

Study Number: C11042B-01
Test Type: TOX with Perinatal Exposure
Route: Dosing in Feed
Species/Strain: Rat/Harlan Sprague Dawley

PA10 Subchronic: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: Triphenyl Phosphate (TPHP)
CAS Number: 115-86-6
Final

Date Report Requested: 05/28/2026
Time Report Requested: 10:08:13
Lab: Battelle

Study Number: C11042B-01
Study Sex: Both
PWG Approval Date: See web page for date of PWG Approval
Version: v1.7.8
Stat Version: 2025.06.02S

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F1 Male : Subchronic Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
Disposition Summary						
Animals Initially In Study	10	10	10	10	10	10
Censored						
Early Deaths						
Survivors						
Scheduled Sacrifice, Terminal	10	10	10	10	10	10
Number Animals Examined Microscopically	10	10	10	10	10	10
ALIMENTARY SYSTEM						
ORAL MUCOSA	(1)	(0)	(0)	(0)	(0)	(0)
HYPERPLASIA; SQUAMOUS	1 (100%) [1]					
STOMACH, GLANDULAR	(10)	(0)	(0)	(0)	(0)	(10)
MINERAL	7 (70%) [7]					2 (20%) [2]
CARDIOVASCULAR SYSTEM						
HEART	(10)	(0)	(0)	(0)	(0)	(10)
CARDIOMYOPATHY						3 (30%) [3]
ENDOCRINE SYSTEM						
ADRENAL GLAND	(10)	(0)	(0)	(0)	(0)	(10)
ZONA FASCICULATA; VACUOLATION; FOCAL						1 (10%) [1]
PITUITARY GLAND	(10)	(0)	(0)	(0)	(0)	(10)
PARS DISTALIS; CYST						1 (10%) [1]
PARS INTERMEDIA; CYST	1 (10%) [1]					
GENERAL BODY SYSTEM						
None						
HEMATOPOIETIC SYSTEM						
None						

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F1 Male : Subchronic Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
HEPATOBIILIARY SYSTEM						
LIVER #	(10)	(10)	(10)	(10)	(10)	(10)
HEPATOCTYE; CYTOPLASMIC ALTERATION	0 **			3 (30%) [3]	8 (80%) [8] **	10 (100%) [10] **
BILE DUCT; DILATION	1 (10%) [1]					
FATTY CHANGE	0 **			2 (20%) [2]	2 (20%) [2]	10 (100%) [10] **
HEPATODIAPHRAGMATIC NODULE				1 (10%) [1]		
IMMUNE SYSTEM						
None						
INTEGUMENTARY SYSTEM						
None						
MUSCULOSKELETAL SYSTEM						
BONE	(10)	(0)	(0)	(0)	(0)	(10)
JOINT; DEGENERATION						1 (10%) [1]
SKELETAL MUSCLE	(10)	(0)	(0)	(0)	(0)	(10)
GASTROCNEMIUS; INFLAMMATION; CHRONIC-ACTIVE						1 (10%) [1]
NERVOUS SYSTEM						
None						
REPRODUCTIVE SYSTEM						
EPIDIDYMIS	(10)	(0)	(0)	(0)	(0)	(10)
HYOSPERMIA	1 (10%) [1]					
PREPUTIAL GLAND	(8)	(0)	(0)	(0)	(0)	(8)
DUCT; DILATION	2 (25%) [2]					
INFLAMMATION; CHRONIC	1 (12.5%) [1]					1 (12.5%) [1]
INFLAMMATION; GRANULOMATOUS	1 (12.5%) [1]					1 (12.5%) [1]

