

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA02: Neoplastic Lesion Summary with Percent Incidence
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/08/2024
Time Report Requested: 08:55:15
Lab: Battelle with EPL

Study Number:

C20302B-01

Study Sex:

Both

PWG Approval Date:

See web page for date of PWG Approval

Version:

v1.7.0

Male: Interim Males				
	Treatment Groups (ppm)			
	0	100	200	400
Disposition Summary				
Animals Initially In Study	10	10	10	10
Censored				
Early Deaths				
Survivors				
Scheduled Sacrifice, Terminal	10	10	10	10
Number Animals Examined Microscopically	10	10	10	10
ALIMENTARY SYSTEM				
No Tissues/Organs Examined				
CARDIOVASCULAR SYSTEM				
No Tissues/Organs Examined				
ENDOCRINE SYSTEM				
No Tissues/Organs Examined				
GENERAL BODY SYSTEM				
No Tissues/Organs Examined				
HEMATOPOIETIC SYSTEM				
No Tissues/Organs Examined				
HEPATOBIILIARY SYSTEM				
No Tissues/Organs Examined				
IMMUNE SYSTEM				
No Tissues/Organs Examined				
INTEGUMENTARY SYSTEM				
No Tissues/Organs Examined				
MUSCULOSKELETAL SYSTEM				
No Tissues/Organs Examined				

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Male: Interim Males				
	Treatment Groups (ppm)			
	0	100	200	400
NERVOUS SYSTEM				
No Tissues/Organs Examined				
REPRODUCTIVE SYSTEM				
EPIDIDYMIS	(10)	(10)	(10)	(10)
TESTIS	(10)	(10)	(10)	(10)
RESPIRATORY SYSTEM				
No Tissues/Organs Examined				
SPECIAL SENSES SYSTEM				
No Tissues/Organs Examined				
URINARY SYSTEM				
URINARY BLADDER	(10)	(10)	(10)	(10)
No Systemic Lesions				

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Tumor Summary Data for Male Interim Males	Treatment Groups (ppm)			
	0	100	200	400
Total Animals with Primary Neoplasms	0	0	0	0
Total Primary Neoplasms	0	0	0	0
Total Animals with Benign Neoplasms	0	0	0	0
Total Benign Neoplasms	0	0	0	0
Total Animals with Malignant Neoplasms	0	0	0	0
Total Malignant Neoplasms	0	0	0	0
Total Animals with Metastatic Neoplasms	0	0	0	0
Total Metastatic Neoplasms	0	0	0	0
Total Animals with Malignant Neoplasms Uncertain Primary Site	0	0	0	0

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Male: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
Disposition Summary				
Animals Initially In Study	50	50	50	50
Censored			2	
Early Deaths				
Found Dead	8	15	9	14
Sacrificed, Moribund	3	5	5	5
Survivors				
Scheduled Sacrifice, Terminal	39	30	34	31
Number Animals Examined Microscopically	50	50	50	50

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Male: Core Animals

	Treatment Groups (ppm)			
	0	100	200	400
ALIMENTARY SYSTEM				
ESOPHAGUS	(50)	(50)	(50)	(50)
INTESTINE, LARGE, CECUM	(50)	(50)	(49)	(47)
ADENOCARCINOMA			2 (4%)	
ADENOMA			1 (2%)	
LYMPHOMA; MALIGNANT			1 (2%)	
INTESTINE, LARGE, COLON	(49)	(50)	(50)	(48)
INTESTINE, LARGE, RECTUM	(50)	(50)	(50)	(48)
INTESTINE, SMALL, DUODENUM	(49)	(50)	(50)	(48)
INTESTINE, SMALL, ILEUM	(50)	(50)	(49)	(48)
HISTIOCYTIC SARCOMA		1 (2%)		
LYMPHOMA; MALIGNANT			1 (2%)	
INTESTINE, SMALL, JEJUNUM	(49)	(50)	(50)	(47)
ADENOCARCINOMA			2 (4%)	
ADENOMA	1 (2%)			
LYMPHOMA; MALIGNANT			1 (2%)	
MESENTERY	(2)	(1)	(2)	(1)
ADIPOSE TISSUE; HEPATOCELLULAR CARCINOMA; METASTATIC				1 (100%)
PANCREAS	(50)	(50)	(50)	(48)
ACINUS; HEPATOBLASTOMA; METASTATIC				1 (2%)
ACINUS; SQUAMOUS CELL CARCINOMA; METASTATIC		1 (2%)		
SALIVARY GLAND	(50)	(50)	(50)	(50)
STOMACH, FORESTOMACH	(49)	(49)	(50)	(48)
PAPILLOMA			2 (4%)	3 (6%)
SQUAMOUS CELL CARCINOMA		1 (2%)		
STOMACH, GLANDULAR	(50)	(50)	(50)	(49)

