487

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000502

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Nose                    |
| * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  | * Urinary Bladder         |

OBSERVATIONS

- |                   |                                |                                 |                       |
|-------------------|--------------------------------|---------------------------------|-----------------------|
| * Adrenal Medulla |                                | Hyperplasia                     | Minimal               |
| * Bone Marrow     |                                | Hyperplasia                     | Moderate              |
| * Kidney          |                                | Calculus Micro Observation Only | Mild                  |
|                   | Papilla, Urothelium            | Hyperplasia                     | Moderate              |
|                   | Renal Tubule                   | Mineral                         | Minimal               |
|                   | Papilla                        | Necrosis                        | Mild                  |
|                   |                                | Nephropathy                     | Chronicprogr, Minimal |
| * Liver           | Hepatocyte                     | Cytoplasmic Alteration          | Moderate              |
|                   |                                | Eosinophilic Focus              |                       |
|                   | Hepatocyte                     | Hypertrophy                     | Moderate              |
|                   |                                | Pigment                         | Moderate              |
|                   | Hepatocyte                     | Single Cell Death               | Minimal               |
| * Mammary Gland   |                                | Fibroadenoma                    |                       |
|                   |                                | Hyperplasia                     | Minimal               |
|                   | [ Fibroadenoma TGLs = 1 - 14 ] |                                 |                       |
| * Ovary           |                                | Atrophy                         | Minimal               |
| * Pituitary Gland | Pars Distalis                  | Hyperplasia                     | Minimal               |
| * Spleen          | Lymph Follic                   | Atrophy                         | Mild                  |
|                   |                                | Extramedullary Hematopoiesis    | Mild                  |
| * Thymus          |                                | Atrophy                         | Moderate              |
| * Thyroid Gland   | C Cell                         | Hyperplasia                     | Mild                  |
|                   | Follicular Cel                 | Hypertrophy                     | Minimal               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 487

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000502

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Uterus

Endometrium

Adenocarcinoma

Endometrium

Hyperplasia

Cystic, Minimal

Endometrium

Metaplasia

Squamous, Minimal

[ Adenocarcinoma TGLs = 2 - 15 ]

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 488

TRT#: 8

SEX: Female

DAY ON TEST: 298

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000503

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Mammary Gland          | * Nose                     |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         | * Uterus                    |                          |                            |

MISSING

- \* Lymph Node, Mandibular

OBSERVATIONS

- |                          |                          |                           |                         |
|--------------------------|--------------------------|---------------------------|-------------------------|
| * Adrenal Cortex         |                          | Vacuolization Cytoplasmic | Minimal                 |
| * Kidney                 | Papilla, Urothelium      | Hyperplasia               | Minimal                 |
|                          | Papilla                  | Necrosis                  | Marked                  |
|                          |                          | Nephropathy               | Chronicprogr, Mild      |
| * Liver                  | Hepatocyte               | Cytoplasmic Alteration    | Marked                  |
|                          | Hepatocyte               | Hypertrophy               | Marked                  |
|                          |                          | Pigment                   | Minimal                 |
|                          | Hepatocyte               | Single Cell Death         | Minimal                 |
| * Lymph Node, Mesenteric |                          | Atrophy                   | Lymphoid, Minimal       |
| * Spleen                 | Lymph Follic             | Atrophy                   | Moderate                |
|                          |                          | Pigment                   | Mild                    |
| * Stomach, Forestomach   | Epithelium               | Hyperplasia               | Minimal                 |
|                          | Submucosa                | Inflammation              | Chronic Active, Minimal |
| * Thymus                 |                          | Atrophy                   | Marked                  |
|                          | [ Atrophy TGLs = 1 - 4 ] |                           |                         |
| * Thyroid Gland          | Follicular Cel           | Hypertrophy               | Minimal                 |

PRIMARY CAUSE OF DEATH

- Kidney Papilla Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 489

TRT#: 8

SEX: Female

DAY ON TEST: 695

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000504

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pituitary Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Stomach, Forestomach

OBSERVATIONS

- \* Adrenal Medulla
  - Hyperplasia
  - Pheochromocytoma Benign
- Note: Per pre-PWG
- \* Bone Marrow
  - Hyperplasia
- \* Kidney
  - Calculus Micro Observation Only
  - Papilla, Urothelium
    - Hyperplasia
    - Infarct
    - Nephropathy
- \* Liver
  - Hepatocyte
    - Cytoplasmic Alteration
    - Leukemia Mononuclear
    - Necrosis
    - Pigment
  - Hepatocyte
    - Single Cell Death
  - Alveolus
    - Infiltration Cellular
- \* Lung
  - [ Infiltration Cellular TGLs = 5 - 4+5 ]
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 2 - 14 ]
- Mesentery
  - [ Hemorrhage TGLs = 3 - 15 ]
- \* Ovary
  - Atrophy
- \* Pancreas
  - Acinus
    - Atrophy
  - Duct
    - Inflammation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 489

TRT#: 8

SEX: Female

DAY ON TEST: 695

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000504

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen		Leukemia Mononuclear	
		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLs = 4 - 16 ]		
* Thymus		Atrophy	Marked
* Thyroid Gland	C Cell	Adenoma	
* Uterus		Hemorrhage	Minimal
	Endometrium	Hyperplasia	Cystic, Minimal
		Inflammation	Suppurative, Minimal
		Polyp Stromal	
	[ Polyp Stromal TGLs = 1 - 12 ]		

PRIMARY CAUSE OF DEATH - Spleen Leukemia Mononuclear



**Experiment Number:** 20614 - 01  
**Test Type:** CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Perfluorooctanoic Acid  
**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018  
**Time Report Requested:** 12:58:26  
**First Dose M/F:** 10/27/08 / 10/28/08  
**Lab:** BAT

**ANIMAL ID:** 490

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 669

**DOSE:** 0/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000505

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland	* Trachea
* Urinary Bladder			

**OBSERVATIONS**

* Bone Marrow		Hyperplasia	Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney	Papilla, Urothelium	Hyperplasia	Mild
	Renal Tubule	Mineral	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
		Extramedullary Hematopoiesis	Minimal
	Hepatocyte	Hypertrophy	Minimal
		Pigment	Mild
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 5 - 4+5 ]		
	Lymph Node	Hyperplasia	Lymphoid, Mild
	[ Hyperplasia TGLs = 4 - 17 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Ovary		Atrophy	Mild
* Pituitary Gland			
	Note: Vascular anomaly/dilatation present within the pars nervosa.		
* Spleen		Extramedullary Hematopoiesis	Moderate
* Thymus		Atrophy	Moderate
		Neural Crest Tumor	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

ANIMAL ID: 490

TRT#: 8

SEX: Female

DAY ON TEST: 669

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000505

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Uterus

Inflammation

Suppurative, Mild

[ Sarcoma Stromal TGLs = 2 - 15 ]

Sarcoma Stromal

Vagina

Squamous Cell Carcinoma

[ Squamous Cell Carcinoma TGLs = 3 - 16 ]

---

PRIMARY CAUSE OF DEATH - Vagina Squamous Cell Carcinoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 492

TRT#: 8

SEX: Female

DAY ON TEST: 253

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000507

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Uterus
- Blood Vessel
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Bone
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Salivary Glands
- \* Trachea
- \* Brain
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Ovary
- \* Skin
- \* Urinary Bladder

MISSING

- \* Clitoral Gland

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Pancreas
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- Vacuolization Cytoplasmic
- Hyperplasia
- Hyperplasia
- Mineral
- Necrosis
- Nephropathy
- Cytoplasmic Alteration
- Hypertrophy
- Necrosis
- Pigment
- Single Cell Death
- Infiltration Cellular
- Necrosis
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hypertrophy
- Minimal
- Mild
- Minimal
- Minimal
- Moderate
- Chronicprogr, Mild
- Mild
- Marked
- Mild
- Minimal
- Minimal
- Histiocyte, Minimal
- Minimal
- Mild
- Minimal
- Moderate
- Mild

[ Hypertrophy TGLs = 2 - 3 ]

[ Atrophy TGLs = 1 - 4 ]

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

---

**ANIMAL ID:** 492

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 253

**DOSE:** 0/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000507

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Kidney Papilla Necrosis

CONTRIBUTORY CAUSE OF DEATH

- Liver Necrosis

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 493

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000508

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Spleen
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Glandular
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Papilla, Urothelium
- Bile Duct
- Hepatocyte
- Bile Duct
- Hepatocyte
- [ Cyst TGLs = 3 - 14 ]
- Alveolus
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- Pars Distalis
- C Cell
- Endometrium
- Degeneration
- Hyperplasia
- Calculus Micro Observation Only
- Hyperplasia
- Infarct
- Nephropathy
- Cyst
- Cytoplasmic Alteration
- Hepatocellular Carcinoma
- Hyperplasia
- Hypertrophy
- Pigment
- Infiltration Cellular
- Atrophy
- Cyst
- Adenoma
- Atrophy
- Hyperplasia
- Hyperplasia
- Cystic, Minimal
- Mild
- Minimal
- Mild
- Minimal
- Chronicprogr, Mild
- Moderate
- Minimal
- Moderate
- Mild
- Histiocyte, Mild
- Minimal
- Moderate
- Marked
- Cystic, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 493

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000508

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Endometrium

Metaplasia

Squamous, Minimal

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 495

TRT#: 8

SEX: Female

DAY ON TEST: 741

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000510

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pituitary Gland
- \* Thyroid Gland
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin

OBSERVATIONS

- \* Bone Marrow
- \* Kidney
- [ Dilation TGLs = 4 - 17 ]
- \* Liver
- \* Lung
- Lymph Node
- \* Lymph Node, Mesenteric
- \* Ovary
- Pelvis
- Hepatocyte
- Bile Duct
- Oval Cell
- Kupffer Cell
- Hepatocyte
- Hepatocyte
- Alveolus
- Mediastinal
- Pancreatic
- [ Adenocarcinoma TGLs = 5 - 18 , 7 - 19 ]
- Hyperplasia
- Dilation
- Nephropathy
- Adenocarcinoma
- Cytoplasmic Alteration
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hypertrophy
- Necrosis
- Pigment
- Adenocarcinoma
- Infiltration Cellular
- Adenocarcinoma
- Adenocarcinoma
- Adenocarcinoma
- Adenocarcinoma
- Adenocarcinoma
- Moderate
- Marked
- Chronicprogr, Minimal
- Metastatic (Uterus)
- Marked
- Mild
- Moderate
- Marked
- Mild
- Marked
- Moderate
- Mild
- Metastatic (Uterus)
- Histiocyte, Moderate
- Metastatic (Uterus)
- Metastatic (Uterus)
- Metastatic (Uterus)
- Metastatic (Uterus)
- Metastatic (Uterus)

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 495

TRT#: 8

SEX: Female

DAY ON TEST: 741

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000510

ORGAN AND ACCOUNTABLE SITE STATUS

Atrophy Moderate

Note: Tissue submitted as ovary comprised carcinoma metastases - identification as ovary was based solely on gross examination. One ovary was not involved.

\* Pancreas Adenocarcinoma Metastatic (Uterus)  
Skeletal Muscle Adenocarcinoma Metastatic (Uterus)

[ Adenocarcinoma TGLs = 1 - 14 ]

\* Spleen Lymph Follic Atrophy Moderate  
Extramedullary Hematopoiesis Minimal

\* Stomach, Forestomach Epithelium Hyperplasia Moderate  
Submucosa Inflammation Chronic Active, Mild

\* Thymus Ulcer Minimal  
Atrophy Moderate

\* Urinary Bladder Adenocarcinoma Metastatic (Uterus)

\* Uterus Cervix Adenocarcinoma

[ Adenocarcinoma TGLs = 2,3 - 15+16 ]

PRIMARY CAUSE OF DEATH - Uterus Cervix Adenocarcinoma



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 496

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000511

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Brain                   | * Clitoral Gland            |
| * Esophagus              | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Nose                     | * Pancreas                | * Parathyroid Gland         |
| * Salivary Glands        | * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Trachea                |                            |                           |                             |

OBSERVATIONS

- |                   |  |                                 |                       |
|-------------------|--|---------------------------------|-----------------------|
| * Adrenal Cortex  |  | Degeneration                    | Cystic, Mild          |
| * Adrenal Medulla |  | Hyperplasia                     | Mild                  |
| * Bone Marrow     |  | Hyperplasia                     | Mild                  |
| * Kidney          |  | Calculus Micro Observation Only | Mild                  |
|                   | Papilla, Urothelium                      | Hyperplasia                     | Moderate              |
|                   | Pelvis                                   | Inflammation                    | Chronic, Mild         |
|                   | Renal Tubule                             | Mineral                         | Minimal               |
|                   |  | Nephropathy                     | Chronicprogr, Minimal |
|                   |  | Thrombus                        | Minimal               |
| * Liver           | Hepatocyte                               | Cytoplasmic Alteration          | Mild                  |
|                   | Bile Duct                                | Hyperplasia                     | Minimal               |
|                   | Hepatocyte                               | Hypertrophy                     | Mild                  |
|                   |  | Inflammation                    | Focal, Minimal        |
|                   |  | Pigment                         | Mild                  |
| * Lung            | Alveolus                                 | Infiltration Cellular           | Histiocyte, Moderate  |
|                   | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                                 |                       |
| * Mammary Gland   |  | Hyperplasia                     | Minimal               |
| * Ovary           |  | Atrophy                         | Minimal               |
|                   |  | Cyst                            |                       |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                     | Mild                  |
| * Spleen          |  | Extramedullary Hematopoiesis    | Minimal               |
| * Thymus          |  | Atrophy                         | Marked                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 496

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 745

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000511

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal
* Urinary Bladder		Inflammation	Marked
* Uterus	Cervix	Inflammation	Suppurative, Moderate
	Endometrium	Metaplasia	Squamous, Minimal

[ Inflammation TGLs = 2 - 14 ]

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 497

TRT#: 8

SEX: Female

DAY ON TEST: 438

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000512

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Mammary Gland
- \* Nose
- \* Ovary
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Spleen
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Bone Marrow Hyperplasia Mild
- \* Kidney Papilla, Urothelium Hyperplasia Mild
- Papilla Necrosis Minimal
- Nephropathy Chronicprogr, Minimal
- \* Liver Hepatocyte Cytoplasmic Alteration Mild
- Bile Duct Hyperplasia Minimal
- Hepatocyte Hypertrophy Moderate
- \* Lung Alveolus Infiltration Cellular Histiocyte, Mild
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Stomach, Glandular Mucosa Mineral Mild
- \* Thymus Atrophy Minimal
- \* Thyroid Gland Follicular Cel Hypertrophy Moderate
- \* Urinary Bladder Inflammation Mild
- \* Uterus Endometrium Hyperplasia Cystic, Minimal

PRIMARY CAUSE OF DEATH - UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 498

TRT#: 8

SEX: Female

DAY ON TEST: 722

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000513

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Islets, Pancreatic
- \* Nose
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Trachea

MISSING

- \* Lymph Node, Mandibular
- \* Mammary Gland
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow
  - \* Intestine Small, Jejunum
  - \* Kidney
  - \* Liver
  - \* Lung
  - \* Lymph Node, Mesenteric
  - \* Ovary
  - \* Pancreas
  - \* Spleen
  - \* Stomach, Forestomach
- [ Adenocarcinoma TGLs = 3 - 3 ]  
 [ Infiltration Cellular TGLs = 4 - 4+5 ]  
 [ Adenocarcinoma TGLs = 2 - 15 ]
- Hepatocyte
  - Hepatocyte
  - Hepatocyte
  - Alveolus
  - Acinus
  - Lymph Follic
  - Epithelium
  - Submucosa
- Hyperplasia
  - Adenocarcinoma
  - Nephropathy
  - Adenocarcinoma
  - Cytoplasmic Alteration
  - Hypertrophy
  - Pigment
  - Single Cell Death
  - Infiltration Cellular
  - Adenocarcinoma
  - Atrophy
  - Adenocarcinoma
  - Carcinoma
  - Atrophy
  - Extramedullary Hematopoiesis
  - Hyperplasia
  - Inflammation
  - Ulcer
- Mild
  - Metastatic (Uterus)
  - Chronicprogr, Minimal
  - Metastatic (Uterus)
  - Moderate
  - Moderate
  - Minimal
  - Minimal
  - Histiocyte, Moderate
  - Metastatic (Uterus)
  - Mild
  - Metastatic (Uterus)
  - Moderate
  - Mild
  - Marked
  - Chronic Active, Marked
  - Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

**ANIMAL ID:** 498

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 722

**DOSE:** 0/1000 ppm

**DISP:** Natural Death

**HISTO:** 1000513

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Stomach, Glandular	Epithelium	Necrosis	Minimal
* Thymus		Atrophy	Marked
* Thyroid Gland		Carcinoma	Metastatic (Pancreas)
* Uterus	Endometrium	Adenocarcinoma	
[ Adenocarcinoma TGLs = 1 - 14 ]			

PRIMARY CAUSE OF DEATH - Uterus Endometrium Adenocarcinoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 500