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F1 Male : Subchronic Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
RESPIRATORY SYSTEM						
LUNG	(10)	(0)	(0)	(0)	(0)	(10)
ALVEOLUS; INFILTRATION CELLULAR; HISTIOCYTE						3 (30%) [3]
ALVEOLUS, INTERSTITIUM; INFLAMMATION; CHRONIC	2 (20%) [2]					1 (10%) [1]
METAPLASIA; OSSEOUS	2 (20%) [2]					
NOSE	(10)	(0)	(0)	(2)	(0)	(10)
RESPIRATORY EPITHELIUM; DEGENERATION	1 (10%) [1]					
RESPIRATORY EPITHELIUM; INFLAMMATION; CHRONIC-ACTIVE						2 (20%) [2]
SQUAMOUS EPITHELIUM; INFLAMMATION; CHRONIC- ACTIVE						2 (20%) [2]
SPECIAL SENSES SYSTEM						
HARDERIAN GLAND	(10)	(0)	(0)	(0)	(0)	(10)
INFILTRATION CELLULAR; LYMPHOCYTE	4 (40%) [4]					5 (50%) [5]
INFLAMMATION; CHRONIC						2 (20%) [2]
INFLAMMATION; CHRONIC-ACTIVE						1 (10%) [1]
URINARY SYSTEM						
KIDNEY	(10)	(0)	(1)	(0)	(0)	(10)
CHRONIC PROGRESSIVE NEPHROPATHY	10 (100%) [10]		1 (100%) [1]			10 (100%) [10]
RENAL TUBULE; HYPERPLASIA; ATYPICAL	1 (10%) [1]					

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F1 Female : Subchronic Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
Disposition Summary						
Animals Initially In Study	10	10	10	10	10	10
Censored						
Early Deaths						
Survivors						
Scheduled Sacrifice, Terminal	10	10	10	10	10	10
Number Animals Examined Microscopically	10	10	10	10	10	10
ALIMENTARY SYSTEM						
INTESTINE SMALL, DUODENUM	(10)	(0)	(0)	(0)	(0)	(10)
PANCREATIC; ECTOPIC TISSUE	1 (10%) [1]					
STOMACH, GLANDULAR	(10)	(0)	(0)	(0)	(0)	(10)
MINERAL	3 (30%) [3]					1 (10%) [1]
CARDIOVASCULAR SYSTEM						
None						
ENDOCRINE SYSTEM						
ADRENAL GLAND	(10)	(0)	(0)	(0)	(0)	(10)
ANGIECTASIS						1 (10%) [1]
THYROID GLAND	(10)	(0)	(0)	(0)	(0)	(10)
BILATERAL, THYROGLOSSAL DUCT; CYST						1 (10%) [1]
THYROGLOSSAL DUCT; CYST						1 (10%) [1]
DUCT; METAPLASIA; SQUAMOUS						1 (10%) [1]
GENERAL BODY SYSTEM						
None						
HEMATOPOIETIC SYSTEM						
None						

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F1 Female : Subchronic Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
HEPATOBIILIARY SYSTEM						
LIVER #	(10)	(10)	(10)	(10)	(10)	(10)
HEPATOCTYCE; CYTOPLASMIC ALTERATION	0 **				5 (50%) [5] *	10 (100%) [10] **
IMMUNE SYSTEM						
None						
INTEGUMENTARY SYSTEM						
None						
MUSCULOSKELETAL SYSTEM						
SKELETAL MUSCLE	(10)	(0)	(0)	(0)	(0)	(10)
GASTROCNEMIUS; INFLAMMATION; CHRONIC						1 (10%) [1]
NERVOUS SYSTEM						
BRAIN	(10)	(0)	(0)	(0)	(0)	(10)
MEDULLA OBLONGATA; CYST						1 (10%) [1]
REPRODUCTIVE SYSTEM						
CLITORAL GLAND	(10)	(0)	(0)	(0)	(0)	(10)
DUCT; DILATION	1 (10%) [1]					1 (10%) [1]
OVARY	(10)	(0)	(0)	(0)	(0)	(10)
CORPUS LUTEUM; CYST						2 (20%) [2]
RESPIRATORY SYSTEM						
LARYNX	(10)	(0)	(0)	(0)	(0)	(10)
MINERAL						1 (10%) [1]
LUNG	(10)	(0)	(0)	(0)	(0)	(10)
ALVEOLUS, INTERSTITIUM; INFLAMMATION; CHRONIC	1 (10%) [1]					1 (10%) [1]
THROMBUS						1 (10%) [1]

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F1 Female : Subchronic Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
SPECIAL SENSES SYSTEM						
HARDERIAN GLAND	(10)	(0)	(0)	(0)	(0)	(10)
INFILTRATION CELLULAR; LYMPHOCYTE INFLAMMATION; ACUTE	1 (10%) [1]					2 (20%) [2] 1 (10%) [1]
URINARY SYSTEM						
KIDNEY	(10)	(0)	(0)	(0)	(0)	(10)
RENAL TUBULE; CAST; HYALINE CHRONIC PROGRESSIVE NEPHROPATHY NEPHROBLASTEMATOSIS	1 (10%) [1] 5 (50%) [5] 1 (10%) [1]					5 (50%) [5]

