

## Lesions in Female Rats

B-29

**TABLE B4**  
**Summary of the Incidence of Nonneoplastic Lesions in Female Rats in the Lifetime Inhalation Study of Talc<sup>a</sup>**

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Disposition Summary</b>			
Animals initially in study	50	50	50
Early deaths			
Moribund	28	17	27
Natural deaths	11	19	14
Survivors			
Terminal sacrifice	11	13	9
Missing		1	
Animals examined microscopically	50	49	50
<b>Alimentary System</b>			
Intestine large, cecum	(46)	(34)	(43)
Hemorrhage, focal		1 (3%)	
Inflammation	11 (24%)	1 (3%)	6 (14%)
Parasite metazoan	7 (15%)	3 (9%)	6 (14%)
Ulcer	1 (2%)	1 (3%)	1 (2%)
Intestine large, colon	(48)	(41)	(45)
Inflammation		1 (2%)	2 (4%)
Parasite metazoan	2 (4%)	3 (7%)	3 (7%)
Intestine large, rectum	(38)	(37)	(41)
Inflammation	4 (11%)		
Parasite metazoan	2 (5%)	1 (3%)	1 (2%)
Intestine small, duodenum	(48)	(44)	(47)
Necrosis, focal	1 (2%)		
Intestine small, ileum	(44)	(32)	(38)
Hyperplasia, lymphoid	2 (5%)		
Liver	(50)	(48)	(50)
Atrophy		1 (2%)	1 (2%)
Basophilic focus	27 (54%)	17 (35%)	21 (42%)
Clear cell focus	1 (2%)	2 (4%)	1 (2%)
Cyst multilocular	1 (2%)		
Degeneration, cystic		2 (4%)	1 (2%)
Eosinophilic focus	2 (4%)	5 (10%)	4 (8%)
Fatty change	18 (36%)	18 (38%)	14 (28%)
Hematopoietic cell proliferation	1 (2%)		
Infiltration cellular, mononuclear cell			1 (2%)
Inflammation, granulomatous, focal	13 (26%)	3 (6%)	4 (8%)
Inflammation, necrotizing, focal		1 (2%)	
Inflammation, suppurative	1 (2%)		
Necrosis, focal	5 (10%)	1 (2%)	2 (4%)
Pigmentation, hemosiderin	1 (2%)		
Thrombosis			1 (2%)
Bile duct, hyperplasia	36 (72%)	38 (79%)	36 (72%)
Centrilobular, atrophy		2 (4%)	6 (12%)
Centrilobular, degeneration	10 (20%)	14 (29%)	10 (20%)
Centrilobular, necrosis	2 (4%)	2 (4%)	2 (4%)
Hepatocyte, atrophy, focal			1 (2%)
Serosa, thrombosis		3 (6%)	
Mesentery	(1)	(2)	
Granuloma	1 (100%)	1 (50%)	
Inflammation, chronic active		1 (50%)	

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Talc, NTP TR 421

**TABLE B4**  
**Summary of the Incidence of Nonneoplastic Lesions in Female Rats in the Lifetime Inhalation Study of Talc**  
(continued)