TRT#: 8

SEX: Female

DAY ON TEST: 737

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000515

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | Blood Vessel              | * Bone                      | * Clitoral Gland         |
| * Esophagus                | * Eye                     | * Harderian Gland           | * Heart                  |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Mammary Gland             | * Nose                   |
| * Parathyroid Gland        | * Pituitary Gland         | * Salivary Glands           | * Skin                   |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |   |  |                                 |                               |
|---|--|---------------------------------|-------------------------------|
| * Adrenal Medulla   |  | Hyperplasia                     | Mild                          |
| * Bone Marrow   |  | Hyperplasia                     | Mild                          |
| * Brain   |  | Hemorrhage                      | Minimal                       |
| * Intestine Large, Cecum                                  |  | Lymphoma Malignant              |                               |
| * Kidney  |  | Calculus Micro Observation Only | Minimal                       |
|   | Papilla, Urothelium                      | Hyperplasia                     | Mild                          |
|   | Renal Tubule                             | Mineral                         | Minimal                       |
| * Liver   | Hepatocyte                               | Cytoplasmic Alteration          | Marked                        |
|   | Centrilobular                            | Fatty Change                    | Microvesicular, Diffuse, Mild |
|   | Bile Duct                                | Hyperplasia                     | Minimal                       |
|   | Hepatocyte                               | Hypertrophy                     | Marked                        |
|   |  | Lymphoma Malignant              |                               |
|   |  | Pigment                         | Mild                          |
| Note: Fatty change may be secondary to lymphoma in liver. |  |                                 |                               |
|   | [ Lymphoma Malignant TGLs = 1 - 3 ]      |                                 |                               |
| * Lung  | Alveolus                                 | Infiltration Cellular           | Histiocyte, Minimal           |
|   | [ Infiltration Cellular TGLs = 5 - 4+5 ] |                                 |                               |
| * Lymph Node, Mandibular                                  |  | Lymphoma Malignant              |                               |
| * Lymph Node, Mesenteric                                  |  | Lymphoma Malignant              |                               |
| Mesentery   |  | Hemorrhage                      | Marked                        |
|   | [ Hemorrhage TGLs = 3 - 14 ]             |                                 |                               |
| * Ovary   |  | Atrophy                         | Mild                          |
| * Pancreas  |  | Lymphoma Malignant              |                               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 500

TRT#: 8

SEX: Female

DAY ON TEST: 737

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000515

ORGAN AND ACCOUNTABLE SITE STATUS

* Spleen		Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 2 - 6 ]		
* Stomach, Forestomach	Epithelium	Hyperplasia	Moderate
	Submucosa	Inflammation	Chronic Active, Moderate
		Ulcer	Minimal
* Stomach, Glandular		Lymphoma Malignant	
* Thymus		Atrophy	Marked
		Lymphoma Malignant	
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
		Polyp Stromal	
	[ Polyp Stromal TGLs = 4 - 15 ]		

PRIMARY CAUSE OF DEATH - Spleen Lymphoma Malignant

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 502

TRT#: 8

SEX: Female

DAY ON TEST: 714

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000517

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Nose
- \* Skin
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Stomach, Glandular
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Thyroid Gland
- Papilla, Urothelium
- Hepatocyte
- Hepatocyte
- Centrilobular
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- [ Fibroadenoma TGLs = 1 - 14 ]
- Pars Distalis
- Lymph Follic
- Epithelium
- Follicular Cel
- Degeneration
- Hyperplasia
- Calculus Micro Observation Only
- Hyperplasia
- Nephropathy
- Cytoplasmic Alteration
- Hypertrophy
- Necrosis
- Pigment
- Infiltration Cellular
- Atrophy
- Fibroadenoma
- Atrophy
- Hyperplasia
- Atrophy
- Extramedullary Hematopoiesis
- Pigment
- Hyperplasia
- Atrophy
- Hypertrophy
- Cystic, Minimal
- Mild
- Mild
- Moderate
- Chronicprogr, Mild
- Mild
- Mild
- Mild
- Minimal
- Histiocyte, Moderate
- Lymphoid, Minimal
- Minimal
- Minimal
- Mild
- Minimal
- Mild
- Minimal
- Mild
- Moderate
- Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 502

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 714

**DOSE:** 0/1000 ppm

**DISP:** Natural Death

**HISTO:** 1000517

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

Endometrium

Metaplasia

Squamous, Minimal

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 503

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000518

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     | * Pancreas                |
| * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          | * Skin                    |
| * Spleen                    | * Stomach, Glandular     | * Trachea                  | * Urinary Bladder         |

OBSERVATIONS

- |                        |                                |                        |                     |
|------------------------|--------------------------------|------------------------|---------------------|
| * Bone Marrow          |                                | Hyperplasia            | Mild                |
| * Heart                |                                | Cardiomyopathy         | Minimal             |
| * Kidney               | Papilla, Urothelium            | Hyperplasia            | Minimal             |
|                        | Renal Tubule                   | Mineral                | Minimal             |
|                        |                                | Nephropathy            | Chronicprogr, Mild  |
| * Liver                | Hepatocyte                     | Cytoplasmic Alteration | Mild                |
|                        | Bile Duct                      | Hyperplasia            | Minimal             |
|                        | Hepatocyte                     | Hypertrophy            | Moderate            |
|                        |                                | Pigment                | Mild                |
|                        | Hepatocyte                     | Single Cell Death      | Minimal             |
| * Lung                 | Alveolus                       | Infiltration Cellular  | Histiocyte, Minimal |
| * Mammary Gland        |                                | Fibroadenoma           |                     |
|                        |                                | Hyperplasia            | Minimal             |
|                        | [ Fibroadenoma TGLs = 1 - 14 ] |                        |                     |
| * Ovary                |                                | Atrophy                | Minimal             |
| * Stomach, Forestomach | Epithelium                     | Hyperplasia            | Minimal             |
| * Thymus               |                                | Atrophy                | Moderate            |
| * Thyroid Gland        | Follicular Cel                 | Hypertrophy            | Moderate            |
| * Uterus               | Endometrium                    | Hyperplasia            | Cystic, Minimal     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 504

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000519

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Nose                    | * Ovary                     | * Pancreas               |
| * Parathyroid Gland        | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Trachea                 | * Urinary Bladder           | * Uterus                 |

OBSERVATIONS

- |                   |  |                                 |                    |
|-------------------|--|---------------------------------|--------------------|
| * Kidney          |  | Calculus Micro Observation Only | Minimal            |
|                   | Papilla, Urothelium                      | Hyperplasia                     | Mild               |
|                   |  | Nephropathy                     | Chronicprogr, Mild |
| * Liver           |  | Basophilic Focus                |                    |
|                   |  | Clear Cell Focus                |                    |
|                   | Hepatocyte                               | Cytoplasmic Alteration          | Mild               |
|                   | Bile Duct                                | Hyperplasia                     | Minimal            |
|                   | Hepatocyte                               | Hypertrophy                     | Minimal            |
|                   |  | Pigment                         | Minimal            |
|                   | Hepatocyte                               | Single Cell Death               | Minimal            |
| * Mammary Gland   |  | Fibroadenoma                    | Multiple           |
|                   | [ Fibroadenoma TGLs = 1,2,3 - 14+15+16 ] |                                 |                    |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                     | Mild               |
| * Spleen          |  | Extramedullary Hematopoiesis    | Minimal            |
| * Thymus          |  | Atrophy                         | Moderate           |
| * Thyroid Gland   | C Cell                                   | Carcinoma                       |                    |
|                   | Follicular Cel                           | Hypertrophy                     | Moderate           |
|                   | [ Carcinoma TGLs = 4 - 17 ]              |                                 |                    |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 505

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000520

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Uterus
- Parasite Metazoan
- Calculus Micro Observation Only
- Papilla, Urothelium
- Hepatocyte
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- [ Adenoma TGLs = 1 - 14 ]
- Endometrium
- Endometrium
- Hyperplasia
- Nephropathy
- Clear Cell Focus
- Cytoplasmic Alteration
- Hypertrophy
- Pigment
- Infiltration Cellular
- Hyperplasia
- Atrophy
- Adenoma
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Metaplasia
- Minimal
- Mild
- Chronicprogr, Mild
- Moderate
- Minimal
- Mild
- Histiocyte, Mild
- Minimal
- Moderate
- Minimal
- Moderate
- Cystic, Minimal
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 506

TRT#: 8

SEX: Female

DAY ON TEST: 652

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000521

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow
  - Hyperplasia
  - Moderate
- \* Kidney
  - Accumulation, Hyaline Droplet
  - Mild
  - Calculus Micro Observation Only
  - Minimal
  - Papilla, Urothelium
    - Hyperplasia
    - Minimal
    - Nephropathy
    - Chronicprogr, Minimal
  - \* Liver
    - Adenocarcinoma
    - Metastatic (Uterus)
    - Hepatocyte
      - Cytoplasmic Alteration
      - Moderate
      - Bile Duct
      - Hyperplasia
      - Moderate
      - Hepatocyte
      - Hypertrophy
      - Marked
      - Necrosis
      - Minimal
      - Pigment
      - Moderate
      - Hepatocyte
      - Single Cell Death
      - Mild
    - [ Adenocarcinoma TGLs = 6 - 18 ]
  - \* Lung
    - Adenocarcinoma
    - Metastatic (Uterus)
    - Alveolus
    - Infiltration Cellular
    - Histiocyte, Minimal
    - [ Adenocarcinoma TGLs = 7,10 - 19+22 ]
    - [ Infiltration Cellular TGLs = 11 - 4+5 ]
  - Lymph Node
    - Mediastinal
    - Ectasia
    - Mild
    - [ Ectasia TGLs = 9 - 21 ]
  - \* Mammary Gland
    - Fibroadenoma
    - [ Fibroadenoma TGLs = 8 - 20 ]
  - \* Ovary
    - Atrophy
    - Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 506

TRT#: 8

SEX: Female

DAY ON TEST: 652

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000521

ORGAN AND ACCOUNTABLE SITE STATUS

* Pancreas		Adenocarcinoma	Metastatic (Uterus)
	[ Adenocarcinoma TGLs = 3 - 15 ]		
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Skeletal Muscle		Adenocarcinoma	Metastatic (Uterus)
	[ Adenocarcinoma TGLs = 4,5 - 16+17 ]		
* Spleen		Extramedullary Hematopoiesis	Mild
	Lymph Follic	Hyperplasia	Mild
* Stomach, Forestomach	Epithelium	Hyperplasia	Marked
	Submucosa	Inflammation	Chronic Active, Moderate
		Ulcer	Moderate
	[ Hyperplasia TGLs = 13 - 7 ]		
* Thymus		Adenocarcinoma	Metastatic (Uterus)
		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Moderate
* Uterus	Endometrium	Adenocarcinoma	
		Dilation	Moderate
	[ Adenocarcinoma TGLs = 1 - 14 ]		
	[ Dilation TGLs = 12 - 12 ]		

PRIMARY CAUSE OF DEATH - Uterus Endometrium Adenocarcinoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 507

TRT#: 8

SEX: Female

DAY ON TEST: 379

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000522

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Kidney
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Mammary Gland
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Thyroid Gland
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow
  - \* Liver
  - \* Lung
  - \* Ovary
  - \* Skin
  - \* Spleen
  - \* Stomach, Glandular
  - \* Thymus
  - \* Uterus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- [ Fibrosarcoma TGLs = 1 - 14 ]
- Hepatocyte
  - Hepatocyte
  - Hepatocyte
  - Alveolus
  - Subcut Tiss
  - Endometrium
  - Endometrium
- Hyperplasia
  - Cytoplasmic Alteration
  - Hypertrophy
  - Pigment
  - Single Cell Death
  - Infiltration Cellular
  - Atrophy
  - Fibrosarcoma
  - Extramedullary Hematopoiesis
  - Pigment
  - Mineral
  - Atrophy
  - Hyperplasia
  - Metaplasia
- Minimal
  - Mild
  - Mild
  - Minimal
  - Mild
  - Histiocyte, Mild
  - Minimal
  - Minimal
  - Minimal
  - Mild
  - Cystic, Minimal
  - Squamous, Minimal

PRIMARY CAUSE OF DEATH - Skin Subcut Tiss Fibrosarcoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 508

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000523

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow: Hyperplasia, Moderate
- \* Kidney: Calculus Micro Observation Only, Minimal
- \* Papilla, Urothelium: Hyperplasia, Mild
- \* Liver: Nephropathy, Chronicprogr, Mild
- \* Liver: Clear Cell Focus
- \* Liver: Hepatocyte, Cytoplasmic Alteration, Moderate
- \* Liver: Hepatocyte, Hypertrophy, Mild
- \* Liver: Hepatocyte, Pigment, Mild
- \* Lung: Hepatocyte, Single Cell Death, Minimal
- \* Lung: Alveolus, Infiltration Cellular, Histocyte, Moderate
- \* Lung: [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland: Fibroadenoma, Moderate
- \* Mammary Gland: [ Fibroadenoma TGLs = 1 - 14 ]
- \* Ovary: Atrophy, Moderate
- \* Pituitary Gland: Pars Distalis, Adenoma
- \* Pituitary Gland: [ Adenoma TGLs = 3 - 15 ]
- \* Spleen: Extramedullary Hematopoiesis, Moderate
- \* Stomach, Forestomach: Epithelium, Hyperplasia, Marked
- \* Stomach, Forestomach: Submucosa, Inflammation, Chronic Active, Moderate
- \* Stomach, Forestomach: Ulcer, Minimal
- \* Stomach, Forestomach: [ Hyperplasia TGLs = 4 - 7 ]
- \* Thymus: Atrophy, Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 508

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 745

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000523

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

Follicular Cel

Hypertrophy

Minimal

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 509

TRT#: 8

SEX: Female

DAY ON TEST: 695

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000524

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |

OBSERVATIONS

- |                 |  |   |  |
|-----------------|--|---|--|
| * Kidney        | Papilla, Urothelium                      | Hyperplasia<br>Nephropathy                                      | Mild<br>Chronicprogr, Minimal          |
| * Liver         | Hepatocyte<br>Bile Duct<br>Hepatocyte    | Cytoplasmic Alteration<br>Hyperplasia<br>Hypertrophy<br>Pigment | Moderate<br>Minimal<br>Minimal<br>Mild |
| * Lung          | Alveolus                                 | Infiltration Cellular   | Histiocyte, Mild                       |
|                 | [ Infiltration Cellular TGLs = 2 - 4+5 ] |   |  |
| * Mammary Gland |  | Fibroadenoma<br>Hyperplasia                                     | Mild                                   |
|                 | [ Fibroadenoma TGLs = 1 - 14 ]           |   |  |
| * Spleen        |  | Extramedullary Hematopoiesis<br>Pigment                         | Minimal<br>Minimal                     |
| * Thymus        |  | Atrophy   | Marked                                 |
| * Uterus        |  | Dilation  | Minimal                                |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 510

TRT#: 8

SEX: Female

DAY ON TEST: 484

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000525

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Nose                   | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  | * Urinary Bladder         |

OBSERVATIONS

- |                          |  |                        |                       |
|--------------------------|--|------------------------|-----------------------|
| * Bone Marrow            |  | Hyperplasia            | Minimal               |
| * Heart                  |  | Cardiomyopathy         | Minimal               |
| * Kidney                 | Papilla, Urothelium                      | Hyperplasia            | Minimal               |
|                          | Renal Tubule                             | Mineral                | Minimal               |
|                          |  | Nephropathy            | Chronicprogr, Minimal |
| * Liver                  |  | Basophilic Focus       |                       |
|                          | Hepatocyte                               | Cytoplasmic Alteration | Mild                  |
|                          | Hepatocyte                               | Hypertrophy            | Mild                  |
|                          | Hepatocyte                               | Increased Mitoses      | Minimal               |
|                          |  | Pigment                | Minimal               |
|                          | Hepatocyte                               | Single Cell Death      | Minimal               |
| * Lung                   | Alveolus                                 | Infiltration Cellular  | Histiocyte, Minimal   |
|                          | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                        |                       |
| * Lymph Node, Mesenteric |  | Atrophy                | Lymphoid, Minimal     |
| * Mammary Gland          |  | Fibroadenoma           |                       |
|                          | [ Fibroadenoma TGLs = 1 - 14 ]           |                        |                       |
| * Ovary                  |  | Atrophy                | Mild                  |
|                          |  | Cyst                   |                       |
| * Thymus                 |  | Atrophy                | Mild                  |
| * Thyroid Gland          | Follicular Cel                           | Hypertrophy            | Minimal               |
| * Uterus                 | Endometrium                              | Hyperplasia            | Cystic, Minimal       |
|                          | Endometrium                              | Metaplasia             | Squamous, Mild        |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

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**ANIMAL ID:** 510

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 484

**DOSE:** 0/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000525

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 512

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000527

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Trachea                 | * Urinary Bladder           | * Uterus                 |                            |

OBSERVATIONS

- |                 |  |                              |                         |
|-----------------|--|------------------------------|-------------------------|
| * Eye           | Retina                                   | Degeneration                 | Minimal                 |
| * Kidney        | Papilla, Urothelium                      | Hyperplasia                  | Minimal                 |
|                 | Renal Tubule                             | Mineral                      | Minimal                 |
|                 |  | Nephropathy                  | Chronicprogr, Mild      |
| * Liver         |  | Basophilic Focus             |                         |
|                 |  | Clear Cell Focus             |                         |
|                 | Hepatocyte                               | Cytoplasmic Alteration       | Mild                    |
|                 |  | Eosinophilic Focus           |                         |
|                 |  | Hepatocellular Adenoma       |                         |
|                 | Bile Duct                                | Hyperplasia                  | Mild                    |
|                 | Hepatocyte                               | Hypertrophy                  | Mild                    |
|                 |  | Inflammation                 | Focal, Minimal          |
|                 | [ Hepatocellular Adenoma TGLs = 1 - 14 ] |                              |                         |
| * Lung          | Alveolus                                 | Infiltration Cellular        | Histiocyte, Mild        |
|                 |  | Inflammation                 | Chronic Active, Minimal |
|                 | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                              |                         |
| * Mammary Gland |  | Hyperplasia                  | Moderate                |
| * Spleen        |  | Extramedullary Hematopoiesis | Mild                    |
|                 |  | Pigment                      | Mild                    |
| * Thymus        |  | Atrophy                      | Marked                  |
| * Thyroid Gland | C Cell                                   | Hyperplasia                  | Moderate                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 513