Male: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
CARDIOVASCULAR SYSTEM				
AORTA	(50)	(50)	(50)	(50)
HEPATOBLASTOMA; METASTATIC				1 (2%)
HEART	(50)	(50)	(49)	(50)
HEPATOBLASTOMA; METASTATIC				1 (2%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC		1 (2%)	1 (2%)	
LYMPHOMA; MALIGNANT	1 (2%)			
ENDOCRINE SYSTEM				
ADRENAL GLAND	(50)	(50)	(48)	(50)
HEPATOBLASTOMA; METASTATIC				1 (2%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (2%)	
HISTIOCYTIC SARCOMA		1 (2%)		
PHEOCHROMOCYTOMA; COMPLEX, MALIGNANT		1 (2%)		
PANCREATIC ISLET	(0)	(0)	(1)	(0)
PARATHYROID GLAND	(49)	(42)	(48)	(43)
PITUITARY GLAND	(49)	(45)	(46)	(45)
HEPATOBLASTOMA; METASTATIC				1 (2%)
HISTIOCYTIC SARCOMA		1 (2%)		
THYROID GLAND	(50)	(50)	(49)	(49)
FOLLICULAR CELL; ADENOMA			2 (4%)	
GENERAL BODY SYSTEM				
ADIPOSE TISSUE	(0)	(0)	(1)	(0)
LIPOMA			1 (100%)	
CAVITY	(1)	(2)	(3)	(1)
HEMATOPOIETIC SYSTEM				
BONE MARROW	(50)	(50)	(50)	(50)

Male: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
HEPATOBIILIARY SYSTEM				
GALLBLADDER	(50)	(50)	(48)	(47)
LIVER	(50)	(50)	(49)	(50)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC		1 (2%)		
HEMANGIOMA		1 (2%)		
HEMANGIOSARCOMA			1 (2%)	
HEPATOBLASTOMA				1 (2%)
HEPATOCELLULAR ADENOMA; MULTIPLE	8 (16%)	17 (34%)	21 (43%)	20 (40%)
HEPATOCELLULAR ADENOMA	15 (30%)	9 (18%)	10 (20%)	13 (26%)
HEPATOCELLULAR CARCINOMA; MULTIPLE	4 (8%)	10 (20%)	8 (16%)	17 (34%)
HEPATOCELLULAR CARCINOMA	14 (28%)	16 (32%)	9 (18%)	19 (38%)
HEPATOCHOLANGIOCARCINOMA; MULTIPLE		1 (2%)		
HEPATOCHOLANGIOCARCINOMA		1 (2%)	2 (4%)	
HISTIOCYTIC SARCOMA		1 (2%)	3 (6%)	
LYMPHOMA; MALIGNANT			2 (4%)	