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Alimentary System (continued)</b>			
Pancreas	(50)	(46)	(49)
Hyperplasia, nodular	1 (2%)		
Inflammation		1 (2%)	
Lobules, atrophy	7 (14%)	7 (15%)	9 (18%)
Salivary glands	(50)	(48)	(50)
Inflammation	2 (4%)		
Stomach, forestomach	(50)	(45)	(49)
Hyperkeratosis	1 (2%)		1 (2%)
Inflammation	1 (2%)		2 (4%)
Mineralization		1 (2%)	
Ulcer	9 (18%)	4 (9%)	3 (6%)
Stomach, glandular	(50)	(47)	(50)
Erosion			1 (2%)
Inflammation	1 (2%)	1 (2%)	
Mineralization	2 (4%)	2 (4%)	2 (4%)
Ulcer	3 (6%)	2 (4%)	3 (6%)
Ulcer, multiple	1 (2%)		1 (2%)
Arteriole, muscularis, lamina propria, mineralization		1 (2%)	
<b>Cardiovascular System</b>			
Blood vessel	(3)	(3)	(1)
Aorta, mineralization		3 (100%)	1 (100%)
Mesenteric artery, aneurysm	1 (33%)		
Mesenteric artery, inflammation	3 (100%)		
Mesenteric artery, mineralization		1 (33%)	1 (100%)
Mesenteric artery, thrombosis	1 (33%)	1 (33%)	
Heart	(50)	(48)	(50)
Cardiomyopathy	35 (70%)	40 (83%)	36 (72%)
Inflammation, focal	1 (2%)		1 (2%)
Atrium, thrombosis	5 (10%)	8 (17%)	5 (10%)
Myocardium, embolus		2 (4%)	
Myocardium, inflammation, focal		1 (2%)	
Myocardium, mineralization	1 (2%)	4 (8%)	3 (6%)
<b>Endocrine System</b>			
Adrenal gland, cortex	(50)	(47)	(49)
Degeneration, cystic	1 (2%)		
Degeneration, fatty	3 (6%)		
Degeneration, focal	1 (2%)	1 (2%)	
Hyperplasia, diffuse		1 (2%)	1 (2%)
Hyperplasia, focal	9 (18%)	12 (26%)	13 (27%)
Necrosis			2 (4%)
Necrosis, focal	1 (2%)	1 (2%)	
Pigmentation, hemosiderin	1 (2%)		
Adrenal gland, medulla	(48)	(47)	(49)
Cyst	1 (2%)		
Hyperplasia	20 (42%)	18 (38%)	14 (29%)
Bilateral, hyperplasia	2 (4%)	2 (4%)	2 (4%)
Parathyroid gland	(43)	(42)	(47)
Hyperplasia	3 (7%)	4 (10%)	2 (4%)
Bilateral, hyperplasia	1 (2%)		

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## Lesions in Female Rats

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**TABLE B4**  
**Summary of the Incidence of Nonneoplastic Lesions in Female Rats in the Lifetime Inhalation Study of Talc**  
 (continued)

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Endocrine System (continued)</b>			
Pituitary gland	(50)	(47)	(50)
Cyst	2 (4%)		1 (2%)
Pars distalis, hyperplasia	10 (20%)	6 (13%)	4 (8%)
Pars distalis, necrosis			1 (2%)
Thyroid gland	(50)	(47)	(49)
C-cell, hyperplasia	10 (20%)	8 (17%)	4 (8%)
<b>General Body System</b>			
None			
<b>Genital System</b>			
Clitoral gland	(47)	(44)	(46)
Hyperplasia	2 (4%)		1 (2%)
Inflammation	1 (2%)	1 (2%)	1 (2%)
Ovary	(50)	(47)	(50)
Cyst	5 (10%)		1 (2%)
Uterus	(50)	(48)	(50)
Cyst	1 (2%)	1 (2%)	1 (2%)
Inflammation	1 (2%)	1 (2%)	
Endometrium, hyperplasia	3 (6%)		
Lamina propria, fibrosis	20 (40%)	39 (81%)	19 (38%)
<b>Hematopoietic System</b>			
Bone marrow	(50)	(43)	(49)
Atrophy	1 (2%)	2 (5%)	1 (2%)
Hyperplasia, histiocytic	1 (2%)		1 (2%)
Inflammation, granulomatous, focal	1 (2%)		
Myelofibrosis	1 (2%)	3 (7%)	3 (6%)
Necrosis, focal		1 (2%)	
Myeloid cell, hyperplasia	2 (4%)	2 (5%)	3 (6%)
Lymph node	(50)	(48)	(50)
Axillary, hemorrhage, chronic			1 (2%)
Lymph node, bronchial	(46)	(47)	(47)
Cyst	1 (2%)		
Fibrosis		1 (2%)	
Hemorrhage, chronic		1 (2%)	
Hyperplasia, histiocytic		40 (85%)	45 (96%)
Inflammation, suppurative	1 (2%)		
Pigmentation, hemosiderin	1 (2%)		
Lymph node, mandibular	(47)	(46)	(47)
Hyperplasia, lymphoid		1 (2%)	1 (2%)
Hyperplasia, plasma cell	2 (4%)	1 (2%)	1 (2%)
Inflammation, chronic active	1 (2%)		1 (2%)
Inflammation, suppurative			1 (2%)
Lymph node, mediastinal	(47)	(44)	(47)
Hemorrhage, chronic	1 (2%)		
Hyperplasia, histiocytic		33 (75%)	40 (85%)
Hyperplasia, lymphoid	1 (2%)		1 (2%)
Inflammation, chronic active			1 (2%)
Inflammation, suppurative	1 (2%)	1 (2%)	