TRT#: 8

SEX: Female

DAY ON TEST: 746

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000528

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Papilla, Urothelium
- Hepatocyte
- Bile Duct
- Hepatocyte
- Alveolus
- Pars Distalis
- Follicular Cel
- Hyperplasia
- Hyperplasia
- Calculus Micro Observation Only
- Hyperplasia
- Nephropathy
- Cytoplasmic Alteration
- Degeneration
- Hyperplasia
- Hypertrophy
- Pigment
- Infiltration Cellular
- Infiltration Cellular
- Atrophy
- Cyst
- Hyperplasia
- Extramedullary Hematopoiesis
- Atrophy
- Hypertrophy
- Dilation
- Inflammation
- Minimal
- Moderate
- Minimal
- Mild
- Chronicprogr, Mild
- Mild
- Cystic, Minimal
- Minimal
- Mild
- Mild
- Histiocyte, Moderate
- Plasma Cell, Moderate
- Moderate
- Mild
- Mild
- Moderate
- Mild
- Mild
- Acute, Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

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**ANIMAL ID:** 513

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000528

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Dilation TGLs = 1 - 12 ]

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 515

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000530

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     | * Pancreas                |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Trachea                   | * Urinary Bladder        |                            |                           |

OBSERVATIONS

- |                      |  |                              |                                 |
|----------------------|--|------------------------------|---------------------------------|
| * Adrenal Medulla    |  | Hyperplasia                  | Marked                          |
| * Bone Marrow        |  | Hyperplasia                  | Moderate                        |
| * Kidney             | Papilla, Urothelium                      | Hyperplasia                  | Minimal                         |
|                      |  | Nephropathy                  | Chronicprogr, Mild              |
| * Liver              |  | Carcinoma                    | Metastatic (Stomach, Glandular) |
|                      | Hepatocyte                               | Cytoplasmic Alteration       | Mild                            |
|                      | Bile Duct                                | Hyperplasia                  | Minimal                         |
|                      | Hepatocyte                               | Hypertrophy                  | Minimal                         |
|                      |  | Pigment                      | Minimal                         |
| * Lung               | Alveolus                                 | Infiltration Cellular        | Histiocyte, Minimal             |
|                      | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                              |                                 |
| * Mammary Gland      |  | Hyperplasia                  | Minimal                         |
| * Ovary              |  | Atrophy                      | Minimal                         |
| * Pituitary Gland    | Pars Distalis                            | Adenoma                      |                                 |
|                      | [ Adenoma TGLs = 2 - 14 ]                |                              |                                 |
| * Spleen             |  | Extramedullary Hematopoiesis | Mild                            |
| * Stomach, Glandular |  | Carcinoma                    |                                 |
|                      | [ Carcinoma TGLs = 3 - 15 ]              |                              |                                 |
| * Thymus             |  | Atrophy                      | Moderate                        |
| * Thyroid Gland      | C Cell                                   | Hyperplasia                  | Minimal                         |
|                      | Follicular Cel                           | Hypertrophy                  | Moderate                        |
| * Uterus             | Endometrium                              | Hyperplasia                  | Cystic, Minimal                 |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 515

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 745

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000530

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Endometrium

Metaplasia

Squamous, Minimal

Polyp Stromal

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 516

TRT#: 8

SEX: Female

DAY ON TEST: 721

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000531

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Brain                   | * Clitoral Gland            |
| * Esophagus              | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mesenteric    |
| * Mammary Gland          | * Nose                     | * Pancreas                | * Parathyroid Gland         |
| * Salivary Glands        | * Skin                     | * Stomach, Glandular      | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

OBSERVATIONS

- |                          |                               |                        |                          |
|--------------------------|-------------------------------|------------------------|--------------------------|
| * Adrenal Cortex         |                               | Degeneration           | Cystic, Minimal          |
| * Adrenal Medulla        |                               | Hyperplasia            | Minimal                  |
| * Bone Marrow            |                               | Hyperplasia            | Minimal                  |
| * Kidney                 | Papilla, Urothelium           | Hyperplasia            | Minimal                  |
|                          |                               | Infarct                | Minimal                  |
|                          | Renal Tubule                  | Mineral                | Minimal                  |
|                          |                               | Nephropathy            | Chronicprogr, Mild       |
| * Liver                  | Hepatocyte                    | Cytoplasmic Alteration | Minimal                  |
|                          | Bile Duct                     | Hyperplasia            | Minimal                  |
|                          | Hepatocyte                    | Hypertrophy            | Minimal                  |
|                          |                               | Pigment                | Marked                   |
|                          | Hepatocyte                    | Single Cell Death      | Mild                     |
| * Lung                   | Alveolus                      | Infiltration Cellular  | Histiocyte, Minimal      |
| * Lymph Node, Mandibular |                               | Hyperplasia            | Lymphoid, Mild           |
| * Ovary                  |                               | Atrophy                | Mild                     |
| * Pituitary Gland        | Pars Distalis                 | Adenoma                |                          |
|                          | [ Adenoma TGLs = 1 - 14 ]     |                        |                          |
| * Spleen                 |                               | Pigment                | Minimal                  |
| * Stomach, Forestomach   | Epithelium                    | Hyperplasia            | Moderate                 |
|                          | Submucosa                     | Inflammation           | Chronic Active, Moderate |
|                          |                               | Ulcer                  | Minimal                  |
|                          | [ Hyperplasia TGLs = 2 - 15 ] |                        |                          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 516

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 721

**DOSE:** 0/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000531

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

---

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 517

TRT#: 8

SEX: Female

DAY ON TEST: 351

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000532

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Urinary Bladder

MISSING

- \* Thymus

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Liver
- \* Lymph Node, Mandibular
- \* Mammary Gland
- \* Ovary
- \* Spleen
- \* Stomach, Forestomach
- \* Thyroid Gland
- Renal Tubule
- Papilla
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Epithelium
- Follicular Cel
- Vacuolization Cytoplasmic
- Calculus Micro Observation Only
- Mineral
- Necrosis
- Nephropathy
- Cytoplasmic Alteration
- Hypertrophy
- Necrosis
- Pigment
- Single Cell Death
- Atrophy
- Hyperplasia
- Atrophy
- Cyst
- Atrophy
- Pigment
- Hyperplasia
- Hypertrophy
- Minimal
- Minimal
- Minimal
- Moderate
- Chronicprogr, Mild
- Mild
- Moderate
- Minimal
- Minimal
- Mild
- Lymphoid, Marked
- Mild
- Mild
- Moderate
- Moderate
- Moderate
- Moderate

PRIMARY CAUSE OF DEATH - Kidney Papilla Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 518

TRT#: 8

SEX: Female

DAY ON TEST: 736

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000533

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Nose                      | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Salivary Glands        | * Skin                     |
| * Stomach, Glandular      | * Trachea                   | * Urinary Bladder        | * Uterus                   |

OBSERVATIONS

- |   |                |                                 |                                     |
|---|----------------|---------------------------------|-------------------------------------|
| * Bone Marrow   |                | Atrophy                         | Mild                                |
| * Kidney  |                | Calculus Micro Observation Only | Moderate                            |
|   | Papilla        | Necrosis                        | Marked                              |
| * Liver   | Hepatocyte     | Cytoplasmic Alteration          | Marked                              |
|   | Hepatocyte     | Hypertrophy                     | Marked                              |
|   |                | Necrosis                        | Minimal                             |
|   |                | Pigment                         | Mild                                |
|   | Hepatocyte     | Single Cell Death               | Moderate                            |
| * Lung  |                | Foreign Body                    |                                     |
|   |                | Inflammation                    | Multifocal, Granulomatous, Moderate |
| Note: Foreign material = plant matter.<br>[ Inflammation TGLs = 1 - 4+5 ] |                |                                 |                                     |
| * Lymph Node, Mandibular  |                | Atrophy                         | Lymphoid, Minimal                   |
| * Lymph Node, Mesenteric  |                | Atrophy                         | Lymphoid, Minimal                   |
| * Mammary Gland   |                | Fibroadenoma                    |                                     |
|   |                | Hyperplasia                     | Marked                              |
| * Spleen  | Lymph Follic   | Atrophy                         | Marked                              |
|   |                | Pigment                         | Mild                                |
| * Stomach, Forestomach  | Epithelium     | Hyperplasia                     | Moderate                            |
|   | Submucosa      | Inflammation                    | Chronic Active, Mild                |
| * Thymus  |                | Atrophy                         | Marked                              |
| * Thyroid Gland   | Follicular Cel | Hypertrophy                     | Minimal                             |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

---

**ANIMAL ID:** 518

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 736

**DOSE:** 0/1000 ppm

**DISP:** Natural Death

**HISTO:** 1000533

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Kidney Papilla Necrosis

CONTRIBUTORY CAUSE OF DEATH

- Lung Inflammation

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 520

TRT#: 8

SEX: Female

DAY ON TEST: 284

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000535

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Skin
- \* Uterus
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Pituitary Gland
- \* Trachea
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Salivary Glands
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Thyroid Gland
- Papilla
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Lymph Follic
- Epithelium
- Submucosa
- Follicular Cel
- Vacuolization Cytoplasmic
- Atrophy
- Necrosis
- Cytoplasmic Alteration
- Hypertrophy
- Pigment
- Single Cell Death
- Atrophy
- Atrophy
- Atrophy
- Pigment
- Hyperplasia
- Inflammation
- Atrophy
- Hypertrophy
- Mild
- Mild
- Marked
- Mild
- Marked
- Moderate
- Mild
- Lymphoid, Mild
- Lymphoid, Minimal
- Mild
- Moderate
- Moderate
- Chronic Active, Mild
- Marked
- Minimal

PRIMARY CAUSE OF DEATH - Kidney Papilla Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 521

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000536

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thyroid Gland          | * Trachea                  |                           |

OBSERVATIONS

- |                   |  |                                 |                  |
|-------------------|--|---------------------------------|------------------|
| * Adrenal Cortex  |  | Degeneration                    | Cystic, Minimal  |
| * Bone Marrow     |  | Hyperplasia                     | Moderate         |
| * Kidney          |  | Calculus Micro Observation Only | Minimal          |
|                   | Papilla, Urothelium                      | Hyperplasia                     | Moderate         |
|                   | Papilla                                  | Necrosis                        | Minimal          |
| * Liver           | Hepatocyte                               | Cytoplasmic Alteration          | Mild             |
|                   | Bile Duct                                | Hyperplasia                     | Minimal          |
|                   | Hepatocyte                               | Hypertrophy                     | Minimal          |
|                   |  | Pigment                         | Mild             |
|                   | Hepatocyte                               | Single Cell Death               | Minimal          |
| * Lung            | Alveolus                                 | Infiltration Cellular           | Histiocyte, Mild |
|                   | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                                 |                  |
| * Ovary           |  | Atrophy                         | Moderate         |
| * Pancreas        | Acinus                                   | Adenoma                         |                  |
| * Pituitary Gland | Pars Distalis                            | Hyperplasia                     | Mild             |
| * Spleen          |  | Extramedullary Hematopoiesis    | Moderate         |
|                   |  | Pigment                         | Minimal          |
| * Thymus          |  | Atrophy                         | Mild             |
| * Urinary Bladder |  | Inflammation                    | Minimal          |
| * Uterus          | Endometrium                              | Hyperplasia                     | Cystic, Minimal  |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 522

TRT#: 8

SEX: Female

DAY ON TEST: 745

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000537

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Minimal
* Clitoral Gland		Hyperplasia	Squamous, Marked
* Kidney	Papilla, Urothelium	Hyperplasia	Mild
	Renal Tubule	Mineral	Minimal
	Papilla	Necrosis	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Moderate
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Moderate
		Inflammation	Focal, Minimal
		Pigment	Moderate
	Hepatocyte	Single Cell Death	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Minimal
		Pigment	Minimal
* Thymus		Atrophy	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 523

TRT#: 8

SEX: Female

DAY ON TEST: 746

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000538

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Ovary
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- \* Uterus

OBSERVATIONS

- Blood Vessel Inflammation Mild  
Note: Vascular inflammation involves renal and pancreatic arteries.
- \* Bone Marrow Hyperplasia Minimal
- \* Heart Cardiomyopathy Minimal
- \* Kidney Hemorrhage Marked  
Papilla, Urothelium Hyperplasia Mild  
Infarct Minimal  
Nephropathy Chronicprogr, Moderate
- [ Hemorrhage TGLs = 2 - 15 ]
- [ Nephropathy TGLs = 3 - 16 ]
- \* Liver Clear Cell Focus  
Hepatocyte Cytoplasmic Alteration Moderate  
Bile Duct Hyperplasia Minimal  
Oval Cell Hyperplasia Minimal  
Hepatocyte Hypertrophy Mild  
Pigment Mild
- \* Lung Hepatocyte Single Cell Death Minimal  
Alveolus Infiltration Cellular Histiocyte, Minimal  
Inflammation Chronic Active, Minimal
- \* Mammary Gland Fibroadenoma  
Hyperplasia Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

ANIMAL ID: 523

TRT#: 8

SEX: Female

DAY ON TEST: 746

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000538

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Fibroadenoma TGLs = 1 - 14 ]

\* Spleen

Pigment

Minimal

\* Thymus

Atrophy

Moderate

\* Thyroid Gland

Follicular Cel

Hypertrophy

Minimal

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 524

TRT#: 8

SEX: Female

DAY ON TEST: 575

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000539

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Brain                  | * Clitoral Gland           | * Eye                     |
| * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Mammary Gland          | * Nose                     | * Ovary                   |
| * Pancreas                  | * Pituitary Gland        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Urinary Bladder          | * Uterus                  |

MISSING

- |                          |                     |                   |                          |
|--------------------------|---------------------|-------------------|--------------------------|
| * Esophagus              | * Heart             | * Lung            | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Parathyroid Gland | * Salivary Glands | * Thymus                 |
| * Thyroid Gland          | * Trachea           |                   |                          |

OBSERVATIONS

- |         |               |                        |      |
|---------|---------------|------------------------|------|
| * Liver | Hepatocyte    | Cytoplasmic Alteration | Mild |
|         | Hepatocyte    | Hypertrophy            | Mild |
|         | Centrilobular | Necrosis               | Mild |

PRIMARY CAUSE OF DEATH - UNCERTAIN

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 525

TRT#: 8

SEX: Female

DAY ON TEST: 624

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000540

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mesenteric
- \* Nose
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- \* Uterus

OBSERVATIONS

- \* Bone Marrow Hyperplasia Mild
- \* Kidney Papilla, Urothelium Hyperplasia Mild
- \* Liver Hepatocyte Cytoplasmic Alteration Mild
- Hepatocyte Hypertrophy Mild
- Hepatocyte Single Cell Death Minimal
- \* Lung Alveolus Infiltration Cellular Histiocyte, Mild
- \* Lymph Node, Mandibular Atrophy Lymphoid, Moderate
- \* Mammary Gland Fibroadenoma Multiple
- [ Fibroadenoma TGLs = 1,2 - 14+15 ]
- \* Ovary Atrophy Mild
- \* Pancreas Acinus Hyperplasia Mild
- \* Spleen Extramedullary Hematopoiesis Mild
- \* Stomach, Forestomach Epithelium Hyperplasia Marked
- Submucosa Inflammation Chronic Active, Moderate
- Mineral Minimal
- Ulcer Mild
- [ Hyperplasia TGLs = 3 - 16 ]
- \* Thymus Atrophy Moderate
- \* Thyroid Gland Follicular Cel Hypertrophy Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 526

TRT#: 8

SEX: Female

DAY ON TEST: 669

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000541

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| Blood Vessel                | * Bone                   | * Bone Marrow              | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Lymph Node, Mandibular  |
| * Lymph Node, Mesenteric    | * Nose                   | * Pancreas                 | * Parathyroid Gland       |
| * Salivary Glands           | * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

OBSERVATIONS

- |                      |                                  |                                 |                       |
|----------------------|----------------------------------|---------------------------------|-----------------------|
| * Adrenal Cortex     |                                  | Degeneration                    | Cystic, Mild          |
| * Adrenal Medulla    |                                  | Hyperplasia                     | Minimal               |
| * Islets, Pancreatic |                                  | Hyperplasia                     | Minimal               |
| * Kidney             |                                  | Calculus Micro Observation Only | Minimal               |
|                      | Papilla, Urothelium              | Hyperplasia                     | Mild                  |
|                      | Renal Tubule                     | Mineral                         | Minimal               |
|                      |                                  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver              | Hepatocyte                       | Cytoplasmic Alteration          | Minimal               |
|                      | Hepatocyte                       | Hypertrophy                     | Moderate              |
|                      |                                  | Pigment                         | Moderate              |
| * Lung               | Hepatocyte                       | Single Cell Death               | Minimal               |
| * Mammary Gland      | Alveolus                         | Infiltration Cellular           | Histiocyte, Minimal   |
|                      | [ Adenocarcinoma TGLs = 1 - 14 ] | Adenocarcinoma                  |                       |
| * Ovary              |                                  | Atrophy                         | Moderate              |
|                      |                                  | Cyst                            |                       |
| * Pituitary Gland    | Pars Distalis                    | Adenoma                         |                       |
|                      | [ Adenoma TGLs = 2 - 9 ]         |                                 |                       |
| * Spleen             | Lymph Follic                     | Atrophy                         | Minimal               |
|                      |                                  | Pigment                         | Mild                  |
| * Thymus             |                                  | Atrophy                         | Moderate              |
| * Uterus             |                                  | Inflammation                    | Suppurative, Mild     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 526