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Male: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
IMMUNE SYSTEM				
LYMPH NODE	(2)	(2)	(2)	(1)
LUMBAR; HEPATOCELLULAR CARCINOMA; METASTATIC		1 (50%)		
RENAL; HEPATOCELLULAR CARCINOMA; METASTATIC		1 (50%)		
LUMBAR; LYMPHOMA; MALIGNANT	1 (50%)			
RENAL; LYMPHOMA; MALIGNANT	1 (50%)		2 (100%)	1 (100%)
PANCREATIC; SQUAMOUS CELL CARCINOMA; METASTATIC		1 (50%)		
LYMPH NODE, BRONCHIAL	(41)	(45)	(44)	(44)
ADENOCARCINOMA; METASTATIC				1 (2%)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC		1 (2%)		
CARCINOMA; METASTATIC		1 (2%)		
HEPATOBLASTOMA; METASTATIC				1 (2%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC		1 (2%)		
HISTIOCYTIC SARCOMA		1 (2%)	1 (2%)	
LYMPHOMA; MALIGNANT	1 (2%)		1 (2%)	
LYMPH NODE, MANDIBULAR	(47)	(47)	(48)	(48)
ADENOCARCINOMA; METASTATIC				1 (2%)
HISTIOCYTIC SARCOMA		1 (2%)		
LYMPHOMA; MALIGNANT	1 (2%)		1 (2%)	
LYMPH NODE, MEDIASTINAL	(42)	(44)	(41)	(38)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC		2 (5%)		
HEPATOCELLULAR CARCINOMA; METASTATIC		1 (2%)		
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (2%)	
HISTIOCYTIC SARCOMA		1 (2%)		
LYMPHOMA; MALIGNANT	1 (2%)		1 (2%)	
LYMPH NODE, MESENTERIC	(50)	(45)	(45)	(48)
HISTIOCYTIC SARCOMA		1 (2%)	2 (4%)	
LYMPHOMA; MALIGNANT	1 (2%)		4 (9%)	2 (4%)

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Male: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
SPLEEN	(50)	(49)	(48)	(49)
HEMANGIOSARCOMA		1 (2%)	1 (2%)	
HISTIOCYTIC SARCOMA		1 (2%)	1 (2%)	
LYMPHOMA; MALIGNANT	1 (2%)		3 (6%)	
THYMUS	(46)	(42)	(43)	(41)
HEPATOBLASTOMA; METASTATIC				1 (2%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (2%)	
HISTIOCYTIC SARCOMA		1 (2%)		
INTEGUMENTARY SYSTEM				
SKIN	(50)	(50)	(50)	(50)
FIBROSARCOMA				1 (2%)
PLEOMORPHIC FIBROSARCOMA	1 (2%)			1 (2%)
MUSCULOSKELETAL SYSTEM				
BONE	(0)	(2)	(3)	(0)
RIB; HEPATOCHOLANGIOCARCINOMA; METASTATIC		1 (50%)		
BONE, FEMUR	(50)	(50)	(50)	(50)
SKELETAL MUSCLE	(2)	(0)	(1)	(1)
HEPATOBLASTOMA; METASTATIC				1 (100%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (100%)	
NERVOUS SYSTEM				
BRAIN	(50)	(50)	(49)	(50)
NERVE	(0)	(1)	(0)	(0)
NERVE, SCIATIC	(1)	(1)	(0)	(0)
NERVE, TRIGEMINAL	(1)	(0)	(0)	(0)
SPINAL CORD	(1)	(0)	(2)	(0)
SPINAL CORD, LUMBAR	(0)	(1)	(0)	(0)

Male: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
REPRODUCTIVE SYSTEM				
COAGULATING GLAND	(1)	(0)	(0)	(0)
EPIDIDYMIS	(50)	(49)	(50)	(48)
HISTIOCYTIC SARCOMA		1 (2%)	2 (4%)	
LYMPHOMA; MALIGNANT	1 (2%)			
MAMMARY GLAND	(23)	(41)	(32)	(31)
PREPUTIAL GLAND	(49)	(49)	(49)	(47)
SARCOMA				1 (2%)
PROSTATE	(49)	(50)	(50)	(50)
SEMINAL VESICLE	(49)	(50)	(50)	(50)
TESTIS	(50)	(49)	(50)	(47)