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**TABLE B4**  
**Summary of the Incidence of Nonneoplastic Lesions in Female Rats in the Lifetime Inhalation Study of Talc**  
(continued)

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Hematopoietic System (continued)</b>			
Lymph node, mesenteric	(49)	(47)	(47)
Hemorrhage		1 (2%)	
Hyperplasia, lymphoid	2 (4%)	1 (2%)	2 (4%)
Hyperplasia, plasma cell	1 (2%)		
Inflammation, chronic active	4 (8%)	1 (2%)	
Inflammation, granulomatous			1 (2%)
Spleen	(50)	(48)	(50)
Atrophy	2 (4%)	2 (4%)	2 (4%)
Fibrosis, focal	3 (6%)	1 (2%)	1 (2%)
Hematopoietic cell proliferation	4 (8%)	6 (13%)	7 (14%)
Hyperplasia, lymphoid			1 (2%)
Inflammation, granulomatous, focal	1 (2%)		
Pigmentation, hemosiderin	2 (4%)		
Capsule, hemorrhage			1 (2%)
Thymus	(47)	(44)	(47)
Inflammation	1 (2%)		
<b>Integumentary System</b>			
Mammary gland	(50)	(48)	(50)
Galactocele		1 (2%)	
Hyperplasia, cystic		2 (4%)	
Lobules, hyperplasia			1 (2%)
Skin	(50)	(49)	(50)
Inflammation, focal	1 (2%)		
<b>Musculoskeletal System</b>			
Bone	(50)	(48)	(50)
Fibrous osteodystrophy	4 (8%)	3 (6%)	4 (8%)
Hyperostosis	4 (8%)	1 (2%)	3 (6%)
Pelvis, fracture	1 (2%)		
Vertebra, cyst	1 (2%)		
<b>Nervous System</b>			
Brain	(50)	(48)	(50)
Compression	8 (16%)	7 (15%)	9 (18%)
Hemorrhage		1 (2%)	1 (2%)
Hydrocephalus			1 (2%)
Inflammation, focal		1 (2%)	
White matter, necrosis, focal			2 (4%)
<b>Respiratory System</b>			
Larynx	(50)	(48)	(48)
Inflammation, necrotizing			1 (2%)
Inflammation, suppurative	2 (4%)	1 (2%)	1 (2%)
Lung	(50)	(48)	(50)
Crystals, focal	1 (2%)		
Cyst		1 (2%)	5 (10%)
Cyst, multiple			2 (4%)
Edema	1 (2%)		
Hemorrhage		1 (2%)	1 (2%)
Hyperplasia, adenomatous, diffuse			2 (4%)

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## Lesions in Female Rats

B-33

**TABLE B4**  
**Summary of the Incidence of Nonneoplastic Lesions in Female Rats in the Lifetime Inhalation Study of Talc**  
 (continued)

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Respiratory System (continued)</b>			
<b>Lung (continued)</b>			
Inflammation, granulomatous	2 (4%)	47 (98%)	50 (100%)
Inflammation, suppurative	2 (4%)	1 (2%)	
Mineralization		2 (4%)	
Alveolar epithelium, hyperplasia	2 (4%)	27 (56%)	47 (94%)
Alveolus, metaplasia, squamous			8 (16%)
Bronchus, epithelium, degeneration, focal	1 (2%)		
Interstitialium, fibrosis			1 (2%)
Interstitialium, fibrosis, focal	1 (2%)	24 (50%)	44 (88%)
Interstitialium, mineralization		1 (2%)	1 (2%)
Peribronchial, hyperplasia, histiocytic		8 (17%)	9 (18%)
<b>Nose</b>	<b>(48)</b>	<b>(45)</b>	<b>(48)</b>
Inflammation, suppurative		1 (2%)	
Lumen, foreign body			1 (2%)
Mucosa, inflammation, suppurative		3 (7%)	5 (10%)
Nasolacrimal duct, inflammation, suppurative	1 (2%)		
Nerve, developmental malformation	1 (2%)		
Olfactory epithelium, metaplasia		1 (2%)	
Respiratory epithelium, hyperplasia	1 (2%)	1 (2%)	2 (4%)
Respiratory epithelium, metaplasia, squamous		1 (2%)	
<b>Trachea</b>	<b>(50)</b>	<b>(48)</b>	<b>(50)</b>
Inflammation, necrotizing			1 (2%)
Inflammation, suppurative	3 (6%)	1 (2%)	2 (4%)
<b>Special Senses System</b>			
<b>Eye</b>			
	(2)		(2)
Cataract	2 (100%)		2 (100%)
Retina, degeneration	2 (100%)		2 (100%)
<b>Harderian gland</b>			
	(5)	(7)	(15)
Inflammation	4 (80%)	3 (43%)	3 (20%)
<b>Urinary System</b>			
<b>Kidney</b>			
	(49)	(47)	(49)
Abscess	1 (2%)		
Cyst		1 (2%)	1 (2%)
Cyst, multiple	1 (2%)		
Embolus, multiple		1 (2%)	
Infarct	1 (2%)		
Infarct, multiple			1 (2%)
Inflammation	1 (2%)	1 (2%)	
Nephropathy	44 (90%)	43 (91%)	42 (86%)
Capsule, inflammation		1 (2%)	
Medulla, inflammation		1 (2%)	1 (2%)
Renal tubule, necrosis	1 (2%)		2 (4%)
<b>Urinary bladder</b>	<b>(50)</b>	<b>(45)</b>	<b>(50)</b>
Inflammation			1 (2%)