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 669

**DOSE:** 0/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000541

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Endometrium

Metaplasia

Squamous, Moderate

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 527

TRT#: 8

SEX: Female

DAY ON TEST: 522

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000542

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Mammary Gland             | * Nose                   | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Skin                     | * Stomach, Glandular      |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | * Uterus                  |

OBSERVATIONS

- |   |              |                              |                       |
|---|--------------|------------------------------|-----------------------|
| * Bone  | Vertebra     | Osteosarcoma                 |                       |
| Note: Osteosarcoma is in the region of the lumbar vertebrae<br>[ Osteosarcoma TGLs = 2-19 ] |              |                              |                       |
| * Bone Marrow   |              | Hyperplasia                  | Mild                  |
| * Kidney  |              | Nephropathy                  | Chronicprogr, Minimal |
| * Liver   |              | Angiectasis                  | Minimal               |
|   | Hepatocyte   | Cytoplasmic Alteration       | Minimal               |
|   | Hepatocyte   | Hypertrophy                  | Moderate              |
|   | Hepatocyte   | Increased Mitoses            | Mild                  |
|   |              | Necrosis                     | Mild                  |
|   |              | Pigment                      | Mild                  |
|   | Hepatocyte   | Single Cell Death            | Mild                  |
| * Lung  | Alveolus     | Infiltration Cellular        | Histiocyte, Minimal   |
|   |              | Osteosarcoma                 | Metastatic (Bone)     |
| [ Osteosarcoma TGLs = 3 - 4+5 ]   |              |                              |                       |
| * Lymph Node, Mandibular  |              | Atrophy                      | Lymphoid, Minimal     |
| * Lymph Node, Mesenteric  |              | Atrophy                      | Lymphoid, Mild        |
| * Ovary   |              | Atrophy                      | Mild                  |
|   |              | Cyst                         |                       |
| Peripheral Nerve  |              | Degeneration                 | Moderate              |
| * Spleen  | Lymph Follic | Atrophy                      | Minimal               |
|   |              | Extramedullary Hematopoiesis | Minimal               |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

**ANIMAL ID:** 527

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 522

**DOSE:** 0/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000542

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Stomach, Forestomach	Epithelium	Pigment	Minimal
	Submucosa	Hyperplasia	Moderate
		Inflammation	Chronic Active, Moderate
* Thymus		Ulcer	Minimal
		Atrophy	Moderate

PRIMARY CAUSE OF DEATH - Bone Vertebra Osteosarcoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 528

TRT#: 8

SEX: Female

DAY ON TEST: 746

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000543

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Trachea                 |                             |                          |

OBSERVATIONS

- |                   |  |                        |                    |
|-------------------|--|------------------------|--------------------|
| * Kidney          | Renal Tubule                             | Hyperplasia            | Atypical, Minimal  |
|                   | Papilla, Urothelium                      | Hyperplasia            | Moderate           |
|                   | Pelvis                                   | Inflammation           | Chronic, Moderate  |
|                   | Renal Tubule                             | Mineral                | Minimal            |
|                   | Papilla                                  | Necrosis               | Minimal            |
| * Liver           |  | Clear Cell Focus       |                    |
|                   | Hepatocyte                               | Cytoplasmic Alteration | Moderate           |
|                   | Bile Duct                                | Hyperplasia            | Minimal            |
|                   | Hepatocyte                               | Hypertrophy            | Minimal            |
|                   |  | Inflammation           | Focal, Minimal     |
|                   |  | Pigment                | Minimal            |
| * Lung            | Alveolus                                 | Infiltration Cellular  | Histiocyte, Marked |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                        |                    |
| * Mammary Gland   |  | Fibroadenoma           |                    |
|                   |  | Hyperplasia            | Minimal            |
|                   | [ Fibroadenoma TGLs = 1 - 14 ]           |                        |                    |
| * Ovary           |  | Atrophy                | Moderate           |
|                   |  | Cyst                   |                    |
| * Spleen          |  | Pigment                | Minimal            |
| * Thyroid Gland   | Follicular Cel                           | Hypertrophy            | Mild               |
| * Urinary Bladder |  | Inflammation           | Moderate           |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 528

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000543

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

Endometrium

Metaplasia

Squamous, Minimal

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 529

TRT#: 8

SEX: Female

DAY ON TEST: 718

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000544

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Glandular

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- Hyperplasia
- Hyperplasia
- Calculus Micro Observation Only
- Papilla, Urothelium
- Hyperplasia
- Infarct
- Nephropathy
- Basophilic Focus
- Hepatocyte
- Hepatocyte
- [ Hepatocellular Carcinoma TGLs = 3 - 15 ]
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- Fibroadenoma
- Hyperplasia
- [ Fibroadenoma TGLs = 1 - 14 ]
- Atrophy
- Cyst
- Adenoma
- Atrophy
- Minimal
- Mild
- Minimal
- Minimal
- Minimal
- Chronicprogr, Minimal
- Mild
- Marked
- Minimal
- Histiocyte, Mild
- Multifocal, Granulomatous, Minimal
- Minimal
- Minimal
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 529

TRT#: 8

SEX: Female

DAY ON TEST: 718

DOSE: 0/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000544

ORGAN AND ACCOUNTABLE SITE STATUS

* Stomach, Forestomach	Epithelium	Extramedullary Hematopoiesis	Mild
	Submucosa	Pigment	Minimal
		Hyperplasia	Marked
		Inflammation	Chronic Active, Moderate
[ Hyperplasia TGLs = 4 - 16 ]			
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Moderate
* Uterus		Inflammation	Suppurative, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 532

TRT#: 8

SEX: Female

DAY ON TEST: 225

DOSE: 0/1000 ppm

DISP: Natural Death

HISTO: 1000547

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Skin
- \* Uterus
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Pituitary Gland
- \* Trachea
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Salivary Glands
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Thyroid Gland
- Papilla, Urothelium
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Lymph Follic
- Epithelium
- Follicular Cel
- Vacuolization Cytoplasmic
- Atrophy
- Hyperplasia
- Cytoplasmic Alteration
- Hypertrophy
- Single Cell Death
- Atrophy
- Atrophy
- Atrophy
- Pigment
- Hyperplasia
- Atrophy
- Hypertrophy
- Minimal
- Mild
- Minimal
- Mild
- Minimal
- Minimal
- Lymphoid, Moderate
- Lymphoid, Mild
- Marked
- Moderate
- Mild
- Marked
- Minimal

PRIMARY CAUSE OF DEATH - Kidney Papilla Urothelium Hyperplasia

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 535

TRT#: 8

SEX: Female

DAY ON TEST: 746

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000550

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
  - Hyperplasia
  - Pheochromocytoma Benign
- \* Kidney
  - Calculus Micro Observation Only
  - Papilla, Urothelium
    - Hyperplasia
    - Nephropathy
- \* Liver
  - Hepatocyte
    - Cytoplasmic Alteration
    - Bile Duct
      - Hyperplasia
    - Hepatocyte
      - Hypertrophy
    - Hepatocyte
      - Increased Mitoses
    - Hepatocyte
      - Pigment
  - Hepatocyte
    - Single Cell Death
- \* Lung
  - Alveolus
    - Infiltration Cellular
    - Inflammation
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
  - Atrophy
- \* Ovary
  - Atrophy
- \* Pituitary Gland
  - Pars Distalis
    - Hyperplasia
- \* Spleen
  - Pigment
- \* Thymus
  - Atrophy
- \* Thyroid Gland
  - Follicular Cel
    - Hypertrophy
- \* Uterus
  - Endometrium
    - Hyperplasia
    - Polyp Stromal

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 536

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000551

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Glandular
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Urinary Bladder

OBSERVATIONS

- \* Kidney
  - Calculus Micro Observation Only
  - Minimal
  - Papilla, Urothelium
  - Hyperplasia
  - Mild
  - Renal Tubule
  - Mineral
  - Minimal
  - Nephropathy
  - Chronicprogr, Minimal
- \* Liver
  - Hepatocyte
  - Cytoplasmic Alteration
  - Moderate
  - Eosinophilic Focus
  - Bile Duct
  - Hyperplasia
  - Minimal
  - Hepatocyte
  - Hypertrophy
  - Mild
  - Pigment
  - Minimal
  - Alveolus
  - Infiltration Cellular TGLs = 2 - 4+5
  - Histiocyte, Moderate
- \* Lung
- \* Lymph Node, Mandibular
- \* Ovary
  - Atrophy
  - Lymphoid, Minimal
  - Atrophy
  - Mild
  - Cyst
- \* Pituitary Gland
  - Pars Distalis
  - Adenoma
- \* Spleen
  - Extramedullary Hematopoiesis
  - Mild
- \* Stomach, Forestomach
  - Epithelium
  - Hyperplasia
  - Minimal
- \* Thymus
  - Atrophy
  - Moderate
- \* Thyroid Gland
  - C Cell
  - Adenoma
  - Follicular Cel
  - Hypertrophy
  - Minimal
  - Endometrium
  - Hyperplasia
  - Cystic, Minimal
- \* Uterus

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 537

TRT#: 8

SEX: Female

DAY ON TEST: 746

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000552

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Pituitary Gland           | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         | * Uterus                    |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                 |  |  |   |
|-----------------|--|--|---|
| * Kidney        | Papilla, Urothelium<br>Renal Tubule      | Hyperplasia<br>Mineral<br>Nephropathy            | Minimal<br>Minimal<br>Chronicprogr, Minimal     |
| * Liver         | Hepatocyte<br>Hepatocyte                 | Cytoplasmic Alteration<br>Hypertrophy<br>Pigment | Minimal<br>Mild<br>Minimal                      |
| * Lung          | Alveolus                                 | Infiltration Cellular<br>Inflammation            | Histiocyte, Moderate<br>Chronic Active, Minimal |
|                 | [ Infiltration Cellular TGLs = 1 - 4+5 ] |  |   |
| * Mammary Gland |  | Hyperplasia                                      | Mild  |
| * Ovary         |  | Cyst   |   |
| * Spleen        |  | Infarct  | Minimal   |
| * Thymus        |  | Atrophy  | Moderate  |

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 538

TRT#: 8

SEX: Female

DAY ON TEST: 744

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000553

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow: Hyperplasia, Moderate
- \* Kidney: Papilla, Urothelium: Hyperplasia, Minimal; Renal Tubule: Mineral, Minimal; Nephropathy, Chronicprogr, Minimal
- \* Liver: Hepatocyte: Cytoplasmic Alteration, Moderate; Hepatocyte: Hypertrophy, Moderate; Inflammation, Focal, Minimal; Centrilobular: Necrosis, Mild; Pigment, Minimal
- \* Lung: Alveolus: Infiltration Cellular, Histocyte, Mild [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland: Fibroadenoma, Mild; Hyperplasia
- \* Ovary: Cyst
- \* Spleen: Extramedullary Hematopoiesis, Moderate
- \* Stomach, Forestomach: Epithelium: Hyperplasia, Moderate; Submucosa: Inflammation, Chronic Active, Moderate
- \* Thymus: Atrophy, Marked
- \* Thyroid Gland: C Cell: Hyperplasia, Mild; Follicular Cel: Hypertrophy, Mild
- \* Uterus: Polyp Stromal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 539

TRT#: 8

SEX: Female

DAY ON TEST: 746

DOSE: 0/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000554

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          | * Skin                    |
| * Stomach, Glandular        | * Trachea                | * Urinary Bladder          | * Uterus                  |

OBSERVATIONS

- |   |                     |                         |                          |
|---|---------------------|-------------------------|--------------------------|
| * Adrenal Cortex  |                     | Degeneration            | Cystic, Minimal          |
| * Bone Marrow   |                     | Hyperplasia             | Mild                     |
| * Kidney  | Papilla, Urothelium | Hyperplasia             | Mild                     |
|   | Papilla             | Necrosis                | Minimal                  |
| * Liver   | Hepatocyte          | Cytoplasmic Alteration  | Mild                     |
|   | Bile Duct           | Hyperplasia             | Minimal                  |
|   | Hepatocyte          | Hypertrophy             | Marked                   |
|   |                     | Pigment                 | Minimal                  |
| * Lung  |                     | Cyst                    |                          |
|   | Alveolus            | Infiltration Cellular   | Histiocyte, Marked       |
|   |                     | Inflammation            | Chronic Active, Mild     |
| Note: Keratinizing epidermoid cyst.<br>[ Infiltration Cellular TGLs = 3 - 4+5 ] |                     |                         |                          |
| * Mammary Gland   |                     | Fibroadenoma            | Multiple                 |
|   |                     | Hyperplasia             | Mild                     |
| [ Fibroadenoma TGLs = 1,2 - 14+15 ]   |                     |                         |                          |
| * Pituitary Gland   | Pars Distalis       | Hyperplasia             | Moderate                 |
| * Spleen  |                     | Pigment                 | Minimal                  |
| * Stomach, Forestomach  | Epithelium          | Hyperplasia             | Moderate                 |
|   | Submucosa           | Inflammation            | Chronic Active, Moderate |
|   |                     | Squamous Cell Papilloma |                          |
|   |                     | Ulcer                   | Minimal                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 539

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 0/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000554

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Marked

\* Thyroid Gland

Follicular Cel

Hypertrophy

Mild

---

**Experiment Number:** 20614 - 01  
**Test Type:** CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Perfluorooctanoic Acid  
**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018  
**Time Report Requested:** 12:58:26  
**First Dose M/F:** 10/27/08 / 10/28/08  
**Lab:** BAT

**ANIMAL ID:** 540

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 624

**DOSE:** 0/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000555

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Glandular	* Trachea	* Urinary Bladder
* Uterus			

**OBSERVATIONS**

* Bone Marrow		Hyperplasia	Moderate
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal
	Hepatocyte	Hypertrophy	Mild
	Hepatocyte	Single Cell Death	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Mesenteric		Atrophy	Lymphoid, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Spleen	Lymph Follic	Atrophy	Minimal
		Extramedullary Hematopoiesis	Mild
		Pigment	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Marked
	Submucosa	Inflammation	Chronic Active, Mild
	[ Hyperplasia TGLs = 2 - 15 ]		
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Moderate

**PRIMARY CAUSE OF DEATH** - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 542

TRT#: 10

SEX: Female

DAY ON TEST: 574

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000557

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                          |                           |                          |
|--------------------------|--------------------------|---------------------------|--------------------------|
| Blood Vessel             | * Bone                   | * Brain                   | * Clitoral Gland         |
| * Esophagus              | * Eye                    | * Harderian Gland         | * Heart                  |
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Ileum |
| * Islets, Pancreatic     | * Mammary Gland          | * Nose                    | * Parathyroid Gland      |
| * Pituitary Gland        | * Salivary Glands        | * Skin                    | * Stomach, Glandular     |
| * Thyroid Gland          | * Trachea                |                           |                          |

OBSERVATIONS

- |                             |  |                                 |                       |
|-----------------------------|--|---------------------------------|-----------------------|
| * Adrenal Cortex            |  | Degeneration                    | Cystic, Minimal       |
| * Adrenal Medulla           |  | Hyperplasia                     | Minimal               |
| * Bone Marrow               |  | Hyperplasia                     | Moderate              |
| * Intestine Small, Duodenum |  | Adenocarcinoma                  | Metastatic (Pancreas) |
| * Intestine Small, Jejunum  |  | Adenocarcinoma                  | Metastatic (Pancreas) |
| * Kidney                    |  | Adenocarcinoma                  | Metastatic (Pancreas) |
|                             |  | Calculus Micro Observation Only | Minimal               |
|                             | Papilla, Urothelium                      | Hyperplasia                     | Mild                  |
|                             |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver                     |  | Adenocarcinoma                  | Metastatic (Pancreas) |
|                             | Bile Duct                                | Cyst                            |                       |
|                             | Hepatocyte                               | Cytoplasmic Alteration          | Minimal               |
|                             |  | Extramedullary Hematopoiesis    | Minimal               |
|                             | Bile Duct                                | Hyperplasia                     | Mild                  |
|                             | Hepatocyte                               | Hypertrophy                     | Minimal               |
|                             | Hepatocyte                               | Increased Mitoses               | Minimal               |
|                             |  | Pigment                         | Minimal               |
|                             | Hepatocyte                               | Single Cell Death               | Mild                  |
| * Lung                      | Alveolus                                 | Infiltration Cellular           | Histiocyte, Mild      |
|                             | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                                 |                       |
| * Lymph Node, Mandibular    |  | Atrophy                         | Lymphoid, Mild        |
| * Lymph Node, Mesenteric    |  | Atrophy                         | Lymphoid, Minimal     |
| * Ovary                     |  | Adenocarcinoma                  | Metastatic (Pancreas) |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 542

TRT#: 10

SEX: Female

DAY ON TEST: 574

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000557

ORGAN AND ACCOUNTABLE SITE STATUS

* Pancreas	Duct	Atrophy Cyst Adenocarcinoma	Mild
[ Adenocarcinoma TGLs = 2 - 14 ]			
* Spleen	Lymph Follic	Atrophy Pigment	Moderate Moderate
* Stomach, Forestomach	Epithelium	Adenocarcinoma Hyperplasia	Metastatic (Pancreas) Mild
* Thymus		Atrophy	Marked
* Urinary Bladder		Adenocarcinoma	Metastatic (Pancreas)
* Uterus	Endometrium	Adenocarcinoma Hyperplasia	Metastatic (Pancreas) Cystic, Mild