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F1 Male : Neurobehavioral Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
Disposition Summary						
Animals Initially In Study	19	20	20	20	20	20
Censored	5	5	5	5	5	5
Early Deaths						
Found Dead	1					
Survivors						
Scheduled Sacrifice, Terminal	13	15	15	15	15	15
Number Animals Examined Microscopically	14					15
ALIMENTARY SYSTEM						
None						
CARDIOVASCULAR SYSTEM						
None						
ENDOCRINE SYSTEM						
None						
GENERAL BODY SYSTEM						
None						
HEMATOPOIETIC SYSTEM						
None						
HEPATOBIILIARY SYSTEM						
None						
IMMUNE SYSTEM						
LYMPH NODE, MESENTERIC	(1)	(0)	(0)	(0)	(0)	(0)

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F1 Male : Neurobehavioral Cohort

Treatment Groups (ppm)

0 30 100 300 1000 3000

INTEGUMENTARY SYSTEM

None

MUSCULOSKELETAL SYSTEM

None

NERVOUS SYSTEM

None

REPRODUCTIVE SYSTEM

None

RESPIRATORY SYSTEM

None

SPECIAL SENSES SYSTEM

None

URINARY SYSTEM

KIDNEY	(1)	(0)	(0)	(0)	(0)	(0)
CHRONIC PROGRESSIVE NEPHROPATHY	1 (100%) [1]					

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F1 Female : Neurobehavioral Cohort

	Treatment Groups (ppm)					
	0	30	100	300	1000	3000
Disposition Summary						
Animals Initially In Study	19	20	20	20	20	20
Censored	5	5	5	5	5	5
Early Deaths						
Survivors						
Scheduled Sacrifice, Terminal	14	15	15	15	15	15
Number Animals Examined Microscopically	14	1	1			15

ALIMENTARY SYSTEM

None

CARDIOVASCULAR SYSTEM

None

ENDOCRINE SYSTEM

None

GENERAL BODY SYSTEM

None

HEMATOPOIETIC SYSTEM

None

HEPATOBIILIARY SYSTEM

None

IMMUNE SYSTEM

None

INTEGUMENTARY SYSTEM

None

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Treatment Groups (ppm)

0 30 100 300 1000 3000

MUSCULOSKELETAL SYSTEM

SKELETAL MUSCLE	(14)	(1)	(1)	(0)	(0)	(15)
GASTROCNEMIUS; INFILTRATION CELLULAR; MIXED						3 (20%) [3]
THIGH; INFILTRATION CELLULAR; MIXED						1 (6.7%) [1]

NERVOUS SYSTEM

None

REPRODUCTIVE SYSTEM

None

RESPIRATORY SYSTEM

None

SPECIAL SENSES SYSTEM

None

URINARY SYSTEM

None

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LEGEND

For this study, "Censored" refers to 5 animals per group in the Neurobehavioral Cohort that were removed without necropsy for brain cholinesterase analysis.

In the rows with the tissue names, the number of animals examined for each tissue is shown in parentheses.

In the rows with the lesion names, the number of animals with observation are reported with percent incidence in parentheses. If none of the animals examined have the specific lesion, there is a blank for that dose group for that specific lesion. The exception to this is if statistical significance is found for a lesion and the control group has no animals with the lesion; in that case a 0 is included for the control group on the table for that lesion.

A pathology peer review was conducted on liver tissues from all male and female animals across all dose groups in the subchronic cohort. All other tissues were evaluated solely by the original study pathologist.

Number of litters with observations shown in square brackets for F1 animals. F1 litter incidence based on the number of F0 dams.

Statistical analysis performed by Cochran-Armitage (trend) and Fisher Exact (pairwise) one-sided tests.

For some tissues, a histopathological examination occurred only if a gross lesion was detected. These findings were not analyzed statistically. Trend significance is reported only for those organs that were fully examined in the control group plus two or more other dose groups. For organs that were fully examined in just the control and one other dose group, only the pairwise significance is reported.

Statistical significance for the control group indicates a significant trend test.

Statistical significance for a treatment group indicates a significant pairwise test compared to the vehicle control group.

* Statistically significant at $p \leq 0.05$

** Statistically significant at $p \leq 0.01$

**** END OF REPORT ****