<sup>a</sup> Incidences are expressed as the ratio of animals with lesions to the number of animals examined microscopically at the site.

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**B-34**

**Talc, NTP TR 421**

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**APPENDIX C  
SUMMARY OF LESIONS IN MALE MICE  
IN THE 2-YEAR INHALATION STUDY  
OF TALC**

<b>TABLE C1</b>	<b>Summary of the Incidence of Neoplasms in Male Mice in the 2-Year Inhalation Study of Talc</b>	<b>C-3</b>
<b>TABLE C2</b>	<b>Individual Animal Tumor Pathology of Male Mice in the 2-Year Inhalation Study of Talc</b>	<b>C-6</b>
<b>TABLE C3</b>	<b>Statistical Analysis of Primary Neoplasms in Male Mice in the 2-Year Inhalation Study of Talc</b>	<b>C-24</b>
<b>TABLE C4</b>	<b>Summary of the Incidence of Nonneoplastic Lesions in Male Mice in the 2-Year Inhalation Study of Talc</b>	<b>C-28</b>

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## Lesions in Male Mice

C-3

TABLE C1  
Summary of the Incidence of Neoplasms in Male Mice in the 2-Year Inhalation Study of Tale<sup>a</sup>

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Disposition Summary</b>			
Animals initially in study	50	50	50
Early deaths			
Moribund	1	2	3
Natural deaths	16	18	14
Survivors			
Terminal sacrifice	30	28	32
Missed	1	1	0
Missing	2	1	1
Animals examined microscopically	46	47	49
<b>Alimentary System</b>			
Gallbladder	(31)	(29)	(35)
Intestine large, colon	(36)	(38)	(39)
Intestine small, duodenum	(32)	(30)	(34)
Intestine small, ileum	(33)	(32)	(35)
Adenocarcinoma		1 (3%)	
Liver	(45)	(47)	(48)
Hemangiosarcoma	1 (2%)		1 (2%)
Hemangiosarcoma, metastatic, spleen	1 (2%)		
Hepatocellular carcinoma	6 (13%)	5 (11%)	11 (23%)
Hepatocellular adenoma	1 (2%)	8 (17%)	4 (8%)
Hepatocellular adenoma, multiple	2 (4%)	1 (2%)	
Pancreas	(42)	(39)	(42)
Hepatocellular carcinoma, metastatic, liver	1 (2%)		
Salivary glands	(45)	(46)	(47)
Stomach, glandular	(39)	(43)	(43)
<b>Cardiovascular System</b>			
Heart	(45)	(46)	(49)
Alveolar/bronchiolar carcinoma, metastatic, lung			1 (2%)
<b>Endocrine System</b>			
Adrenal gland	(43)	(46)	(47)
Spindle cell, adenoma	1 (2%)	1 (2%)	1 (2%)
Adrenal gland, cortex	(43)	(46)	(47)
Adenoma		1 (2%)	1 (2%)
Adrenal gland, medulla	(39)	(39)	(42)
Pheochromocytoma malignant	1 (3%)		
Pituitary gland	(44)	(44)	(46)
Adenoma	1 (2%)		
Pars intermedia, adenoma		2 (5%)	
Thyroid gland	(45)	(46)	(45)
Follicular cell, adenoma			2 (4%)
<b>General Body System</b>			
Tissue NOS		(3)	(2)
Hemangioma			1 (50%)
Hemangiosarcoma, metastatic, spleen			1 (50%)