PRIMARY CAUSE OF DEATH - Pancreas Duct Adenocarcinoma



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 543

TRT#: 10

SEX: Female

DAY ON TEST: 746

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000558

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Brain                     |
| * Clitoral Gland         | * Esophagus                | * Eye                     | * Harderian Gland           |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    | * Pancreas                  |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                    | * Spleen                    |
| * Trachea                | * Urinary Bladder          |                           |                             |

OBSERVATIONS

- |                  |  |                        |                       |
|------------------|--|------------------------|-----------------------|
| * Adrenal Cortex |  | Hypertrophy            | Moderate              |
| * Bone Marrow    |  | Hyperplasia            | Mild                  |
| * Heart          |  | Cardiomyopathy         | Minimal               |
| * Kidney         | Pelvis                                   | Dilation               | Mild                  |
|                  | Renal Tubule                             | Dilation               | Moderate              |
|                  | Papilla, Urothelium                      | Hyperplasia            | Minimal               |
|                  |  | Nephropathy            | Chronicprogr, Minimal |
|                  | [ Dilation TGLs = 4 - 6 ]                |                        |                       |
| * Liver          |  | Adenocarcinoma         | Metastatic (Uterus)   |
|                  | Bile Duct                                | Cyst                   |                       |
|                  | Hepatocyte                               | Cytoplasmic Alteration | Mild                  |
|                  | Oval Cell                                | Hyperplasia            | Minimal               |
|                  | Bile Duct                                | Hyperplasia            | Mild                  |
|                  | Hepatocyte                               | Hypertrophy            | Marked                |
|                  | Hepatocyte                               | Increased Mitoses      | Moderate              |
|                  |  | Necrosis               | Marked                |
|                  |  | Pigment                | Minimal               |
|                  | [ Adenocarcinoma TGLs = 1 - 14 ]         |                        |                       |
|                  | [ Necrosis TGLs = 2 - 3 ]                |                        |                       |
| * Lung           | Alveolus                                 | Infiltration Cellular  | Histiocyte, Moderate  |
|                  | [ Infiltration Cellular TGLs = 3 - 4+5 ] |                        |                       |
| * Ovary          |  | Atrophy                | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 543

TRT#: 10

SEX: Female

DAY ON TEST: 746

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000558

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pituitary Gland	Pars Distalis	Cyst Hyperplasia	Moderate
* Stomach, Forestomach	Epithelium	Hyperplasia	Moderate
	Submucosa	Inflammation	Chronic Active, Moderate
* Stomach, Glandular	Submucosa	Inflammation	Chronic Active, Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Adenocarcinoma	
	Endometrium	Hyperplasia	Cystic, Minimal

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 544

TRT#: 10

SEX: Female

DAY ON TEST: 746

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000559

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Glandular        | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

OBSERVATIONS

- |                        |  |                        |                          |
|------------------------|--|------------------------|--------------------------|
| * Eye                  | Retina                                   | Degeneration           | Moderate                 |
| * Kidney               | Papilla, Urothelium                      | Hyperplasia            | Minimal                  |
|                        |  | Nephropathy            | Chronicprogr, Minimal    |
| * Liver                | Hepatocyte                               | Cytoplasmic Alteration | Minimal                  |
|                        | Oval Cell                                | Hyperplasia            | Minimal                  |
|                        | Bile Duct                                | Hyperplasia            | Minimal                  |
|                        | Hepatocyte                               | Hypertrophy            | Minimal                  |
|                        | Hepatocyte                               | Increased Mitoses      | Mild                     |
|                        |  | Pigment                | Mild                     |
| * Lung                 | Hepatocyte                               | Single Cell Death      | Minimal                  |
|                        | Alveolus                                 | Infiltration Cellular  | Histiocyte, Moderate     |
|                        |  | Inflammation           | Chronic Active, Minimal  |
|                        | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                        |                          |
| * Mammary Gland        |  | Hyperplasia            | Mild                     |
| * Pituitary Gland      | Pars Distalis                            | Hyperplasia            | Minimal                  |
| * Spleen               |  | Pigment                | Mild                     |
| * Stomach, Forestomach | Epithelium                               | Hyperplasia            | Mild                     |
|                        | Submucosa                                | Inflammation           | Chronic Active, Moderate |
| * Thymus               |  | Atrophy                | Moderate                 |
| * Thyroid Gland        | C Cell                                   | Hyperplasia            | Minimal                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 545

TRT#: 10

SEX: Female

DAY ON TEST: 683

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000560

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla [ Pheochromocytoma Benign TGLs = 1 - 14 ] Pheochromocytoma Benign
- \* Kidney Papilla, Urothelium Hyperplasia Minimal
- Renal Tubule Mineral Minimal
- Nephropathy Chronicprogr, Minimal
- \* Liver Basophilic Focus
- Hepatocyte Cytoplasmic Alteration Moderate
- Hepatocyte Hypertrophy Mild
- Pigment Moderate
- \* Lung Hepatocyte Single Cell Death Mild
- Alveolus Infiltration Cellular Histocyte, Minimal
- [ Infiltration Cellular TGLs = 2 - 4 ]
- \* Mammary Gland Hyperplasia Mild
- \* Ovary Cyst
- \* Spleen Pigment Moderate
- \* Thymus Atrophy Marked
- \* Thyroid Gland C Cell Adenoma

PRIMARY CAUSE OF DEATH - Adrenal Medulla Pheochromocytoma Benign

CONTRIBUTORY CAUSE OF DEATH - Liver Hepatocyte Single Cell Death

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 546

TRT#: 10

SEX: Female

DAY ON TEST: 589

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000561

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Nose                     | * Pancreas                | * Salivary Glands           | * Skin                   |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | * Uterus                  |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                              |                                    |
|-------------------|--|------------------------------|------------------------------------|
| * Kidney          |  | Nephropathy                  | Chronicprogr, Mild                 |
| * Liver           | Hepatocyte                               | Cytoplasmic Alteration       | Mild                               |
|                   |  | Eosinophilic Focus           |                                    |
|                   | Bile Duct                                | Hyperplasia                  | Minimal                            |
|                   | Hepatocyte                               | Hypertrophy                  | Mild                               |
|                   |  | Pigment                      | Mild                               |
| * Lung            | Alveolus                                 | Infiltration Cellular        | Histiocyte, Moderate               |
|                   |  | Inflammation                 | Multifocal, Granulomatous, Minimal |
|                   | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                              |                                    |
| * Mammary Gland   |  | Hyperplasia                  | Minimal                            |
| * Ovary           |  | Atrophy                      | Minimal                            |
| * Pituitary Gland | Pars Distalis                            | Adenoma                      |                                    |
|                   | [ Adenoma TGLs = 1 - 14 ]                |                              |                                    |
| * Spleen          | Lymph Follic                             | Atrophy                      | Moderate                           |
|                   |  | Extramedullary Hematopoiesis | Moderate                           |
| * Thymus          |  | Atrophy                      | Moderate                           |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 547

TRT#: 10

SEX: Female

DAY ON TEST: 617

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000562

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Skin
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pituitary Gland
- \* Trachea
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Cortex
  - Hypertrophy
  - Necrosis
- Blood Vessel
  - Mineral
- \* Bone Marrow
  - Hyperplasia
- \* Heart
  - Cardiomyopathy
  - Mineral
- \* Kidney
  - Papilla, Urothelium
    - Hyperplasia
  - Renal Tubule
    - Inflammation
  - Renal Tubule
    - Mineral
    - Nephropathy
- \* Liver
  - Hepatocyte
    - Cytoplasmic Alteration
  - Hepatocyte
    - Hypertrophy
    - Inflammation
    - Pigment
- \* Lung
  - Alveolus
    - Infiltration Cellular
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- \* Lymph Node, Mesenteric
  - Atrophy
- \* Nose
  - Inflammation
- \* Ovary
  - Atrophy
- \* Spleen
  - Lymph Follic
    - Atrophy
- \* Stomach, Forestomach
  - Epithelium
    - Hyperplasia
- \* Stomach, Glandular
  - Submucosa
    - Mineral
- \* Thymus
  - Atrophy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 547

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 617

**DOSE:** 300/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000562

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Uterus

Endometrium

Hyperplasia

Cystic, Minimal

Endometrium

Metaplasia

Squamous, Minimal

---

PRIMARY CAUSE OF DEATH

- Kidney Renal Tubule Inflammation

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Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 548

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000563

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Brain                     | * Clitoral Gland         |
| * Esophagus                | * Eye                     | * Harderian Gland           | * Heart                  |
| * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Glandular     |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |                          |  |                                 |                         |
|--------------------------|--|---------------------------------|-------------------------|
| * Adrenal Cortex         |  | Leukemia Mononuclear            |                         |
| * Adrenal Medulla        |  | Hyperplasia                     | Mild                    |
| * Bone Marrow            |  | Hyperplasia                     | Moderate                |
| * Intestine Large, Colon |  | Parasite Metazoan               |                         |
| * Kidney                 |  | Calculus Micro Observation Only | Minimal                 |
|                          | Papilla, Urothelium                      | Hyperplasia                     | Moderate                |
|                          |  | Nephropathy                     | Chronicprogr, Minimal   |
| * Liver                  | Hepatocyte                               | Cytoplasmic Alteration          | Mild                    |
|                          | Bile Duct                                | Hyperplasia                     | Minimal                 |
|                          | Hepatocyte                               | Hypertrophy                     | Mild                    |
|                          | Hepatocyte                               | Increased Mitoses               | Minimal                 |
|                          |  | Leukemia Mononuclear            |                         |
|                          |  | Pigment                         | Minimal                 |
| * Lung                   | Alveolus                                 | Infiltration Cellular           | Histiocyte, Moderate    |
|                          |  | Inflammation                    | Chronic Active, Minimal |
|                          | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                                 |                         |
| * Ovary                  |  | Atrophy                         | Minimal                 |
| * Spleen                 |  | Leukemia Mononuclear            |                         |
|                          | [ Leukemia Mononuclear TGLs = 1 - 14 ]   |                                 |                         |
| * Stomach, Forestomach   | Muscularis                               | Degeneration                    | Minimal                 |
| * Thymus                 |  | Atrophy                         | Moderate                |
| * Uterus                 | Endometrium                              | Metaplasia                      | Squamous, Minimal       |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 549

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000564

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Trachea	* Urinary Bladder	

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Bone Marrow		Hyperplasia	Minimal
* Islets, Pancreatic		Adenoma	
[ Adenoma TGLs = 1 - 14 ]			
* Kidney		Calculus Micro Observation Only	Mild
	Papilla, Urothelium	Hyperplasia	Mild
		Nephropathy	Chronicprogr, Moderate
* Liver		Clear Cell Focus	
	Hepatocyte	Cytoplasmic Alteration	Moderate
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Moderate
		Pigment	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2 - 9 ]			
* Spleen		Extramedullary Hematopoiesis	Minimal
		Pigment	Mild
* Thymus		Atrophy	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 550

TRT#: 10

SEX: Female

DAY ON TEST: 673

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000565

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mandibular | * Mammary Gland            |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |

OBSERVATIONS

- |                          |   |                         |                                    |
|--------------------------|---|-------------------------|------------------------------------|
| * Bone Marrow            |   | Hyperplasia             | Moderate                           |
| * Kidney                 | Papilla, Urothelium                       | Hyperplasia             | Minimal                            |
|                          |   | Nephropathy             | Chronicprogr, Minimal              |
| * Lung                   | Alveolus                                  | Infiltration Cellular   | Histiocyte, Minimal                |
|                          |   | Inflammation            | Multifocal, Granulomatous, Minimal |
| * Lymph Node, Mesenteric |   | Atrophy                 | Lymphoid, Minimal                  |
| Oral Mucosa              |   | Squamous Cell Carcinoma |                                    |
|                          | [ Squamous Cell Carcinoma TGLs = 1 - 14 ] |                         |                                    |
| * Ovary                  |   | Atrophy                 | Marked                             |
|                          |   | Cyst                    |                                    |
| * Spleen                 | Lymph Follic                              | Atrophy                 | Marked                             |
|                          |   | Pigment                 | Moderate                           |
| * Thymus                 |   | Atrophy                 | Marked                             |

PRIMARY CAUSE OF DEATH - Oral Mucosa Squamous Cell Carcinoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 551

TRT#: 10

SEX: Female

DAY ON TEST: 472

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000566

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Mammary Gland            |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

OBSERVATIONS

- |                          |                     |                              |                   |
|--------------------------|---------------------|------------------------------|-------------------|
| * Bone Marrow            |                     | Hyperplasia                  | Mild              |
| * Kidney                 | Pelvis              | Hemorrhage                   | Minimal           |
|                          | Papilla, Urothelium | Hyperplasia                  | Minimal           |
|                          | Renal Tubule        | Mineral                      | Moderate          |
|                          | Renal Tubule        | Necrosis                     | Moderate          |
| * Liver                  | Hepatocyte          | Cytoplasmic Alteration       | Minimal           |
|                          | Hepatocyte          | Hypertrophy                  | Mild              |
|                          | Centrilobular       | Necrosis                     | Marked            |
| * Lymph Node, Mesenteric |                     | Atrophy                      | Lymphoid, Minimal |
| * Ovary                  |                     | Cyst                         |                   |
| * Pituitary Gland        |                     | Necrosis                     | Moderate          |
| * Spleen                 | Lymph Follic        | Atrophy                      | Mild              |
|                          |                     | Extramedullary Hematopoiesis | Moderate          |
| * Thymus                 |                     | Atrophy                      | Marked            |
| * Thyroid Gland          | Follicular Cel      | Hypertrophy                  | Moderate          |
| * Uterus                 | Endometrium         | Metaplasia                   | Squamous, Minimal |

PRIMARY CAUSE OF DEATH - Liver Centrilobular Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 552

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000567

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Bone
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- \* Adrenal Medulla
  - Hyperplasia
  - Pheochromocytoma Malignant
- \* Clitoral Gland
  - Inflammation

[ Inflammation TGLs = 1 - 13 ]
- \* Heart
  - Cardiomyopathy

Note: Malignant cell mass from pheochromocytoma is present within the right ventricle.
- \* Intestine Large, Colon
  - Parasite Metazoan
- \* Kidney
  - Papilla, Urothelium
  - Papilla
  - Hyperplasia
  - Necrosis
  - Nephropathy
- \* Liver
  - Hepatocyte
  - Bile Duct
  - Hepatocyte
  - Cytoplasmic Alteration
  - Hyperplasia
  - Hypertrophy
  - Pigment
- \* Lung
  - Hepatocyte
  - Alveolus
  - Single Cell Death
  - Infiltration Cellular
  - Inflammation
  - Pheochromocytoma Malignant

[ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Mammary Gland
  - Hyperplasia

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 552

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 300/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000567

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Ovary		Atrophy	Minimal
		Cyst	
* Spleen		Extramedullary Hematopoiesis	Mild
		Pigment	Minimal
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 553

TRT#: 10

SEX: Female

DAY ON TEST: 681

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000568

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow Hyperplasia Mild
- \* Kidney Papilla, Urothelium Hyperplasia Moderate
- \* Kidney Nephropathy Chronicprogr, Mild
- \* Liver Hepatocyte Cytoplasmic Alteration Mild
- \* Liver Bile Duct Hyperplasia Minimal
- \* Liver Hepatocyte Hypertrophy Mild
- \* Liver Hepatocyte Single Cell Death Minimal
- \* Lung Alveolus Infiltration Cellular Inflammation Histiocyte, Mild
- \* Lung [ Infiltration Cellular TGLs = 1 - 4+5 ] Multifocal, Granulomatous, Minimal
- \* Mammary Gland Fibroadenoma
- \* Mammary Gland [ Fibroadenoma TGLs = 2 - 14 ]
- \* Ovary Atrophy Mild
- \* Ovary Cyst
- \* Pancreas Acinus Hyperplasia Marked
- \* Spleen Extramedullary Hematopoiesis Moderate
- \* Spleen Pigment Minimal
- \* Thymus Atrophy Moderate
- \* Uterus Endometrium Hyperplasia Cystic, Minimal
- \* Uterus Endometrium Metaplasia Squamous, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 554

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000569

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Glandular
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Thyroid Gland

MISSING

- \* Thymus

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Skin
- Degeneration
- Hyperplasia
- Parasite Metazoan
- Calculus Micro Observation Only
- Papilla, Urothelium
- Papilla
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 3 - 4+5 ]
- [ Fibroadenoma TGLs = 2 - 15 ]
- [ Fibrosarcoma TGLs = 1 - 14 ]
- Nephropathy
- Cytoplasmic Alteration
- Hypertrophy
- Pigment
- Single Cell Death
- Infiltration Cellular
- Inflammation
- Fibroadenoma
- Atrophy
- Cyst
- Fibrosarcoma
- Cystic, Minimal
- Moderate
- Mild
- Moderate
- Moderate
- Mild
- Chronicprogr, Minimal
- Moderate
- Mild
- Minimal
- Minimal
- Histiocyte, Moderate
- Chronic Active, Mild
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 554

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 745

**DOSE:** 300/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000569

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Spleen		Extramedullary Hematopoiesis	Mild
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
	Submucosa	Inflammation	Chronic Active, Moderate
		Ulcer	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

---



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 555

TRT#: 10

SEX: Female

DAY ON TEST: 624

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000570

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Mammary Gland
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Thyroid Gland
- \* Trachea
- \* Urinary Bladder
- \* Uterus