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Male: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
RESPIRATORY SYSTEM				
LARYNX	(48)	(50)	(48)	(49)
LUNG	(50)	(50)	(50)	(50)
ADENOCARCINOMA; METASTATIC				2 (4%)
ALVEOLAR/BRONCHIOLAR ADENOMA; MULTIPLE	1 (2%)	1 (2%)	3 (6%)	5 (10%)
ALVEOLAR/BRONCHIOLAR ADENOMA	4 (8%)	7 (14%)	7 (14%)	13 (26%)
ALVEOLAR/BRONCHIOLAR CARCINOMA; MULTIPLE	1 (2%)	1 (2%)	3 (6%)	4 (8%)
ALVEOLAR/BRONCHIOLAR CARCINOMA	8 (16%)	5 (10%)	11 (22%)	9 (18%)
FIBROSARCOMA; METASTATIC				1 (2%)
HEPATOBLASTOMA; METASTATIC				1 (2%)
HEPATOCELLULAR CARCINOMA; METASTATIC	6 (12%)	10 (20%)	9 (18%)	13 (26%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC		2 (4%)	1 (2%)	
HISTIOCYTIC SARCOMA		1 (2%)	1 (2%)	
LYMPHOMA; MALIGNANT	1 (2%)			
SQUAMOUS CELL CARCINOMA; METASTATIC		1 (2%)		
NOSE	(49)	(50)	(50)	(49)
HISTIOCYTIC SARCOMA		1 (2%)		
TRACHEA	(48)	(48)	(49)	(48)
SPECIAL SENSES SYSTEM				
EYE	(50)	(50)	(49)	(49)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (2%)	
HARDERIAN GLAND	(50)	(50)	(50)	(50)
BILATERAL; ADENOCARCINOMA				1 (2%)
ADENOCARCINOMA		1 (2%)	3 (6%)	6 (12%)
BILATERAL; ADENOMA		2 (4%)	1 (2%)	2 (4%)
ADENOMA	6 (12%)	7 (14%)	10 (20%)	14 (28%)
HEPATOBLASTOMA; METASTATIC				1 (2%)

Male: Core Animals				
Treatment Groups (ppm)				
	0	100	200	400
URINARY SYSTEM				
KIDNEY	(49)	(50)	(50)	(50)
CARCINOMA		1 (2%)		
HEPATOBLASTOMA; METASTATIC				1 (2%)
HEPATOCELLULAR CARCINOMA; METASTATIC		1 (2%)		1 (2%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (2%)	
HISTIOCYTIC SARCOMA		1 (2%)		
SQUAMOUS CELL CARCINOMA; METASTATIC		1 (2%)		
URINARY BLADDER	(48)	(43)	(48)	(45)
PAPILLOMA				3 (7%)
SYSTEMIC LESIONS				
Multiple Organ(a)	(50)	(50)	(50)	(50)
HEMANGIOSARCOMA		1 (2%)	2 (4%)	
HISTIOCYTIC SARCOMA		1 (2%)	3 (6%)	
LYMPHOMA	1 (2%)		5 (10%)	2 (4%)

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Tumor Summary Data for Male Core Animals	Treatment Groups (ppm)			
	0	100	200	400
Total Animals with Primary Neoplasms	0	0	0	0
Total Primary Neoplasms	0	0	0	0
Total Animals with Benign Neoplasms	28	32	35	43
Total Benign Neoplasms	35	44	58	73
Total Animals with Malignant Neoplasms	23	35	38	41
Total Malignant Neoplasms	43	81	86	93
Total Animals with Metastatic Neoplasms	6	14	10	17
Total Metastatic Neoplasms	6	28	17	31
Total Animals with Malignant Neoplasms Uncertain Primary Site	0	0	0	0

Female: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
Disposition Summary				
Animals Initially In Study	50	50	40	50
Censored				
Early Deaths				
Found Dead	10	14	9	17
Sacrificed, Moribund	7	7	7	9
Survivors				
Scheduled Sacrifice, Terminal	33	29	24	24
Number Animals Examined Microscopically	50	50	40	50