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C-4

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**TABLE C1**  
**Summary of the Incidence of Neoplasms in Male Mice in the 2-Year Inhalation Study of Talc (continued)**

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Genital System</b>			
Epididymis	(39)	(39)	(42)
Prostate	(40)	(43)	(44)
Seminal vesicle	(41)	(43)	(39)
Testes	(43)	(44)	(45)
Hemangiosarcoma	1 (2%)		
<b>Hematopoietic System</b>			
Bone marrow	(40)	(42)	(43)
Hemangiosarcoma, metastatic, spleen	1 (3%)		
Lymph node	(45)	(46)	(48)
Lymph node, bronchial	(32)	(39)	(44)
Alveolar/bronchiolar carcinoma, metastatic, lung			1 (2%)
Lymph node, mandibular	(23)	(23)	(19)
Hemangiosarcoma, metastatic, spleen			1 (5%)
Lymph node, mediastinal	(9)	(10)	(7)
Lymph node, mesenteric	(36)	(39)	(40)
Hemangiosarcoma, metastatic, spleen			1 (3%)
Spleen	(44)	(44)	(47)
Hemangiosarcoma	2 (5%)		2 (4%)
Thymus	(34)	(33)	(40)
Alveolar/bronchiolar carcinoma, metastatic, lung			1 (3%)
<b>Integumentary System</b>			
None			
<b>Musculoskeletal System</b>			
Bone	(46)	(47)	(49)
Hemangiosarcoma, metastatic, spleen			1 (2%)
Skeletal muscle			(1)
Thoracic, alveolar/bronchiolar carcinoma, metastatic, lung			1 (100%)
<b>Nervous System</b>			
None			
<b>Respiratory System</b>			
Lung	(45)	(47)	(48)
Alveolar/bronchiolar adenoma	6 (13%)	4 (9%)	7 (15%)
Alveolar/bronchiolar adenoma, multiple			2 (4%)
Alveolar/bronchiolar carcinoma	6 (13%)	2 (4%)	2 (4%)
Alveolar/bronchiolar carcinoma, multiple	1 (2%)		
Hemangiosarcoma, metastatic, liver	1 (2%)		
Hemangiosarcoma, metastatic, spleen			1 (2%)
Hepatocellular carcinoma, metastatic, liver		1 (2%)	2 (4%)
<b>Special Senses System</b>			
Harderian gland	(1)		(4)
Adenoma	1 (100%)		4 (100%)

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## Lesions in Male Mice

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**TABLE C1**  
**Summary of the Incidence of Neoplasms in Male Mice in the 2-Year Inhalation Study of Talc (continued)**

	0 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>	18 mg/m <sup>3</sup>
<b>Urinary System</b>			
<i>Kidney</i>	(45)	(46)	(48)
Carcinoma, metastatic, uncertain primary site	1 (2%)		
<i>Urinary bladder</i>	(43)	(38)	(43)
Sarcoma	1 (2%)		
<b>Systemic Lesions</b>			
<i>Multiple organs<sup>b</sup></i>	(46)	(47)	(49)
Lymphoma malignant lymphocytic		1 (2%)	
Lymphoma malignant mixed	2 (4%)		
Lymphoma malignant undifferentiated cell	3 (7%)		
<b>Tumor Summary</b>			
Total animals with primary neoplasms <sup>c</sup>	26	20	28
Total primary neoplasms	36	26	38
Total animals with benign neoplasms	11	16	18
Total benign neoplasms	12	17	22
Total animals with malignant neoplasms	20	8	15
Total malignant neoplasms	24	9	16
Total animals with metastatic neoplasms	4	1	4
Total metastatic neoplasms	5	1	11
Total animals with malignant neoplasms, uncertain primary site	1		

<sup>a</sup> Incidences are expressed as the ratio of animals with lesions to the number of animals examined microscopically at the site.