OBSERVATIONS

- \* Bone Marrow Hyperplasia Moderate
- \* Kidney Papilla, Urothelium Hyperplasia Mild
- Papilla Necrosis Mild
- Nephropathy Chronicprogr, Mild
- \* Liver Basophilic Focus
- Clear Cell Focus
- Hepatocyte Cytoplasmic Alteration Mild
- Hepatocellular Adenoma
- Bile Duct Hyperplasia Minimal
- Hepatocyte Hypertrophy Marked
- Hepatocyte Single Cell Death Minimal
- [ Hepatocellular Adenoma TGLs = 2 - 14 ]
- \* Lung Alveolus Infiltration Cellular Histiocyte, Mild
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- \* Ovary Atrophy Mild
- Cyst
- \* Spleen Extramedullary Hematopoiesis Minimal
- \* Stomach, Forestomach Epithelium Hyperplasia Mild
- Submucosa Inflammation Chronic Active, Moderate
- Ulcer Moderate
- \* Stomach, Glandular Submucosa Inflammation Chronic Active, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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ANIMAL ID: 555

TRT#: 10

SEX: Female

DAY ON TEST: 624

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000570

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thymus

Atrophy

Moderate

---

PRIMARY CAUSE OF DEATH

- Kidney Papilla Necrosis

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 556

TRT#: 10

SEX: Female

DAY ON TEST: 624

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000571

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow
  - \* Kidney
  - \* Liver
  - \* Lung
  - \* Mammary Gland
  - \* Ovary
  - \* Spleen
  - \* Thymus
  - \* Thyroid Gland
  - \* Uterus
- [ Fibroadenoma TGLs = 1 - 14 ]
- Papilla, Urothelium
  - Hepatocyte
  - Bile Duct
  - Hepatocyte
  - Hepatocyte
  - Hepatocyte
  - Alveolus
  - Follicular Cel
  - Endometrium
- Hyperplasia
  - Hyperplasia
  - Infarct
  - Nephropathy
  - Cytoplasmic Alteration
  - Hyperplasia
  - Hypertrophy
  - Increased Mitoses
  - Pigment
  - Single Cell Death
  - Infiltration Cellular
  - Fibroadenoma
  - Atrophy
  - Extramedullary Hematopoiesis
  - Atrophy
  - Hypertrophy
  - Metaplasia
  - Polyp Stromal
- Moderate
  - Moderate
  - Minimal
  - Chronicprogr, Mild
  - Mild
  - Minimal
  - Minimal
  - Minimal
  - Minimal
  - Mild
  - Histiocyte, Minimal
  - Mild
  - Moderate
  - Moderate
  - Minimal
  - Squamous, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 557

TRT#: 10

SEX: Female

DAY ON TEST: 454

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000572

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Pancreas
- \* Parathyroid Gland
- \* Skin
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Mammary Gland
- \* Pituitary Gland
- \* Thyroid Gland
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Nose
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Kidney
    - Papilla, Urothelium
    - Papilla
  - \* Liver
    - Hepatocyte
    - Bile Duct
    - Hepatocyte
  - \* Lung
    - Hepatocyte
    - Alveolus
  - \* Lymph Node, Mandibular
  - \* Lymph Node, Mesenteric
  - \* Ovary
  - \* Spleen
    - Lymph Follic
  - \* Stomach, Forestomach
    - Submucosa
  - \* Thymus
- Hyperplasia
  - Necrosis
  - Nephropathy
  - Cytoplasmic Alteration
  - Hyperplasia
  - Hypertrophy
  - Necrosis
  - Pigment
  - Single Cell Death
  - Infiltration Cellular
  - Atrophy
  - Atrophy
  - Atrophy
  - Atrophy
  - Atrophy
  - Pigment
  - Inflammation
  - Ulcer
  - Atrophy
- Mild
  - Moderate
  - Chronicprogr, Moderate
  - Mild
  - Minimal
  - Moderate
  - Mild
  - Minimal
  - Minimal
  - Histiocyte, Mild
  - Lymphoid, Moderate
  - Lymphoid, Minimal
  - Mild
  - Mild
  - Mild
  - Chronic Active, Minimal
  - Minimal
  - Moderate

PRIMARY CAUSE OF DEATH - Liver Necrosis  
 CONTRIBUTORY CAUSE OF DEATH - Kidney Papilla Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 558

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000573

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Brain
- \* Clitoral Gland
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Parathyroid Gland
- \* Skin
- \* Stomach, Forestomach
- \* Trachea
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Thyroid Gland

OBSERVATIONS

- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Spleen
- \* Thymus
- \* Uterus
- Papilla, Urothelium
- Papilla
- Hepatocyte
- Bile Duct
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 1 - 4+5 ]
- Endometrium
- Endometrium
- Hyperplasia
- Hyperplasia
- Necrosis
- Nephropathy
- Clear Cell Focus
- Cytoplasmic Alteration
- Hyperplasia
- Hypertrophy
- Inflammation
- Pigment
- Infiltration Cellular
- Hyperplasia
- Atrophy
- Cyst
- Extramedullary Hematopoiesis
- Atrophy
- Hyperplasia
- Metaplasia
- Polyp Stromal
- Moderate
- Mild
- Mild
- Chronicprogr, Minimal
- Mild
- Minimal
- Mild
- Focal, Minimal
- Mild
- Histiocyte, Mild
- Minimal
- Moderate
- Minimal
- Marked
- Cystic, Minimal
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 559

TRT#: 10

SEX: Female

DAY ON TEST: 718

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000574

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mesenteric	* Nose	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Bone Marrow		Hyperplasia	Moderate
* Kidney		Calculus Micro Observation Only	Mild
	Papilla, Urothelium	Hyperplasia	Mild
		Nephropathy	Chronicprogr, Minimal
		Thrombus	Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Hepatocyte	Hypertrophy	Mild
		Pigment	Minimal
	Hepatocyte	Single Cell Death	Mild
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 3 - 4+5 ]		
* Lymph Node, Mandibular		Atrophy	Lymphoid, Minimal
* Mammary Gland		Hyperplasia	Minimal
* Ovary		Cyst	
* Pancreas	Acinus	Carcinoma	
	[ Carcinoma TGLs = 2 - 15 ]		
* Spleen	Lymph Follic	Atrophy	Mild
		Extramedullary Hematopoiesis	Moderate
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
* Stomach, Glandular		Inflammation	Minimal
* Thymus		Atrophy	Marked
* Uterus		Dilation	Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

ANIMAL ID: 559

TRT#: 10

SEX: Female

DAY ON TEST: 718

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000574

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Endometrium

Hyperplasia

Cystic, Marked

[ Dilation TGLs = 1 - 14 ]

---

PRIMARY CAUSE OF DEATH

- Pancreas Acinus Carcinoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 560

TRT#: 10

SEX: Female

DAY ON TEST: 746

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000575

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Bone Marrow             | * Brain                     |
| * Clitoral Gland         | * Esophagus                | * Eye                     | * Harderian Gland           |
| * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    | * Pancreas                  |
| * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         | * Skin                      |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

OBSERVATIONS

- |                          |  |                              |                       |
|--------------------------|--|------------------------------|-----------------------|
| * Adrenal Cortex         |  | Degeneration                 | Cystic, Minimal       |
|                          |  | Hypertrophy                  | Mild                  |
| * Adrenal Medulla        |  | Hyperplasia                  | Minimal               |
| * Intestine Large, Colon |  | Parasite Metazoan            |                       |
| * Kidney                 | Renal Tubule                               | Adenoma                      |                       |
|                          | Papilla, Urothelium                        | Hyperplasia                  | Minimal               |
|                          | Renal Tubule                               | Mineral                      | Minimal               |
|                          |  | Nephropathy                  | Chronicprogr, Minimal |
|                          | [ Adenoma TGLs = 2 - 15 ]                  |                              |                       |
| * Liver                  | Hepatocyte                                 | Cytoplasmic Alteration       | Mild                  |
|                          |  | Hepatocellular Carcinoma     |                       |
|                          | Bile Duct                                  | Hyperplasia                  | Minimal               |
|                          | Hepatocyte                                 | Hypertrophy                  | Moderate              |
|                          |  | Inflammation                 | Focal, Minimal        |
|                          |  | Pigment                      | Minimal               |
|                          | Hepatocyte                                 | Single Cell Death            | Minimal               |
|                          | [ Hepatocellular Carcinoma TGLs = 1 - 14 ] |                              |                       |
| * Lung                   | Alveolus                                   | Infiltration Cellular        | Histiocyte, Minimal   |
|                          | [ Infiltration Cellular TGLs = 3 - 4 ]     |                              |                       |
| * Ovary                  |  | Atrophy                      | Mild                  |
| * Spleen                 |  | Extramedullary Hematopoiesis | Minimal               |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 560

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 300/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000575

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

\* Uterus

Endometrium

Pigment

Atrophy

Hyperplasia

Mild

Moderate

Cystic, Minimal

---

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 561

TRT#: 10

SEX: Female

DAY ON TEST: 673

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000576

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Glandular	* Trachea
* Urinary Bladder	* Uterus		

OBSERVATIONS

* Bone Marrow		Hyperplasia	Mild
* Kidney	Papilla	Necrosis	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Moderate
		Hepatodiaphragmatic Nodule	
	Oval Cell	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Moderate
		Necrosis	Mild
		Pigment	Moderate
	Hepatocyte	Single Cell Death	Minimal
	[ Hepatodiaphragmatic Nodule TGLs = 3 - 16 ]		
	[ Necrosis TGLs = 1 - 14 ]		
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 4 - 4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 2 - 15 ]		
* Spleen		Extramedullary Hematopoiesis	Mild
		Pigment	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Moderate
	Submucosa	Inflammation	Chronic Active, Mild
* Thymus		Atrophy	Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

---

**ANIMAL ID:** 561

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 673

**DOSE:** 300/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000576

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

Follicular Cel

Hypertrophy

Mild

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 563

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000578

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Trachea                 | * Urinary Bladder           |                          |

OBSERVATIONS

- |                 |  |                                 |                         |
|-----------------|--|---------------------------------|-------------------------|
| * Kidney        |  | Calculus Micro Observation Only | Minimal                 |
|                 | Papilla, Urothelium                      | Hyperplasia                     | Minimal                 |
|                 |  | Nephropathy                     | Chronicprogr, Minimal   |
| * Liver         |  | Cholangioma                     |                         |
|                 |  | Clear Cell Focus                |                         |
|                 | Hepatocyte                               | Cytoplasmic Alteration          | Mild                    |
|                 | Bile Duct                                | Hyperplasia                     | Mild                    |
|                 | Hepatocyte                               | Hypertrophy                     | Mild                    |
|                 |  | Pigment                         | Minimal                 |
|                 | [ Cholangioma TGLs = 1 - 14 ]            |                                 |                         |
| * Lung          | Alveolus                                 | Infiltration Cellular           | Histiocyte, Marked      |
|                 |  | Inflammation                    | Chronic Active, Minimal |
|                 | [ Infiltration Cellular TGLs = 2 - 4+5 ] |                                 |                         |
| * Ovary         |  | Atrophy                         | Mild                    |
|                 |  | Cyst                            |                         |
| * Spleen        |  | Pigment                         | Minimal                 |
| * Thymus        |  | Atrophy                         | Marked                  |
| * Thyroid Gland | Follicular Cel                           | Hypertrophy                     | Mild                    |
| * Uterus        | Endometrium                              | Hyperplasia                     | Cystic, Mild            |
|                 | Endometrium                              | Metaplasia                      | Squamous, Moderate      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 564

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000579

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pancreas
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- Papilla, Urothelium
- Hepatocyte
- Bile Duct
- Hepatocyte
- Hepatocyte
- [ Hepatocellular Adenoma TGLs = 1 - 14 ]
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- Acinus
- C Cell
- Parasite Metazoan
- Hyperplasia
- Nephropathy
- Cytoplasmic Alteration
- Degeneration
- Hepatocellular Adenoma
- Hyperplasia
- Hypertrophy
- Pigment
- Single Cell Death
- Infiltration Cellular
- Hyperplasia
- Cyst
- Atrophy
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Minimal
- Chronicprogr, Minimal
- Mild
- Cystic, Minimal
- Minimal
- Mild
- Mild
- Minimal
- Histiocyte, Moderate
- Mild
- Minimal
- Mild
- Mild
- Marked
- Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 566

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000581

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Papilla, Urothelium
- Hepatocyte
- Bile Duct
- Hepatocyte
- Hepatocyte
- Alveolus
- Pars Distalis
- C Cell
- Endometrium
- Endometrium
- Parasite Metazoan
- Hyperplasia
- Nephropathy
- Cytoplasmic Alteration
- Hyperplasia
- Hypertrophy
- Inflammation
- Pigment
- Single Cell Death
- Infiltration Cellular
- Inflammation
- Atrophy
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Hyperplasia
- Hyperplasia
- Metaplasia
- Mild
- Chronicprogr, Minimal
- Mild
- Mild
- Mild
- Focal, Minimal
- Mild
- Minimal
- Histiocyte, Mild
- Chronic Active, Minimal
- Minimal
- Moderate
- Minimal
- Minimal
- Moderate
- Moderate
- Moderate
- Cystic, Minimal
- Squamous, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 567

TRT#: 10

SEX: Female

DAY ON TEST: 673

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000582

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Nose                    | * Ovary                     | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Glandular     | * Trachea                  |
| * Urinary Bladder         | * Uterus                    |                          |                            |

OBSERVATIONS

- |                        |                                  |                                 |                      |
|------------------------|----------------------------------|---------------------------------|----------------------|
| * Bone Marrow          |                                  | Hyperplasia                     | Moderate             |
| * Kidney               |                                  | Calculus Micro Observation Only | Moderate             |
|                        | Papilla, Urothelium              | Hyperplasia                     | Moderate             |
|                        | Papilla                          | Necrosis                        | Mild                 |
|                        |                                  | Nephropathy                     | Chronicprogr, Mild   |
| * Liver                | Hepatocyte                       | Cytoplasmic Alteration          | Mild                 |
|                        | Hepatocyte                       | Hypertrophy                     | Marked               |
|                        |                                  | Pigment                         | Minimal              |
|                        | Hepatocyte                       | Single Cell Death               | Minimal              |
| * Mammary Gland        |                                  | Adenocarcinoma                  |                      |
|                        |                                  | Fibroadenoma                    |                      |
|                        | [ Adenocarcinoma TGLs = 2 - 15 ] |                                 |                      |
|                        | [ Fibroadenoma TGLs = 1 - 14 ]   |                                 |                      |
| * Pancreas             | Acinus                           | Adenoma                         |                      |
|                        | [ Adenoma TGLs = 3 - 16 ]        |                                 |                      |
| * Spleen               |                                  | Extramedullary Hematopoiesis    | Mild                 |
| * Stomach, Forestomach | Epithelium                       | Hyperplasia                     | Moderate             |
|                        | Submucosa                        | Inflammation                    | Chronic Active, Mild |
|                        |                                  | Ulcer                           | Mild                 |
| * Thymus               |                                  | Atrophy                         | Mild                 |
| * Thyroid Gland        | Follicular Cel                   | Hypertrophy                     | Mild                 |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

---

**ANIMAL ID:** 567

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 673

**DOSE:** 300/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000582

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

---



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 568

TRT#: 10

SEX: Female

DAY ON TEST: 647

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000583

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Pancreas
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Nose
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Ovary
- \* Skin
- \* Urinary Bladder

MISSING

- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric

OBSERVATIONS

- \* Int Sm Jejunum
    - Note: Post-mortem intussusception present B15.
  - \* Kidney
    - Papilla, Urothelium
    - Pelvis
    - Papilla
    - [ Inflammation TGLs = 1 - 14 ]
    - [ Necrosis TGLs = 2 - 14 ]
  - \* Liver
    - Hepatocyte
    - Hepatocyte
    - Hepatocyte
  - \* Lung
    - Alveolus
  - \* Mammary Gland
    - Pars Distalis
  - \* Pituitary Gland
    - Lymph Follic
  - \* Spleen
    - Lymph Follic
  - \* Stomach, Forestomach
    - Epithelium
- |  |                                 |                       |
|--|---------------------------------|-----------------------|
|  | Calculus Micro Observation Only | Minimal               |
|  | Hyperplasia                     | Minimal               |
|  | Inflammation                    | Suppurative, Marked   |
|  | Necrosis                        | Marked                |
|  | Nephropathy                     | Chronicprogr, Minimal |
|  | Cytoplasmic Alteration          | Marked                |
|  | Hypertrophy                     | Marked                |
|  | Pigment                         | Moderate              |
|  | Single Cell Death               | Mild                  |
|  | Infiltration Cellular           | Histiocyte, Minimal   |
|  | Hyperplasia                     | Mild                  |
|  | Hyperplasia                     | Minimal               |
|  | Atrophy                         | Moderate              |
|  | Pigment                         | Moderate              |
|  | Hyperplasia                     | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