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Female: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
ALIMENTARY SYSTEM				
ESOPHAGUS	(50)	(50)	(40)	(50)
INTESTINE, LARGE, CECUM	(50)	(46)	(38)	(50)
LYMPHOMA; MALIGNANT		1 (2%)		
INTESTINE, LARGE, COLON	(50)	(48)	(39)	(50)
INTESTINE, LARGE, RECTUM	(48)	(48)	(40)	(49)
INTESTINE, SMALL, DUODENUM	(50)	(48)	(39)	(48)
HISTIOCYTIC SARCOMA		1 (2%)		
LYMPHOMA; MALIGNANT	1 (2%)			
SCHWANNOMA; MALIGNANT, METASTATIC				1 (2%)
INTESTINE, SMALL, ILEUM	(50)	(47)	(39)	(49)
LYMPHOMA; MALIGNANT		1 (2%)	1 (3%)	
INTESTINE, SMALL, JEJUNUM	(50)	(47)	(39)	(48)
HISTIOCYTIC SARCOMA		1 (2%)		
LYMPHOMA; MALIGNANT			1 (3%)	2 (4%)
MESENTERY	(5)	(7)	(5)	(4)
ADIPOSE TISSUE; FIBROSARCOMA; METASTATIC			1 (20%)	
ADIPOSE TISSUE; HISTIOCYTIC SARCOMA		1 (14%)		
PANCREAS	(50)	(48)	(40)	(49)
ACINUS; HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (3%)	
ACINUS; LYMPHOMA; MALIGNANT	3 (6%)	1 (2%)	1 (3%)	1 (2%)
SALIVARY GLAND	(49)	(50)	(40)	(50)
LYMPHOMA; MALIGNANT	1 (2%)			1 (2%)
STOMACH, FORESTOMACH	(49)	(49)	(38)	(49)
LYMPHOMA; MALIGNANT	1 (2%)			
PAPILLOMA	1 (2%)			2 (4%)
SQUAMOUS CELL CARCINOMA				2 (4%)
STOMACH, GLANDULAR	(50)	(49)	(40)	(49)

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	Treatment Groups (ppm)			
	0	100	200	400
LYMPHOMA; MALIGNANT		1 (2%)		
SQUAMOUS CELL CARCINOMA; METASTATIC				1 (2%)
CARDIOVASCULAR SYSTEM				
AORTA	(50)	(50)	(40)	(50)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC				1 (2%)
LYMPHOMA; MALIGNANT				1 (2%)
HEART	(50)	(50)	(39)	(50)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC			1 (3%)	2 (4%)
FIBROSARCOMA; METASTATIC				1 (2%)
HISTIOCYTIC SARCOMA	1 (2%)			
LYMPHOMA; MALIGNANT			1 (3%)	2 (4%)
ENDOCRINE SYSTEM				
ADRENAL GLAND	(50)	(50)	(38)	(49)
CORTEX, SUBCAPSULAR; ADENOMA				2 (4%)
FIBROSARCOMA; METASTATIC		1 (2%)	1 (3%)	
HEPATOCELLULAR CARCINOMA; METASTATIC			1 (3%)	
HISTIOCYTIC SARCOMA			1 (3%)	
LYMPHOMA; MALIGNANT		1 (2%)		1 (2%)
PHEOCHROMOCYTOMA; MALIGNANT	1 (2%)			2 (4%)
PARATHYROID GLAND	(47)	(44)	(38)	(47)
PITUITARY GLAND	(48)	(46)	(38)	(44)
PARS DISTALIS; ADENOMA	8 (17%)	4 (9%)	1 (3%)	2 (5%)
LYMPHOMA; MALIGNANT			1 (3%)	1 (2%)
THYROID GLAND	(50)	(49)	(40)	(50)
FOLLICULAR CELL; ADENOMA		1 (2%)		3 (6%)
GENERAL BODY SYSTEM				
CAVITY	(0)	(1)	(2)	(3)
PALATE; SQUAMOUS CELL CARCINOMA			1 (50%)	

Female: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
HEMATOPOIETIC SYSTEM				
BONE MARROW	(50)	(50)	(40)	(50)
HEPATOBIILIARY SYSTEM				
GALLBLADDER	(48)	(47)	(39)	(46)
LIVER	(50)	(50)	(38)	(50)
HEMANGIOMA		1 (2%)		
HEMANGIOSARCOMA	1 (2%)			1 (2%)
HEPATOBLASTOMA				1 (2%)
HEPATOCELLULAR ADENOMA; MULTIPLE	1 (2%)	4 (8%)	9 (24%)	22 (44%)
HEPATOCELLULAR ADENOMA	5 (10%)	11 (22%)	11 (29%)	6 (12%)
HEPATOCELLULAR CARCINOMA; MULTIPLE		3 (6%)	2 (5%)	7 (14%)
HEPATOCELLULAR CARCINOMA	7 (14%)	11 (22%)	9 (24%)	13 (26%)
HEPATOCHOLANGIOCARCINOMA		1 (2%)	1 (3%)	
HISTIOCYTIC SARCOMA	4 (8%)	3 (6%)	3 (8%)	4 (8%)
LYMPHOMA; MALIGNANT	5 (10%)	2 (4%)	5 (13%)	4 (8%)
SARCOMA				1 (2%)
SQUAMOUS CELL CARCINOMA; METASTATIC				1 (2%)