<sup>b</sup> Number of animals with any tissue examined microscopically

<sup>c</sup> Primary tumors: all tumors except metastatic tumors

C-6

Talc, NTP TR 421

**TABLE C2**  
**Individual Animal Tumor Pathology of Male Mice in the 2-Year Inhalation Study of Talc: 0 mg/m<sup>3</sup>**

Number of Days on Study	0 4 4 4 4 5 5 5 5 5 5 5 6 6 6 7 7 7 7 7 7
	0 3 3 8 8 1 4 7 7 8 8 8 2 7 8 1 3 3 3 3 3
	8 2 7 4 6 8 3 1 9 5 7 7 9 7 4 0 6 6 6 6 6
Carcass ID Number	4 3 4 5 3 3 4 4 5 3 4 5 5 4 4 5 3 3 3 3 3
	3 9 5 1 7 7 9 0 1 9 8 1 2 9 5 1 6 6 6 7 7
	5 1 4 2 4 2 4 5 5 5 9 8 3 3 5 7 1 4 7 0 1 5
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
<b>Alimentary System</b>	
Esophagus	M M + M + + + + M + M + + + + + + + + +
Gallbladder	M M M M A A A A M + + A A + + A M + M + + +
Intestine large	A + A A A A A A + + A + + + A + + + + + +
Intestine large, cecum	A + A A A A A A + A A A + + A + + + + + +
Intestine large, colon	A + A A A A A A + + A + + + A + + + + + +
Intestine large, rectum	A + A A A A A A + A A M M + A + + + + + +
Intestine small	A + A A A A A A + A A A + + A + + + + + +
Intestine small, duodenum	A A A A A A A A + A A A + + A + + + + + +
Intestine small, ileum	A + A A A A A A + A A A A + A + + + + + +
Intestine small, jejunum	A + A A A A A A + A A A A + A + + + + + +
Liver	A + + + + + + + + + + + + + + + + + + + +
Hemangiosarcoma	
Hemangiosarcoma, metastatic, spleen	
Hepatocellular carcinoma	
Hepatocellular adenoma	
Hepatocellular adenoma, multiple	
Pancreas	M + + + + A + A + + + + + + + A + + + + + +
Hepatocellular carcinoma, metastatic, liver	
Salivary glands	A + + + + + + + + + + + + + + + + + + + +
Stomach	A + + + + + + + + + + + + + + + + + + + +
Stomach, forestomach	A + + + + + + + I + + M + + + + + + + + +
Stomach, glandular	A + A + A M + A + + + A + + + + + + + + +
<b>Cardiovascular System</b>	
Heart	A + + + + + + + + + + + + + + + + + + + +
<b>Endocrine System</b>	
Adrenal gland	A + + + M + + + + + + + + + + I + + + + + +
Spindle cell, adenoma	
Adrenal gland, cortex	A + + + M + + + + + + + + + + I + + + + + +
Adrenal gland, medulla	A + + + M M + + + + + + I + + + M + + + + M
Pheochromocytoma malignant	
Islets, pancreatic	M + I + + M + A + M + A + I M I + + + + + M
Parathyroid gland	M M M + M M M + + + + + + M + + + M M M + M
Pituitary gland	M + + + + + + + + + + + + + + + + + + + +
Adenoma	
Thyroid gland	A + + + + + + + + + + + + + + + + + + + +

+ : Tissue examined microscopically  
A : Autolysis precludes examination

M : Missing tissue  
I : Insufficient tissue

X : Lesion present  
Blank : Not examined

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C-8

Talc, NTP TR 421

**TABLE C2**  
**Individual Animal Tumor Pathology of Male Mice in the 2-Year Inhalation Study of Talc: 0 mg/m<sup>3</sup> (continued)**