ANIMAL ID: 568

TRT#: 10

SEX: Female

DAY ON TEST: 647

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000583

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Submucosa

Inflammation

Chronic Active, Moderate

Ulcer

Moderate

Atrophy

Marked

---

\* Thymus

PRIMARY CAUSE OF DEATH

- Kidney Papilla Necrosis

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 569

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000584

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow Hyperplasia Mild
- \* Kidney Papilla, Urothelium Hyperplasia Mild
- \* Kidney Nephropathy Chronicprogr, Minimal
- \* Liver Bile Duct Cyst
- \* Liver Hepatocyte Cytoplasmic Alteration Mild
- \* Liver Bile Duct Hyperplasia Mild
- \* Liver Hepatocyte Hypertrophy Minimal
- \* Liver Hepatocyte Increased Mitoses Minimal
- \* Liver Hepatocyte Leukemia Mononuclear Pigment Minimal
- \* Liver Hepatocyte Single Cell Death Minimal
- \* Lung [ Leukemia Mononuclear TGLs = 2 - 3 ]
- \* Lung Alveolus Infiltration Cellular Histiocyte, Moderate
- \* Lung [ Infiltration Cellular TGLs = 3 - 4+5 ]
- \* Mammary Gland Adenocarcinoma
- \* Mammary Gland [ Adenocarcinoma TGLs = 1 - 14 ]
- \* Ovary Cyst
- \* Spleen Extramedullary Hematopoiesis Minimal
- \* Spleen Pigment Minimal
- \* Thymus Atrophy Moderate
- \* Thyroid Gland Follicular Cel Hypertrophy Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

**ANIMAL ID:** 569

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 745

**DOSE:** 300/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000584

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Uterus

Endometrium

Hyperplasia

Cystic, Mild

---

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 570

TRT#: 10

SEX: Female

DAY ON TEST: 690

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000585

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Nose	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Glandular
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Bone Marrow		Hyperplasia	Moderate
* Kidney		Calculus Micro Observation Only	Minimal
* Liver	Papilla, Urothelium	Hyperplasia	Minimal
	Hepatocyte	Cytoplasmic Alteration	Moderate
	Hepatocyte	Hypertrophy	Moderate
	Centrilobular	Necrosis	Mild
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Multifocal, Granulomatous, Minimal
* Lymph Node, Mandibular		Atrophy	Lymphoid, Moderate
* Lymph Node, Mesenteric		Atrophy	Lymphoid, Minimal
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2 - 14+15 ]		
* Ovary		Atrophy	Mild
* Spleen	Lymph Follic	Atrophy	Minimal
		Extramedullary Hematopoiesis	Moderate
		Pigment	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Marked
	Submucosa	Inflammation	Chronic Active, Moderate
		Ulcer	Mild
	[ Hyperplasia TGLs = 3 - 7+16 ]		
* Thymus		Atrophy	Marked

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

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**ANIMAL ID:** 570

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 690

**DOSE:** 300/1000 ppm

**DISP:** Natural Death

**HISTO:** 1000585

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

CONTRIBUTORY CAUSE OF DEATH - Liver Centrilobular Necrosis

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 572

TRT#: 10

SEX: Female

DAY ON TEST: 508

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000587

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Brain                   |
| * Clitoral Gland            | * Esophagus              | * Eye                      | * Harderian Gland         |
| * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Mammary Gland             | * Nose                   | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Skin                     | * Stomach, Glandular      |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

OBSERVATIONS

- |                          |  |                           |                          |
|--------------------------|--|---------------------------|--------------------------|
| * Adrenal Cortex         |  | Vacuolization Cytoplasmic | Mild                     |
| * Bone Marrow            |  | Hyperplasia               | Mild                     |
| * Kidney                 | Papilla, Urothelium                      | Hyperplasia               | Mild                     |
|                          | Papilla                                  | Necrosis                  | Moderate                 |
|                          |  | Nephropathy               | Chronicprogr, Moderate   |
| * Liver                  | Hepatocyte                               | Cytoplasmic Alteration    | Minimal                  |
|                          | Hepatocyte                               | Hypertrophy               | Moderate                 |
|                          | Hepatocyte                               | Single Cell Death         | Minimal                  |
| * Lung                   | Alveolus                                 | Infiltration Cellular     | Histiocyte, Moderate     |
|                          |  | Inflammation              | Chronic Active, Minimal  |
|                          | [ Infiltration Cellular TGLs = 1 - 4+5 ] |                           |                          |
| * Lymph Node, Mandibular |  | Atrophy                   | Lymphoid, Moderate       |
| * Lymph Node, Mesenteric |  | Atrophy                   | Lymphoid, Minimal        |
| * Ovary                  |  | Atrophy                   | Mild                     |
| * Spleen                 | Lymph Follic                             | Atrophy                   | Minimal                  |
|                          |  | Pigment                   | Minimal                  |
| * Stomach, Forestomach   | Epithelium                               | Hyperplasia               | Moderate                 |
|                          | Submucosa                                | Inflammation              | Chronic Active, Moderate |
| * Thymus                 |  | Atrophy                   | Moderate                 |
| * Uterus                 |  | Inflammation              | Suppurative, Mild        |

PRIMARY CAUSE OF DEATH - Kidney Papilla Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 573

TRT#: 10

SEX: Female

DAY ON TEST: 746

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000588

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Skin
- \* Urinary Bladder
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Stomach, Forestomach

OBSERVATIONS

- \* Adrenal Medulla
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Spleen
- \* Thymus
- Hyperplasia
- Hyperplasia
- Calculus Micro Observation Only
- Papilla, Urothelium
- Hyperplasia
- Infarct
- Nephropathy
- Basophilic Focus
- Hepatocyte
- Bile Duct
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- Atrophy
- Cyst
- [ Cyst TGLs = 1 - 12 ]
- Cytoplasmic Alteration
- Hyperplasia
- Extramedullary Hematopoiesis
- Pigment
- Atrophy
- Mild
- Mild
- Minimal
- Mild
- Minimal
- Chronicprogr, Minimal
- Moderate
- Mild
- Minimal
- Minimal
- Histiocyte, Minimal
- Multifocal, Granulomatous, Minimal
- Mild
- Minimal
- Moderate
- Minimal
- Minimal
- Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 573

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 300/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000588

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Moderate

\* Uterus

Endometrium

Metaplasia

Squamous, Marked

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 574

TRT#: 10

SEX: Female

DAY ON TEST: 183

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000589

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Salivary Glands
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Uterus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Pituitary Gland
- \* Thyroid Gland

MISSING

- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Thymus

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Liver
- \* Spleen
- [ Atrophy TGLs = 1 - 6 ]
- \* Stomach, Glandular
- Papilla
- Hepatocyte
- Hepatocyte
- Lymph Follic
- Mucosa
- Vacuolization Cytoplasmic
- Necrosis
- Cytoplasmic Alteration
- Hypertrophy
- Atrophy
- Pigment
- Mineral
- Mild
- Mild
- Moderate
- Moderate
- Moderate
- Mild
- Minimal

PRIMARY CAUSE OF DEATH - Kidney Papilla Necrosis

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 575

TRT#: 10

SEX: Female

DAY ON TEST: 391

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000590

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Adrenal Cortex		Vacuolization Cytoplasmic	Minimal
* Kidney	Papilla, Urothelium	Hyperplasia	Mild
		Infarct	Minimal
	Papilla	Necrosis	Moderate
		Nephropathy	Chronicprogr, Mild
* Liver	Hepatocyte	Cytoplasmic Alteration	Moderate
	Hepatocyte	Hypertrophy	Mild
		Pigment	Minimal
* Lymph Node, Mandibular		Atrophy	Lymphoid, Mild
* Ovary		Atrophy	Mild
* Spleen	Lymph Follic	Atrophy	Moderate
		Pigment	Mild
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
		Inflammation	Acute, Minimal

PRIMARY CAUSE OF DEATH - Kidney Papilla Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 576

TRT#: 10

SEX: Female

DAY ON TEST: 457

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000591

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Mammary Gland          | * Nose                     |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Stomach, Glandular        | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         | * Uterus                    |                          |                            |

OBSERVATIONS

- |                          |                     |                        |                       |
|--------------------------|---------------------|------------------------|-----------------------|
| * Bone Marrow            |                     | Atrophy                | Moderate              |
| * Kidney                 | Papilla, Urothelium | Hyperplasia            | Mild                  |
|                          | Papilla             | Necrosis               | Mild                  |
|                          |                     | Nephropathy            | Chronicprogr, Minimal |
| * Liver                  | Hepatocyte          | Cytoplasmic Alteration | Mild                  |
|                          | Hepatocyte          | Hypertrophy            | Marked                |
|                          |                     | Necrosis               | Mild                  |
|                          |                     | Pigment                | Minimal               |
|                          | Hepatocyte          | Single Cell Death      | Minimal               |
| * Lymph Node, Mandibular |                     | Atrophy                | Lymphoid, Moderate    |
| * Lymph Node, Mesenteric |                     | Atrophy                | Lymphoid, Minimal     |
| * Ovary                  |                     | Cyst                   |                       |
| * Spleen                 | Lymph Follic        | Atrophy                | Moderate              |
|                          |                     | Pigment                | Mild                  |
| * Stomach, Forestomach   | Epithelium          | Hyperplasia            | Moderate              |
|                          | Submucosa           | Inflammation           | Chronic Active, Mild  |
| * Thymus                 |                     | Atrophy                | Marked                |

[ Atrophy TGLs = 1 - 4 ]

PRIMARY CAUSE OF DEATH

- Liver Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 578

TRT#: 10

SEX: Female

DAY ON TEST: 746

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000593

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Skin
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Salivary Glands
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Ovary
- \* Spleen
- \* Thymus
- \* Thyroid Gland
- \* Uterus
- Hypertrophy
- Hyperplasia
- Calculus Micro Observation Only
- Papilla, Urothelium
- Hepatocyte
- Bile Duct
- Hepatocyte
- Alveolus
- Atrophy
- Cyst
- Pigment
- Atrophy
- Adenoma
- C Cell
- C Cell
- Follicular Cel
- Endometrium
- Nephropathy
- Cytoplasmic Alteration
- Hyperplasia
- Hypertrophy
- Pigment
- Infiltration Cellular
- Moderate
- Minimal
- Minimal
- Mild
- Chronicprogr, Minimal
- Mild
- Minimal
- Minimal
- Mild
- Histiocyte, Moderate
- Mild
- Mild
- Moderate
- Mild
- Moderate
- Marked
- Minimal
- Moderate
- Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 578

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 746

**DOSE:** 300/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000593

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Dilation TGLs = 1 - 12 ]

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 579

TRT#: 10

SEX: Female

DAY ON TEST: 634

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000594

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Trachea
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Uterus
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Glandular

OBSERVATIONS

- \* Bone Marrow
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pituitary Gland
- \* Spleen
- \* Stomach, Forestomach
- \* Thymus
- \* Thyroid Gland
- Papilla, Urothelium
- Papilla
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- [ Fibroadenoma TGLs = 1 - 14 ]
- Pars Distalis
- Epithelium
- Submucosa
- [ Hyperplasia TGLs = 3 - 7 ]
- Follicular Cel
- Hyperplasia
- Parasite Metazoan
- Hyperplasia
- Necrosis
- Nephropathy
- Cytoplasmic Alteration
- Hypertrophy
- Pigment
- Single Cell Death
- Infiltration Cellular
- Fibroadenoma
- Atrophy
- Cyst
- Hyperplasia
- Pigment
- Hyperplasia
- Inflammation
- Atrophy
- Hypertrophy
- Mild
- Minimal
- Minimal
- Mild
- Chronicprogr, Minimal
- Marked
- Marked
- Mild
- Minimal
- Histiocyte, Minimal
- Mild
- Minimal
- Mild
- Minimal
- Moderate
- Chronic Active, Mild
- Mild
- Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

---

**ANIMAL ID:** 579

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 634

**DOSE:** 300/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000594

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

---



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 580

TRT#: 10

SEX: Female

DAY ON TEST: 746

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000595

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow
  - \* Kidney
  - \* Liver
  - \* Lung
  - \* Mammary Gland
  - \* Ovary
  - \* Spleen
  - \* Thymus
  - \* Uterus
- Papilla, Urothelium  
Papilla
- Hepatocyte  
Bile Duct  
Hepatocyte
- Alveolus  
[ Infiltration Cellular TGLs = 2 - 4 ]
- [ Adenocarcinoma TGLs = 1 - 14 ]
- Endometrium
- Hyperplasia  
Hyperplasia  
Necrosis  
Nephropathy  
Basophilic Focus  
Cytoplasmic Alteration  
Hyperplasia  
Hypertrophy  
Pigment  
Infiltration Cellular
- Adenocarcinoma
- Atrophy  
Extramedullary Hematopoiesis  
Atrophy  
Hyperplasia
- Moderate  
Minimal  
Minimal  
Chronicprogr, Minimal  
Moderate  
Mild  
Minimal  
Mild  
Histocyte, Minimal  
Minimal  
Mild  
Moderate  
Cystic, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01  
 Test Type: CHRONIC  
 Route: DOSED FEED  
 Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid  
 CAS Number: 335-67-1

Date Report Requested: 07/25/2018  
 Time Report Requested: 12:58:26  
 First Dose M/F: 10/27/08 / 10/28/08  
 Lab: BAT

ANIMAL ID: 582

TRT#: 10

SEX: Female

DAY ON TEST: 695

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000597

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Glandular	* Trachea	* Urinary Bladder	* Uterus

**OBSERVATIONS**

* Islets, Pancreatic		Adenoma	
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Basophilic Focus	
	Hepatocyte	Cytoplasmic Alteration	Moderate
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Minimal
	Hepatocyte	Increased Mitoses	Minimal
	Hepatocyte	Single Cell Death	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 4 - 4+5 ]		
* Mammary Gland		Fibroadenoma	Multiple
		Hyperplasia	Moderate
	[ Fibroadenoma TGLs = 1,2 - 14+15 ]		
* Ovary		Cyst	
	[ Cyst TGLs = 3 - 12 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
* Spleen		Extramedullary Hematopoiesis	Mild
* Stomach, Forestomach	Epithelium	Hyperplasia	Moderate
	Submucosa	Inflammation	Chronic Active, Moderate
* Thymus		Atrophy	Moderate
* Thyroid Gland	Follicular Cel	Hypertrophy	Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 584

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000599

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Brain                   | * Clitoral Gland            | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mesenteric    | * Nose                   | * Ovary                    |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Stomach, Glandular        | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

**MISSING**

- \* Thymus

**OBSERVATIONS**

- |                          |  |                                 |                       |
|--------------------------|--|---------------------------------|-----------------------|
| * Bone Marrow            |  | Hyperplasia                     | Mild                  |
| * Kidney                 |  | Calculus Micro Observation Only | Moderate              |
|                          | Papilla, Urothelium                      | Hyperplasia                     | Mild                  |
|                          | Renal Tubule                             | Mineral                         | Minimal               |
|                          | Papilla                                  | Necrosis                        | Minimal               |
|                          |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver                  |  | Cholangiofibrosis               | Marked                |
|                          | Hepatocyte                               | Cytoplasmic Alteration          | Moderate              |
|                          | Hepatocyte                               | Hypertrophy                     | Marked                |
|                          | Centrilobular                            | Necrosis                        | Moderate              |
|                          |  | Pigment                         | Moderate              |
|                          | [ Cholangiofibrosis TGLs = 3 - 16 ]      |                                 |                       |
| * Lung                   | Alveolus                                 | Infiltration Cellular           | Histiocyte, Moderate  |
|                          | [ Infiltration Cellular TGLs = 4 - 4+5 ] |                                 |                       |
| * Lymph Node, Mandibular |  | Atrophy                         | Lymphoid, Minimal     |
| * Mammary Gland          |  | Adenoma                         |                       |
|                          |  | Fibroadenoma                    |                       |
|                          |  | Hyperplasia                     | Mild                  |
|                          | [ Adenoma TGLs = 2 - 15 ]                |                                 |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 584

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Natural Death

HISTO: 1000599

ORGAN AND ACCOUNTABLE SITE STATUS

[ Fibroadenoma TGLs = 1 - 14 ]

\* Spleen

Lymph Follic

Atrophy

Mild

Extramedullary Hematopoiesis

Moderate

\* Stomach, Forestomach

Epithelium

Hyperplasia

Moderate

Submucosa

Inflammation

Chronic Active, Moderate

Ulcer

Moderate

[ Hyperplasia TGLs = 5 - 7+17 ]

\* Thyroid Gland

C Cell

Hyperplasia

Mild

Follicular Cel

Hypertrophy

Mild

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 585

TRT#: 10

SEX: Female

DAY ON TEST: 393

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000600

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | Blood Vessel                | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Mammary Gland          |
| * Nose                     | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Glandular     |
| * Trachea                  | * Urinary Bladder         | * Uterus                    |                          |

OBSERVATIONS

- |                          |                          |                        |                      |
|--------------------------|--------------------------|------------------------|----------------------|
| * Kidney                 | Papilla, Urothelium      | Hyperplasia            | Minimal              |
|                          | Papilla                  | Necrosis               | Moderate             |
|                          |                          | Nephropathy            | Chronicprogr, Mild   |
| * Liver                  | Hepatocyte               | Cytoplasmic Alteration | Minimal              |
|                          | Hepatocyte               | Hypertrophy            | Mild                 |
|                          |                          | Necrosis               | Mild                 |
|                          |                          | Pigment                | Mild                 |
|                          | Hepatocyte               | Single Cell Death      | Minimal              |
| * Lymph Node, Mandibular |                          | Atrophy                | Lymphoid, Minimal    |
| * Lymph Node, Mesenteric |                          | Atrophy                | Lymphoid, Minimal    |
| * Spleen                 | Lymph Follic             | Atrophy                | Minimal              |
|                          |                          | Pigment                | Mild                 |
| * Stomach, Forestomach   | Epithelium               | Hyperplasia            | Mild                 |
|                          | Submucosa                | Inflammation           | Chronic Active, Mild |
|                          |                          | Ulcer                  | Mild                 |
| * Thymus                 |                          | Atrophy                | Moderate             |
|                          | [ Atrophy TGLs = 1 - 4 ] |                        |                      |
| * Thyroid Gland          | Follicular Cel           | Hypertrophy            | Minimal              |

