GROSS PATHOLOGY ONLY

COATED MICA FLAKE PIGMENT

The Pathogenic Action Resulting From a Single Inhalation Exposure

Male CRCD Rats

MR-582 - H-2978 - P-112

The sample of coated mica flakes consisted of muscovite mica - 64.8 per cent, TiO_2 - 33.2 per cent, Sb_2O_3 - 2.0 per cent and traces of alumina, iron oxide, sulfates and various inorganic compounds. It was found to have a pH of 4.5 to 5.0, a specific gravity of about 3, and proved insoluble in water, acetone and oil. The proposed use for coated mica flake pigment is as an ingredient in paints, inks and plastics.

Four rats were exposed for a period of four hours to an aerosol composed of 18.6 mg/lit of the coated mica flakes. Air flow was maintained at about 10 lit/min. The rats were killed for study fourteen days after exposure. Necropsy findings are summarized in Table 1 and organ weights are in Table 2.

The lesions found in the lungs of all four of these rats were typical for chronic murine pneumonitis and were no more prevalent, nor more severe, than those found in current stock rats. As no other lesions were present, and since organ weights were similar to those of stock rats of the same age, the inhalation of the coated mica flake pigment, administered in this manner, produced no significant pathology.

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This will be checked by microscopy. Since it has been shown that prolonged inhalation exposure to mica dust can produce progressive pneumoconiosis, the negative findings in this experiment merely signify that there is no acutely injurious component in the coating on the mica flakes in question, and should not be interpreted as exonerating mica flakes per se as a pulmonary pathogen.

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TABLE 1

GROSS PATHOLOGY SUMMARY

Haskell No: 2978 Material: Coated Mica Flake Pigment Excipient: Dry Air 10 lit/min at 10 lbs. pressure

MR No: 582 Test: ALC Species: M/Rat(CRCD) Procedure: Inhalation/4 Hours

Ref. No: P-112 Experiment Period: 8-14-61 - 8-24-61 T.I. J.W. Prosectors: A.S.

Dose mg/lit	Animal No.	Survival Days Test	Survival Days After	Cause of Death	1	2	Histology
18.6	48046		14	K	+	-	Yes
"	48047		"	"	++	-	"
"	48048		"	"	+	+	"
"	48049		"	"	+	+	"

Comment: + = Slight reaction ++ = Moderate reaction K = Killed

1 = Lungs - irregular congestion

2 = Lungs - focal atelectasis

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TABLE 2

ORGAN WEIGHTS

Haskell No: 2978 Material: Coated Mica Flake Pigment Excipient: Dry Air

MR No: 582 Species: M/Rat (CRCD) Test: ALC Procedure: Inhalation

Ref. No: P-112 Experiment Period: 8-14-61 - 8-24-61 T.I. J.W. Prosectors: A.S.

Age: 72 Days Animal No.	Survival Days	Body Weight Init.	Body Weight Final	Brain	Heart	Lungs	Liver	Pancreas	Stomach	Spleen	Kidneys	Testes	Adrenals	Thymus		
48046	14	302	405	1:93	1.28	1.73	17:09	0.85	1.69	0.65	3.30	2:69	.059	0.48		
48047	"	275	366	1.90	1:24	1:54	15:92	0.78	1:70	0:59	2:89	3:41	.065	0.43		
48048	"	295	388	2:11	1.35	1.93	16:33	0.70	1:72	0.82	3:59	3:16	.048	0.62		
48049	"	275	362	2.10	1.46	1:68	16:45	1:00	1:66	0:74	3:39	3:28	:048	0.65		
Average		287	380	2.01	1.33	1.72	16.45	0.83	1.69	0.70	3:29	3.13	.055	0.55		

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