<b>Number of Days on Study</b>	0 4 4 4 4 5 5 5 5 5 5 5 6 6 6 7 7 7 7 7 7 7
	0 3 3 8 8 1 4 7 7 8 8 8 2 7 8 1 3 3 3 3 3 3
	8 2 7 4 6 8 3 1 9 5 7 7 9 7 4 0 6 6 6 6 6 6
<b>Carcass ID Number</b>	4 3 4 5 3 3 4 4 5 3 4 5 5 4 4 5 3 3 3 3 3 3
	3 9 5 1 7 7 9 0 1 9 8 1 2 9 5 1 6 6 6 7 7 7
	5 1 4 2 4 2 4 5 5 5 9 8 3 3 5 7 1 4 7 0 1 5
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
<b>General Body System</b>	
None	
<b>Genital System</b>	
Epididymis	+ + + M + + + + + + + + + M + + M + + M I
Preputial gland	+ + + + + + + + + + + + + + + + + + + + +
Prostate	M + M M + I + + + + + + + + + I + + + + + + + +
Seminal vesicle	+ + + A + M + + + + + + + + A A + + A + + + + + + +
Testes	A + + M + + + A + + + + + + + + + + + + + + + + +
Hemangiosarcoma	
<b>Hematopoietic System</b>	
Bone marrow	A + A + + A + A + A + A + + + + + + + + + + +
Hemangiosarcoma, metastatic, spleen	
Lymph node	M + + + + + + + + + + + + + + + + + + + + + +
Lymph node, bronchial	M M + I + + M + + + + + I I + + + + + + + + + +
Lymph node, mandibular	M M M M + M + M M M M M M + M M M + M M + +
Lymph node, mediastinal	M M M M I M + M M + M M M M M M M M M M +
Lymph node, mesenteric	M + A M + M + M + + M A + + + + + + + + + I M
Spleen	A + + + + + + + + + + + + + + + + + + + + + +
Hemangiosarcoma	
Thymus	M I M M + M M A + M + + + I + + M + + + + + +
<b>Integumentary System</b>	
Mammary gland	M M M M M M M + M + M I M M M M M M M M M M
Skin	+ + + + + + + + + + + + + + + M + + + + + + + + +
<b>Musculoskeletal System</b>	
Bone	+ + + + + + + + + + + + + + + + + + + + + + +
<b>Nervous System</b>	
Brain	+ + + + + + + + + + + + + + + + + + + + + + +



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**TABLE C2**  
**Individual Animal Tumor Pathology of Male Mice in the 2-Year Inhalation Study of Talc: 0 mg/m<sup>3</sup> (continued)**

<b>Number of Days on Study</b>	0 4 4 4 4 5 5 5 5 5 5 5 6 6 6 7 7 7 7 7 7 7
	0 3 3 8 8 1 4 7 7 8 8 8 2 7 8 1 3 3 3 3 3 3
	8 2 7 4 6 8 3 1 9 5 7 7 9 7 4 0 6 6 6 6 6 6
<b>Carcass ID Number</b>	4 3 4 5 3 3 4 4 5 3 4 5 5 4 4 5 3 3 3 3 3 3
	3 9 5 1 7 7 9 0 1 9 8 1 2 9 5 1 6 6 6 7 7 7
	5 1 4 2 4 2 4 5 5 5 9 8 3 3 5 7 1 4 7 0 1 5
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
<b>Respiratory System</b>	
Larynx	A + + + + + + A + + + + + + + + + + I + +
Lung	A + + + + + + + + + + + + + + + + + + + +
Alveolar/bronchiolar adenoma	
Alveolar/bronchiolar carcinoma	
Alveolar/bronchiolar carcinoma, multiple	
Hemangioma, metastatic, liver	
Nose	+ + + + + + + A + + + + + + + + + + + + + +
Trachea	A + A + + + + + + + + + + + + + + A + + + + + +
<b>Special Senses System</b>	
Ear	
Harderian gland	
Adenoma	
<b>Urinary System</b>	
Kidney	A + + + + + + + + + + + + + + + + + + + +
Carcinoma, metastatic, uncertain primary site	
Urinary bladder	A + + A + + + A + + + + + + + + + + + + + +
Sarcoma	
<b>Systemic Lesions</b>	
Multiple organs	+ + + + + + + + + + + + + + + + + + + +
Lymphoma malignant mixed	
Lymphoma malignant undifferentiated cell type	

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Lesions in Male Mice

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**TABLE C2**  
**Individual Animal Tumor Pathology of Male Mice in the 2-Year Inhalation Study of Talc: 0 mg/m<sup>3</sup> (continued)**

Number of Days on Study	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4	
	6 7 7 7 7 7 7 8 8 8 8 8 8 9 9 9 9 0 0 0 0 0 0 0	
Carcass ID Number	3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 3 4 4 4 4 5 5	Total Tissues/ Tumors
	9 9 0 0 2 2 2 3 3 5 5 5 6 8 8 9 1 9 2 2 8 8 2 2	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
<b>Respiratory System</b>		
Larynx	I + + + + + + + + + + + + + + + + + + + + + + +	42
Lung	+ + + + + + + + + + + + + + + + + + + + + + +	45
Alveolar/bronchiolar adenoma	X X X          X X	6
Alveolar/bronchiolar carcinoma	X X X	6
Alveolar/bronchiolar carcinoma, multiple		1
Hemangiosarcoma, metastatic, liver		1
Nose	+ + + + + + + + + + + + + + + + + + + + + + +	45
Trachea	+ + M + + + + + + + + + + + + + + + + + + + + + +	42
<b>Special Senses System</b>		
Ear		1
Harderian gland		1
Adenoma		1
<b>Urinary System</b>		
Kidney	+ + + + + + + + + + + + + + + + + + + + + + +	45
Carcinoma, metastatic, uncertain primary site		1
Urinary bladder	+ + + + + + + + + + + + + + + + + + + + + + +	43
Sarcoma		1
<b>Systemic Lesions</b>		
Multiple organs	+ + + + + + + + + + + + + + + + + + + + + + +	46
Lymphoma malignant mixed		2
Lymphoma malignant undifferentiated cell type	X                  X                  X	3