PRIMARY CAUSE OF DEATH - Kidney Papilla Necrosis

CONTRIBUTORY CAUSE OF DEATH - Liver Necrosis

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 586

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000601

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pituitary Gland
- \* Salivary Glands
- \* Trachea
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Skin
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Kidney
  - Papilla, Urothelium
    - Calculus Micro Observation Only
    - Hyperplasia
    - Infarct
    - Necrosis
    - Nephropathy
  - Papilla
    - Basophilic Focus
    - Cytoplasmic Alteration
    - Hepatocellular Carcinoma
    - Hypertrophy
    - Inflammation
    - Pigment
    - Single Cell Death
- [ Infarct TGLs = 2 - 6 ]
- \* Liver
  - Hepatocyte
    - Minimal
    - Minimal
    - Moderate
    - Mild
    - Chronicprogr, Mild
  - Hepatocyte
    - Mild
    - Mild
    - Focal, Minimal
    - Marked
    - Minimal
- [ Basophilic Focus TGLs = 4 - 3 ]
- [ Hepatocellular Carcinoma TGLs = 3 - 15 ]
- \* Mammary Gland
  - Fibroadenoma
    - Fibroadenoma
- [ Fibroadenoma TGLs = 1 - 14 ]
- \* Ovary
  - Atrophy
- \* Spleen
  - Pigment
- \* Stomach, Forestomach
  - Epithelium
    - Minimal
  - Submucosa
    - Minimal
    - Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 586

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 744

**DOSE:** 300/1000 ppm

**DISP:** Terminal Sacrifice

**HISTO:** 1000601

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Minimal

\* Thyroid Gland

Follicular Cel

Hypertrophy

Minimal

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 587

TRT#: 10

SEX: Female

DAY ON TEST: 638

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000602

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow: Hyperplasia, Moderate
- \* Kidney: Papilla, Urothelium: Hyperplasia, Moderate; Renal Tubule: Mineral: Minimal; Nephropathy: Chronicprogr, Mild
- \* Liver: Hepatocyte: Cytoplasmic Alteration: Mild; Hepatocyte: Hypertrophy: Moderate; Hepatocyte: Increased Mitoses: Minimal; Hepatocyte: Inflammation: Focal, Minimal; Hepatocyte: Single Cell Death: Minimal
- \* Lung: Alveolus: Infiltration Cellular: Histocyte, Mild; [ Infiltration Cellular TGLs = 3 - 4+5 ]
- \* Mammary Gland: Adenocarcinoma: Adenocarcinoma; [ Adenocarcinoma TGLs = 1 - 14 ]
- \* Ovary: Atrophy: Minimal
- \* Pituitary Gland: Pars Distalis: Adenoma
- \* Spleen: Lymph Follic: Atrophy: Minimal; Extramedullary Hematopoiesis: Minimal; Pigment: Minimal
- \* Thymus: Atrophy: Mild
- \* Thyroid Gland: Bilateral, C Cell: Adenoma
- \* Uterus: Endometrium: Hyperplasia: Cystic, Minimal; [ Adenoma TGLs = 2 - 15 ]

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

---

**ANIMAL ID:** 587

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 638

**DOSE:** 300/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000602

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Adenocarcinoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 588

TRT#: 10

SEX: Female

DAY ON TEST: 440

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000603

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Parathyroid Gland
- \* Thyroid Gland
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Pituitary Gland
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Urinary Bladder

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- [ Nephropathy TGLs = 1 - 14 ]
- \* Liver
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Ovary
- \* Spleen
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Thymus
- Papilla, Urothelium
- Renal Tubule
- Papilla
- Bile Duct
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Epithelium
- Submucosa
- Mucosa
- Vacuolization Cytoplasmic
- Hyperplasia
- Mineral
- Necrosis
- Nephropathy
- Cyst
- Cytoplasmic Alteration
- Hypertrophy
- Pigment
- Single Cell Death
- Atrophy
- Atrophy
- Atrophy
- Atrophy
- Pigment
- Hyperplasia
- Inflammation
- Ulcer
- Mineral
- Atrophy
- Mild
- Mild
- Minimal
- Mild
- Chronicprogr, Mild
- Minimal
- Minimal
- Minimal
- Minimal
- Minimal
- Minimal
- Minimal
- Minimal
- Minimal
- Moderate
- Mild
- Chronic Active, Mild
- Mild
- Minimal
- Marked

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 20614 - 01

**Test Type:** CHRONIC

**Route:** DOSED FEED

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

**CAS Number:** 335-67-1

**Date Report Requested:** 07/25/2018

**Time Report Requested:** 12:58:26

**First Dose M/F:** 10/27/08 / 10/28/08

**Lab:** BAT

---

**ANIMAL ID:** 588

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 440

**DOSE:** 300/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000603

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Kidney Papilla Necrosis

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 589

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000604

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Nose
- \* Salivary Glands
- \* Skin
- \* Trachea
- \* Urinary Bladder
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular

OBSERVATIONS

- \* Kidney
  - Papilla, Urothelium
    - Hyperplasia
    - Nephropathy
- \* Liver
  - Clear Cell Focus
  - Cyst
  - Bile Duct
    - Cytoplasmic Alteration
  - Hepatocyte
    - Hyperplasia
    - Hypertrophy
    - Increased Mitoses
    - Pigment
  - Hepatocyte
    - Single Cell Death
- \* Lung
  - [ Cyst TGLs = 1 - 14 ]
  - Alveolus
    - Infiltration Cellular
  - [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Ovary
  - Atrophy
- \* Pituitary Gland
  - Pars Distalis
    - Adenoma
- \* Spleen
  - Extramedullary Hematopoiesis
  - Pigment
- \* Thymus
  - Atrophy
- \* Thyroid Gland
  - C Cell
    - Hyperplasia
- \* Uterus
  - Endometrium
    - Hyperplasia
    - Polyp Stromal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 590

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000605

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Uterus
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Nose
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Skin
- \* Urinary Bladder

OBSERVATIONS

- \* Heart: Cardiomyopathy (Minimal)
- \* Islets, Pancreatic: Hyperplasia (Mild)
- \* Kidney: Calculus Micro Observation Only (Minimal)
- \* Kidney: Papilla, Urothelium: Hyperplasia (Mild)
- \* Kidney: Nephropathy: Chronicprogr, Minimal
- \* Liver: Hepatocyte: Cytoplasmic Alteration (Mild)
- \* Liver: Bile Duct: Hyperplasia (Minimal)
- \* Liver: Hepatocyte: Hypertrophy (Minimal)
- \* Liver: Hepatocyte: Pigment (Minimal)
- \* Lung: Hepatocyte: Single Cell Death (Minimal)
- \* Lung: Alveolus: Infiltration Cellular (Histocyte, Moderate)
- \* Lung: [ Infiltration Cellular TGLs = 1 - 4+5 ]
- \* Mammary Gland: Hyperplasia (Moderate)
- \* Ovary: Cyst
- \* Spleen: Extramedullary Hematopoiesis (Minimal)
- \* Spleen: Pigment (Mild)
- \* Thymus: Atrophy (Moderate)
- \* Thyroid Gland: C Cell: Hyperplasia (Mild)
- \* Thyroid Gland: Follicular Cel: Hypertrophy (Mild)

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 591

TRT#: 10

SEX: Female

DAY ON TEST: 491

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000606

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Nose
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	* Uterus

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Hepatocyte	Cytoplasmic Alteration	Minimal
	Hepatocyte	Hypertrophy	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 2 - 4+5 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1 - 14 ]		
* Ovary		Atrophy	Mild
		Cyst	
* Thyroid Gland	Follicular Cel	Hypertrophy	Moderate

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 592

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000607

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder		

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Minimal
* Kidney	Papilla, Urothelium	Hyperplasia	Minimal
	Renal Tubule	Mineral	Minimal
		Nephropathy	Chronicprogr, Mild
* Liver	Hepatocyte	Cytoplasmic Alteration	Mild
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Hypertrophy	Minimal
		Pigment	Minimal
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Marked
	[ Infiltration Cellular TGLs = 1 - 4+5 ]		
* Ovary		Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
		Pigment	Minimal
* Thymus		Atrophy	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal
	Endometrium	Metaplasia	Squamous, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 594

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000609

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Brain
- \* Clitoral Gland
- \* Esophagus
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Mammary Gland
- \* Nose
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Salivary Glands
- \* Skin
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Bone Marrow Hyperplasia Marked
- \* Kidney Papilla, Urothelium Hyperplasia Moderate
- Papilla Necrosis Mild
- \* Liver Hepatocyte Nephropathy Chronicprogr, Minimal
- Bile Duct Cytoplasmic Alteration Marked
- Hepatocyte Hyperplasia Minimal
- Hepatocyte Hypertrophy Marked
- Pigment Marked
- \* Lung Hepatocyte Single Cell Death Minimal
- Alveolus Infiltration Cellular Histocyte, Minimal
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- \* Ovary Atrophy Minimal
- \* Pancreas Acinus Adenoma
- [ Adenoma TGLs = 3 - 14 ]
- \* Spleen Lymph Follic Atrophy Minimal
- Extramedullary Hematopoiesis Mild
- \* Thymus Atrophy Moderate
- \* Thyroid Gland C Cell Hyperplasia Minimal
- Follicular Cel Hypertrophy Moderate
- \* Uterus Dilation Marked
- [ Dilation TGLs = 1 - 12 ]

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 596

TRT#: 10

SEX: Female

DAY ON TEST: 744

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000611

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | Blood Vessel             | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Salivary Glands        | * Skin                     |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |

OBSERVATIONS

- |                 |  |                                 |                       |
|-----------------|--|---------------------------------|-----------------------|
| * Eye           | Retina                                     | Degeneration                    | Mild                  |
| * Kidney        |  | Calculus Micro Observation Only | Minimal               |
|                 | Papilla, Urothelium                        | Hyperplasia                     | Mild                  |
|                 |  | Nephropathy                     | Chronicprogr, Minimal |
| * Liver         | Hepatocyte                                 | Cytoplasmic Alteration          | Moderate              |
|                 |  | Eosinophilic Focus              |                       |
|                 |  | Hepatocellular Carcinoma        |                       |
|                 | Bile Duct                                  | Hyperplasia                     | Minimal               |
|                 | Hepatocyte                                 | Hypertrophy                     | Moderate              |
|                 |  | Pigment                         | Moderate              |
|                 | Hepatocyte                                 | Single Cell Death               | Minimal               |
|                 | [ Hepatocellular Carcinoma TGLs = 1 - 14 ] |                                 |                       |
| * Lung          | Alveolus                                   | Infiltration Cellular           | Histiocyte, Minimal   |
| * Mammary Gland |  | Hyperplasia                     | Minimal               |
| * Nose          |  | Inflammation                    | Minimal               |
| * Ovary         |  | Cyst                            |                       |
| * Spleen        |  | Pigment                         | Minimal               |
| * Thymus        |  | Atrophy                         | Moderate              |
| * Thyroid Gland | C Cell                                     | Hyperplasia                     | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 597

TRT#: 10

SEX: Female

DAY ON TEST: 676

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000612

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Ovary
- \* Salivary Glands
- \* Urinary Bladder
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Uterus

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Nose
- \* Spleen
- \* Stomach, Forestomach
- Degeneration
- Hyperplasia
- Calculus Micro Observation Only
- Papilla, Urothelium
- Papilla
- Hepatocyte
- Hepatocyte
- Hepatocyte
- Alveolus
- [ Infiltration Cellular TGLs = 2 - 4+5 ]
- Fibroadenoma
- [ Fibroadenoma TGLs = 1 - 14 ]
- Foreign Body
- Inflammation
- Extramedullary Hematopoiesis
- Epithelium
- Submucosa
- [ Hyperplasia TGLs = 3 - 7+15 ]
- Cystic, Minimal
- Minimal
- Minimal
- Mild
- Mild
- Chronicprogr, Mild
- Marked
- Marked
- Moderate
- Mild
- Histiocyte, Minimal
- Mild
- Mild
- Mild
- Marked
- Chronic Active, Moderate
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

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**ANIMAL ID:** 597

**TRT#:** 10

**SEX:** Female

**DAY ON TEST:** 676

**DOSE:** 300/1000 ppm

**DISP:** Moribund Sacrifice

**HISTO:** 1000612

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thymus

Atrophy

Moderate

\* Thyroid Gland

Follicular Cel

Hypertrophy

Mild

---

PRIMARY CAUSE OF DEATH

- Mammary Gland Fibroadenoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 598

TRT#: 10

SEX: Female

DAY ON TEST: 676

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000613

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Brain                   | * Clitoral Gland            |
| * Esophagus              | * Eye                      | * Harderian Gland         | * Heart                     |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Nose                     | * Ovary                   | * Pancreas                  |
| * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         | * Skin                      |
| * Thyroid Gland          | * Trachea                  | * Uterus                  |                             |

OBSERVATIONS

- |                        |  |                         |                                   |
|------------------------|--|-------------------------|-----------------------------------|
| * Adrenal Cortex       |  | Degeneration            | Cystic, Minimal                   |
| * Adrenal Medulla      |  | Hyperplasia             | Mild                              |
| * Bone Marrow          |  | Hyperplasia             | Marked                            |
| * Kidney               | Papilla, Urothelium                      | Hyperplasia             | Moderate                          |
|                        |  | Infarct                 | Mild                              |
|                        | Pelvis                                   | Inflammation            | Chronic, Moderate                 |
|                        | Papilla                                  | Necrosis                | Mild                              |
| * Liver                | Hepatocyte                               | Cytoplasmic Alteration  | Minimal                           |
|                        | Hepatocyte                               | Hypertrophy             | Marked                            |
|                        | Hepatocyte                               | Increased Mitoses       | Minimal                           |
|                        |  | Pigment                 | Mild                              |
|                        | Hepatocyte                               | Single Cell Death       | Minimal                           |
| * Lung                 | Alveolus                                 | Infiltration Cellular   | Histiocyte, Mild                  |
|                        | [ Infiltration Cellular TGLs = 3 - 4+5 ] |                         |                                   |
|                        | Lymph Node                               |                         |                                   |
|                        | [ Sarcoma TGLs = 2 - 15 ]                |                         |                                   |
|                        | Pancreatic                               | Sarcoma                 | Metastatic (Stomach, Forestomach) |
| * Mammary Gland        |  | Hyperplasia             | Minimal                           |
| * Spleen               | Lymph Follic                             | Atrophy                 | Minimal                           |
| * Stomach, Forestomach | Epithelium                               | Hyperplasia             | Moderate                          |
|                        |  | Leiomyosarcoma          |                                   |
|                        |  | Squamous Cell Papilloma |                                   |
|                        |  | Ulcer                   | Minimal                           |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

ANIMAL ID: 598

TRT#: 10

SEX: Female

DAY ON TEST: 676

DOSE: 300/1000 ppm

DISP: Moribund Sacrifice

HISTO: 1000613

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Leiomyosarcoma TGLs = 4 - 16 ]

\* Stomach, Glandular

\* Thymus

\* Urinary Bladder

Zymbal's Gland

Leiomyosarcoma

Atrophy

Metaplasia

Carcinoma

Metastatic (Stomach, Forestomach)

Marked

Squamous, Moderate

---

[ Carcinoma TGLs = 1 - 14 ]

PRIMARY CAUSE OF DEATH

- Zymbal's Gland Carcinoma

---

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

ANIMAL ID: 599

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000614

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pituitary Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Skin
- \* Uterus
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Stomach, Forestomach

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Kidney
- Note: TGLs 4 - 6 = NCL
- \* Liver
- \* Lung
- \* Mammary Gland
- \* Ovary
- \* Pancreas
- Papilla, Urothelium
- Pelvis
- Papilla
- Hepatocyte
- Bile Duct
- Hepatocyte
- Hepatocyte
- [ Hepatocellular Adenoma TGLs = 5 - 15 ]
- [ Hepatocellular Carcinoma TGLs = 2 - 14 ]
- Alveolus
- [ Infiltration Cellular TGLs = 6 - 4+5 ]
- Acinus
- Degeneration
- Hyperplasia
- Hyperplasia
- Infarct
- Inflammation
- Necrosis
- Nephropathy
- Cytoplasmic Alteration
- Hepatocellular Adenoma
- Hepatocellular Carcinoma
- Hyperplasia
- Hypertrophy
- Pigment
- Single Cell Death
- Infiltration Cellular
- Hyperplasia
- Cyst
- Adenoma
- Cystic, Minimal
- Mild
- Moderate
- Mild
- Chronic, Moderate
- Moderate
- Chronicprogr, Mild
- Mild
- Minimal
- Moderate
- Minimal
- Minimal
- Histiocyte, Moderate
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 20614 - 01

Test Type: CHRONIC

Route: DOSED FEED

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Perfluorooctanoic Acid

CAS Number: 335-67-1

Date Report Requested: 07/25/2018

Time Report Requested: 12:58:26

First Dose M/F: 10/27/08 / 10/28/08

Lab: BAT

---

ANIMAL ID: 599

TRT#: 10

SEX: Female

DAY ON TEST: 745

DOSE: 300/1000 ppm

DISP: Terminal Sacrifice

HISTO: 1000614

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 1 - 7 ]

* Spleen	Lymph Follic	Atrophy	Minimal
		Extramedullary Hematopoiesis	Moderate
* Thymus		Atrophy	Marked
* Thyroid Gland	Follicular Cel	Hypertrophy	Minimal
* Urinary Bladder		Inflammation	Mild

---

\*\*\* END OF REPORT \*\*\*