Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

SSAC Males 0-20, 300-20

NTP Study Number: C20614B

Lock Date: 01/10/2012

Cage Range: ALL

Date Range: ALL

Reasons For Removal: 25017 SSAC

Removal Date Range: ALL

Treatment Groups: Include 003 0/20 ppm Include 004 300/20 ppm

Study Gender: Male

TDMSE Version: 2.5.0.0_sfh

PWG Approval Date: NONE

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| Males | | | | |
|---------------------------|-----------|------------|--|--|
| DOSE | 0/20 ppm | 300/20 ppm | | |
| | | | | |
| Liver Basophilic Focus | | | | |
| LESION RATES | | | | |
| OVERALL (a) | 0/10 (0%) | 1/10 (10%) | | |
| POLY-3 RATE (b) | 0/10.00 | 1/10.00 | | |
| POLY-3 PERCENT (g) | 0% | 10% | | |
| INT SACRIFICE 1 | 0/10 (0% | 1/10 (10% | | |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) | | |
| FIRST INCIDENCE | | 108 (I) | | |
| STATISTICAL TESTS | | | | |
| POLY 3 | | P=0.500 | | |
| POLY 1.5 | | P=0.500 | | |
| POLY 6 | | P=0.500 | | |
| COCH-ARM / FISHERS | | P=0.500 | | |
| MAX-ISO-POLY-3 | | P=0.158 | | |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| DOSE | 0/20 ppm | 300/20 ppm |
|---------------------------|------------|------------|
| | | |
| Liver Clear Cell Focus | | |
| LESION RATES | | |
| OVERALL (a) | 1/10 (10%) | 2/10 (20%) |
| POLY-3 RATE (b) | 1/10.00 | 2/10.00 |
| POLY-3 PERCENT (g) | 10% | 20% |
| INT SACRIFICE 1 | 1/10 (10% | 2/10 (20% |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) |
| FIRST INCIDENCE | 108 (I) | 108 (I) |
| STATISTICAL TESTS | | |
| POLY 3 | | P=0.500 |
| POLY 1.5 | | P=0.500 |
| POLY 6 | | P=0.500 |
| COCH-ARM / FISHERS | | P=0.500 |
| MAX-ISO-POLY-3 | | P=0.274 |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| | | | Males |
|-----------------------------|--------------|------------|-------|
| DOSE | 0/20 ppm | 300/20 ppm | |
| | | | |
| Liver Inflammation Focal | | | |
| | | | |
| LESION RATES | | | |
| OVERALL (a) | 10/10 (100%) | 9/10 (90%) | |
| POLY-3 RATE (b) | 10/10.00 | 9/10.00 | |
| POLY-3 PERCENT (g) | 100% | 90% | |
| INT SACRIFICE 1 | 10/10 (100% | 9/10 (90% | |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) | |
| FIRST INCIDENCE | 108 (I) | 108 (I) | |
| STATISTICAL TESTS | | | |
| POLY 3 | | P=0.500N | |
| POLY 1.5 | | P=0.500N | |
| POLY 6 | | P=0.500N | |
| COCH-ARM / FISHERS | | P=0.500N | |
| MAX-ISO-POLY-3 | | P=0.158N | |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