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**TABLE C2  
Individual Animal Tumor Pathology of Male Mice in the 2-Year Inhalation Study of Talc: 6 mg/m<sup>3</sup>**

Number of Days on Study	2	2	3	4	5	5	5	5	5	5	6	6	6	6	6	6	7	7	7	7	7	7	7
	5	5	4	2	4	5	5	8	9	9	2	2	3	8	8	8	1	1	2	3	3	3	3
	3	3	4	3	6	0	8	4	0	1	4	6	3	1	5	8	0	9	2	6	6	6	6
<b>Carcass ID Number</b>	0	1	0	0	1	1	0	1	1	1	0	0	0	1	1	0	0	1	1	0	0	0	0
	3	3	4	0	2	6	4	5	5	2	4	7	3	5	0	6	1	5	3	0	0	0	0
	5	3	2	7	1	4	0	1	6	9	1	4	8	7	0	1	5	4	2	1	4	5	8
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Alimentary System</b>																							
Esophagus	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gallbladder	A	M	I	M	A	A	A	A	+	A	+	I	A	A	A	+	A	A	M	+	+	+	+
Intestine large	A	+	+	A	A	A	A	+	A	+	+	A	+	A	+	+	+	+	+	+	+	+	+
Intestine large, cecum	A	A	+	A	A	A	A	+	A	+	A	+	A	+	A	+	+	+	+	+	+	+	+
Intestine large, colon	A	+	+	A	A	A	A	+	A	+	+	A	+	A	+	+	+	+	+	+	+	+	+
Intestine large, rectum	A	+	+	A	A	M	A	+	A	+	+	A	+	A	+	+	M	+	+	+	+	+	+
Intestine small	A	A	+	A	A	A	A	+	A	+	+	A	+	A	+	A	+	A	+	+	+	+	+
Intestine small, duodenum	A	A	+	A	A	A	A	+	A	+	+	A	+	A	+	A	+	A	+	+	+	+	+
Intestine small, ileum	A	A	+	A	A	A	A	+	A	+	+	A	+	A	+	A	+	A	+	+	+	+	+
Adenocarcinoma																							
Intestine small, jejunum	A	A	+	A	A	A	A	+	A	+	A	+	A	+	A	+	A	A	+	+	+	+	+
Liver	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hepatocellular carcinoma				X	X							X				X							
Hepatocellular adenoma												X				X							X
Hepatocellular adenoma, multiple																							
Pancreas	M	A	+	A	M	A	M	+	+	+	+	M	+	+	+	+	+	+	+	+	+	+	+
Salivary glands	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Stomach	+	+	+	A	+	A	A	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+
Stomach, forestomach	+	+	+	A	+	A	A	+	+	+	+	I	A	+	+	+	+	+	+	+	+	+	+
Stomach, glandular	+	+	+	A	+	A	A	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+
Tooth																							
<b>Cardiovascular System</b>																							
Heart	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<b>Endocrine System</b>																							
Adrenal gland	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Spindle cell, adenoma																							
Adrenal gland, cortex	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Adenoma																							
Adrenal gland, medulla	A	+	+	+	+	+	+	+	+	+	I	+	+	M	+	+	+	+	M	M	+	+	+
Islets, pancreatic	M	A	M	A	M	M	+	+	+	+	M	+	I	M	+	+	+	+	M	+	+	+	M
Parathyroid gland	M	M	M	+	I	M	M	M	+	+	M	M	+	+	+	+	+	M	M	+	M	M	M
Pituitary gland	+	+	I	+	M	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Pars intermedia, adenoma																							X
Thyroid gland	+	+	+	+	+	+	+	I	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

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