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Time Report Requested: 08:55:15

Lab: Battelle with EPL

Female: Core Animals

	Treatment Groups (ppm)			
	0	100	200	400
IMMUNE SYSTEM				
LYMPH NODE	(2)	(4)	(6)	(2)
AXILLARY; FIBROSARCOMA; METASTATIC		1 (25%)		
AXILLARY; HISTIOCYTIC SARCOMA			1 (17%)	
LUMBAR; HISTIOCYTIC SARCOMA		1 (25%)		
HISTIOCYTIC SARCOMA		1 (25%)		
LUMBAR; LYMPHOMA; MALIGNANT	2 (100%)	2 (50%)		1 (50%)
PANCREATIC; LYMPHOMA; MALIGNANT		1 (25%)	2 (33%)	
RENAL; LYMPHOMA; MALIGNANT	2 (100%)	2 (50%)	3 (50%)	1 (50%)
LYMPHOMA; MALIGNANT	1 (50%)			
LYMPH NODE, BRONCHIAL	(46)	(46)	(37)	(44)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC				1 (2%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (3%)	
HISTIOCYTIC SARCOMA	1 (2%)	1 (2%)		
LYMPHOMA; MALIGNANT	2 (4%)	3 (7%)	1 (3%)	1 (2%)
LYMPH NODE, MANDIBULAR	(42)	(47)	(39)	(45)
HISTIOCYTIC SARCOMA		1 (2%)		1 (2%)
LYMPHOMA; MALIGNANT	3 (7%)	3 (6%)	4 (10%)	2 (4%)
LYMPH NODE, MEDIASTINAL	(49)	(47)	(39)	(43)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC				2 (5%)
FIBROSARCOMA; METASTATIC	1 (2%)	1 (2%)	1 (3%)	1 (2%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (3%)	
HISTIOCYTIC SARCOMA		1 (2%)		
LYMPHOMA; MALIGNANT	2 (4%)	4 (9%)	6 (15%)	2 (5%)
OSTEOSARCOMA; METASTATIC			1 (3%)	
SQUAMOUS CELL CARCINOMA; METASTATIC				1 (2%)
LYMPH NODE, MESENTERIC	(48)	(48)	(39)	(44)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (3%)	

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA02: Neoplastic Lesion Summary with Percent Incidence
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

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Female: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
HISTIOCYTIC SARCOMA	2 (4%)	1 (2%)	1 (3%)	
LYMPHOMA; MALIGNANT	3 (6%)	4 (8%)	4 (10%)	4 (9%)
SQUAMOUS CELL CARCINOMA; METASTATIC				1 (2%)
SPLEEN	(50)	(48)	(39)	(50)
HEMANGIOSARCOMA				1 (2%)
HISTIOCYTIC SARCOMA	1 (2%)	2 (4%)	1 (3%)	2 (4%)
LYMPHOMA; MALIGNANT	7 (14%)	2 (4%)	6 (15%)	4 (8%)
SCHWANNOMA; MALIGNANT, METASTATIC				1 (2%)
SQUAMOUS CELL CARCINOMA; METASTATIC				1 (2%)
THYMUS	(49)	(41)	(39)	(42)
FIBROSARCOMA; METASTATIC		1 (2%)		
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (3%)	
LYMPHOMA; MALIGNANT	2 (4%)	2 (5%)	4 (10%)	3 (7%)
INTEGUMENTARY SYSTEM				
SKIN	(50)	(50)	(40)	(50)
FIBROSARCOMA	2 (4%)	5 (10%)	2 (5%)	2 (4%)
HISTIOCYTIC SARCOMA			1 (3%)	
PILOMATRIXOMA				1 (2%)
PLEOMORPHIC FIBROSARCOMA	1 (2%)	1 (2%)	1 (3%)	
SARCOMA		1 (2%)		
SCHWANNOMA; MALIGNANT	1 (2%)			1 (2%)
SCHWANNOMA; MALIGNANT, MULTIPLE	1 (2%)			