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

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| | | | Males | |
|--------------------|------------|------------|-------|--|
| DOSE | 0/20 ppm | 300/20 ppm | | |
| | | | | |
| Liver Necrosis | | | | |
| LESION RATES | | | | |
| OVERALL (a) | 1/10 (10%) | 2/10 (20%) | | |
| POLY-3 RATE (b) | 1/10.00 | 2/10.00 | | |
| POLY-3 PERCENT (g) | 10% | 20% | | |
| INT SACRIFICE 1 | 1/10 (10% | 2/10 (20% | | |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) | | |
| FIRST INCIDENCE | 108 (I) | 108 (I) | | |
| STATISTICAL TESTS | | | | |
| POLY 3 | | P=0.500 | | |
| POLY 1.5 | | P=0.500 | | |
| POLY 6 | | P=0.500 | | |
| COCH-ARM / FISHERS | | P=0.500 | | |
| MAX-ISO-POLY-3 | | P=0.274 | | |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| _ | | | Males | |
|--------------------|------------|------------|-------|--|
| DOSE | 0/20 ppm | 300/20 ppm | | |
| | | | | |
| Liver | | | | |
| Pigment | | | | |
| LESION RATES | | | | |
| OVERALL (a) | 2/10 (20%) | 3/10 (30%) | | |
| POLY-3 RATE (b) | 2/10.00 | 3/10.00 | | |
| POLY-3 PERCENT (g) | 20% | 30% | | |
| INT SACRIFICE 1 | 2/10 (20% | 3/10 (30% | | |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) | | |
| FIRST INCIDENCE | 108 (I) | 108 (I) | | |
| STATISTICAL TESTS | | | | |
| POLY 3 | | P=0.500 | | |
| POLY 1.5 | | P=0.500 | | |
| POLY 6 | | P=0.500 | | |
| COCH-ARM / FISHERS | | P=0.500 | | |
| MAX-ISO-POLY-3 | | P=0.310 | | |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| | | | Males |
|--|--------------|------------|-------|
| DOSE | 0/20 ppm | 300/20 ppm | |
| | | | |
| Liver: Hepatocyte Cytoplasmic Alteration | | | |
| LESION RATES | | | |
| OVERALL (a) | 10/10 (100%) | 9/10 (90%) | |
| POLY-3 RATE (b) | 10/10.00 | 9/10.00 | |
| POLY-3 PERCENT (g) | 100% | 90% | |
| INT SACRIFICE 1 | 10/10 (100% | 9/10 (90% | |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) | |
| FIRST INCIDENCE | 108 (I) | 108 (I) | |
| STATISTICAL TESTS | | | |
| POLY 3 | | P=0.500N | |
| POLY 1.5 | | P=0.500N | |
| POLY 6 | | P=0.500N | |
| COCH-ARM / FISHERS | | P=0.500N | |
| MAX-ISO-POLY-3 | | P=0.158N | |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| | | | Males | |
|----------------------------------|--------------|------------|-------|--|
| DOSE | 0/20 ppm | 300/20 ppm | | |
| Liver: Hepatocyte Hypertrophy | | | | |
| LESION RATES | | | | |
| OVERALL (a) | 10/10 (100%) | 9/10 (90%) | | |
| POLY-3 RATE (b) | 10/10.00 | 9/10.00 | | |
| POLY-3 PERCENT (g) | 100% | 90% | | |
| INT SACRIFICE 1 | 10/10 (100% | 9/10 (90% | | |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) | | |
| FIRST INCIDENCE | 108 (I) | 108 (I) | | |
| STATISTICAL TESTS | | | | |
| POLY 3 | | P=0.500N | | |
| POLY 1.5 | | P=0.500N | | |
| POLY 6 | | P=0.500N | | |
| COCH-ARM / FISHERS | | P=0.500N | | |
| MAX-ISO-POLY-3 | | P=0.158N | | |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

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

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

| | | | Males | |
|--|------------|------------|-------|--|
| DOSE | 0/20 ppm | 300/20 ppm | | |
| | | | | |
| Liver: Hepatocyte Single Cell Death | | | | |
| LESION RATES | | | | |
| OVERALL (a) | 7/10 (70%) | 5/10 (50%) | | |
| POLY-3 RATE (b) | 7/10.00 | 5/10.00 | | |
| POLY-3 PERCENT (g) | 70% | 50% | | |
| INT SACRIFICE 1 | 7/10 (70% | 5/10 (50% | | |
| TERMINAL (d) | 0/0 (0%) | 0/0 (0%) | | |
| FIRST INCIDENCE | 108 (I) | 108 (I) | | |
| STATISTICAL TESTS | | | | |
| POLY 3 | | P=0.329N | | |
| POLY 1.5 | | P=0.329N | | |
| POLY 6 | | P=0.329N | | |
| COCH-ARM / FISHERS | | P=0.325N | | |
| MAX-ISO-POLY-3 | | P=0.188N | | |

Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/HSD

P10: STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS

Perfluorooctanoic Acid CAS Number: 335-67-1

Date Report Requested: 06/14/2018 Time Report Requested: 21:34:56 First Dose M/F: 07/27/09 / NA

Lab: BAT

LEGEND

| (a) | Number of tumor-bearing animals/number of animals examined at site. |
|-----|---|
| | |

- (b) Number of tumor-bearing animals/Poly-3 number
- (d) Observed incidence at terminal kill.
- (e) Value of statistic cannot be computed.
- (f) Beneath the control incidence are the P-values associated with the trend test. Beneath the dosed group incidence are the P-values corresponding to
 - pairwise comparisons between the controls and that dosed group.
- (g) Poly-3 adjusted lifetime tumor incidence.
- (n) No statistics are calculated if all dose groups have fewer than two tumors.
- (I) Interim sacrifice
- (T) Terminal sacrifice
- # Tumor rates based on numbers of animals necropsied.
- * To the right of any statistical result, indicates significance at (P<=0.05).</p>
- ** To the right of any statistical result, indicates significance at (P<=0.01).
- N Indicates a negative trend for all tests
 - The Cochran-Armitage and Fishers exact tests compare directly the overall incidence rates.

*** END OF REPORT ***