Female: Core Animals				
	Treatment Groups (ppm)			
	0	100	200	400
MUSCULOSKELETAL SYSTEM				
BONE	(1)	(0)	(1)	(2)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC				1 (50%)
FIBROSARCOMA; METASTATIC				1 (50%)
FIBROSARCOMA	1 (100%)			
OSTEOSARCOMA			1 (100%)	
BONE, FEMUR	(50)	(50)	(40)	(50)
SKELETAL MUSCLE	(2)	(0)	(2)	(1)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC				1 (100%)
FIBROSARCOMA	1 (50%)			
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (50%)	
OSTEOSARCOMA; METASTATIC			1 (50%)	
NERVOUS SYSTEM				
BRAIN	(50)	(50)	(40)	(50)
LYMPHOMA; MALIGNANT	1 (2%)			
NERVE, SCIATIC	(1)	(0)	(0)	(0)
NERVE, TRIGEMINAL	(1)	(0)	(0)	(0)
SPINAL CORD	(1)	(0)	(0)	(0)

Study Number: C20302B-01**Test Type:** TOX**Route:** Whole-Body Inhalation**Species/Strain:** Mouse/B6C3F1/N**PA02: Neoplastic Lesion Summary with Percent Incidence****Test Compound:** alpha-Pinene**CAS Number:** 80-56-8**Final****Date Report Requested:** 08/08/2024**Time Report Requested:** 08:55:15**Lab:** Battelle with EPL**Female: Core Animals**

	Treatment Groups (ppm)			
	0	100	200	400
REPRODUCTIVE SYSTEM				
CLITORAL GLAND	(47)	(45)	(40)	(48)
MAMMARY GLAND	(48)	(46)	(40)	(48)
ADENOCARCINOMA; MULTIPLE				1 (2%)
ADENOCARCINOMA				4 (8%)
ADENOMA			1 (3%)	
LYMPHOMA; MALIGNANT	2 (4%)			
OVARY	(48)	(49)	(36)	(46)
RETE OVARI; ADENOMA				1 (2%)
CYSTADENOCARCINOMA		1 (2%)		
CYSTADENOMA	1 (2%)			2 (4%)
GRANULOSA CELL TUMOR; BENIGN		2 (4%)	2 (6%)	2 (4%)
GRANULOSA CELL TUMOR; MALIGNANT		1 (2%)		3 (7%)
HISTIOCYTIC SARCOMA	3 (6%)	1 (2%)		
LUTEOMA	1 (2%)		3 (8%)	
LYMPHOMA; MALIGNANT	4 (8%)	2 (4%)	3 (8%)	
SQUAMOUS CELL CARCINOMA; METASTATIC		1 (2%)		1 (2%)
THECOMA; MALIGNANT				1 (2%)
TUBULOSTROMAL ADENOMA			1 (3%)	7 (15%)
UTERINE CERVIX	(49)	(50)	(40)	(50)
HISTIOCYTIC SARCOMA				1 (2%)
SCHWANNOMA; MALIGNANT, METASTATIC				1 (2%)
UTERUS	(50)	(50)	(39)	(50)
ADENOCARCINOMA				1 (2%)
HISTIOCYTIC SARCOMA	2 (4%)			1 (2%)
LYMPHOMA; MALIGNANT	3 (6%)	2 (4%)	1 (3%)	1 (2%)
SCHWANNOMA; MALIGNANT				1 (2%)
VAGINA	(49)	(50)	(40)	(50)

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	Treatment Groups (ppm)			
	0	100	200	400
HISTIOCYTIC SARCOMA				1 (2%)
LYMPHOMA; MALIGNANT			1 (3%)	
SCHWANNOMA; MALIGNANT, METASTATIC				1 (2%)
RESPIRATORY SYSTEM				
LARYNX	(50)	(49)	(39)	(50)
LYMPHOMA; MALIGNANT	1 (2%)			
LUNG	(50)	(50)	(39)	(50)
ADENOCARCINOMA; METASTATIC			1 (3%)	1 (2%)
ALVEOLAR/BRONCHIOLAR ADENOMA; MULTIPLE		1 (2%)	3 (8%)	7 (14%)
ALVEOLAR/BRONCHIOLAR ADENOMA	2 (4%)	7 (14%)	6 (15%)	10 (20%)
ALVEOLAR/BRONCHIOLAR CARCINOMA; MULTIPLE				15 (30%)
ALVEOLAR/BRONCHIOLAR CARCINOMA	1 (2%)	2 (4%)	6 (15%)	8 (16%)
FIBROSARCOMA; METASTATIC		2 (4%)		1 (2%)
HEPATOCELLULAR CARCINOMA; METASTATIC	1 (2%)	6 (12%)	2 (5%)	5 (10%)
HEPATOCHOLANGIOCARCINOMA; METASTATIC			1 (3%)	
HISTIOCYTIC SARCOMA	3 (6%)	2 (4%)	2 (5%)	1 (2%)
LYMPHOMA; MALIGNANT	4 (8%)	1 (2%)	3 (8%)	3 (6%)
PLEURA; OSTEOSARCOMA; METASTATIC			1 (3%)	
OSTEOSARCOMA; METASTATIC			1 (3%)	
SCHWANNOMA; MALIGNANT, METASTATIC				1 (2%)
SQUAMOUS CELL CARCINOMA; METASTATIC				1 (2%)
NOSE	(50)	(49)	(38)	(49)
TRACHEA	(49)	(50)	(40)	(49)

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Female: Core Animals				
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	0	100	200	400
SPECIAL SENSES SYSTEM				
EYE	(49)	(50)	(40)	(50)
HARDERIAN GLAND	(50)	(49)	(40)	(50)
ADENOCARCINOMA	1 (2%)	2 (4%)	3 (8%)	6 (12%)
BILATERAL; ADENOMA		2 (4%)	1 (3%)	3 (6%)
ADENOMA	3 (6%)	4 (8%)	10 (25%)	13 (26%)
HISTIOCYTIC SARCOMA		1 (2%)		
LYMPHOMA; MALIGNANT	1 (2%)			
ZYMBAL'S GLAND	(0)	(1)	(0)	(1)
SQUAMOUS CELL CARCINOMA		1 (100%)		
URINARY SYSTEM				
KIDNEY	(50)	(49)	(40)	(50)
RENAL TUBULE; ADENOMA				1 (2%)
ALVEOLAR/BRONCHIOLAR CARCINOMA; METASTATIC			1 (3%)	1 (2%)
RENAL TUBULE; CARCINOMA				1 (2%)
HISTIOCYTIC SARCOMA				1 (2%)
LYMPHOMA; MALIGNANT	2 (4%)	4 (8%)	3 (8%)	4 (8%)
URINARY BLADDER	(45)	(43)	(34)	(46)
LYMPHOMA; MALIGNANT	2 (4%)	3 (7%)	1 (3%)	1 (2%)
SCHWANNOMA; MALIGNANT, METASTATIC				1 (2%)
SYSTEMIC LESIONS				
Multiple Organ(a)	(50)	(50)	(40)	(50)
HEMANGIOSARCOMA	1 (2%)			1 (2%)
HISTIOCYTIC SARCOMA	4 (8%)	3 (6%)	4 (10%)	4 (8%)
LYMPHOMA	7 (14%)	5 (10%)	10 (25%)	6 (12%)

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Tumor Summary Data for Female Core Animals	Treatment Groups (ppm)			
	0	100	200	400
Total Animals with Primary Neoplasms	0	0	0	0
Total Primary Neoplasms	0	0	0	0
Total Animals with Benign Neoplasms	18	29	27	43
Total Benign Neoplasms	22	37	48	84
Total Animals with Malignant Neoplasms	25	27	28	45
Total Malignant Neoplasms	91	101	107	156
Total Animals with Metastatic Neoplasms	2	9	8	14
Total Metastatic Neoplasms	2	13	20	32
Total Animals with Malignant Neoplasms Uncertain Primary Site	0	0	0	0

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LEGEND

Censored animals are animals not in one of the other disposition categories that are removed prior to the end of the study. The censored animals are included in the pathology data if microscopic examination of tissues was performed.

Number of animals examined given for each tissue.

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

(a) - Number of animals with any tissue examined microscopically. Systemic lesions are included once in the total lesion count regardless of how many times they occurred in a single animal.

**** END OF REPORT ****