

Wilmington, Delaware
April 13, 1972

E. H. BERG - MARSHALL LAB.
R. W. LAURRELL - MARSHALL LAB.
F. M. GAVIN - FLINT
D. M. MARSH - EXP. STATION

HEAVY METALS IN PAINTS

The NPCA Task Force on heavy metals held its organizational meeting in Cleveland on April 11, 1972. Representatives of the major paint manufacturers were present; Richard A. Moore of Sherwin-Williams is chairman of the Task Force.

NPCA intends to engage an independent laboratory to investigate the toxicity of metals used in paints. A three-phase program is contemplated:

1. Literature survey
2. Investigate the solubility of heavy metals and their compounds (listed in attached) in synthetic and, later, natural gastric juice
3. Feeding studies as indicated by 1 and 2

The Task Force listed all heavy metals, and their compounds, believed to be of importance to the paint industry. Metals were divided into three categories depending upon importance and likely relative toxicity as indicated in the attached. The proposed study may be limited to Group I only depending on preliminary consultations and projected costs.

Please review the attached list to determine whether all compounds of importance to the F. & F. Department are included and that percentages are appropriate. Your comments and/or changes to these lists by May 1 would be most appreciated.

E. E. SWAIN, JR.

EES/bn
Attach.

N38349

I. Metals whose compounds are most needed by the paint industry and whose toxicity may be suspect and for which research data is needed

<u>Metal</u>	<u>Compounds in Paints</u>	<u>Max. Ex-pected %*</u>
1. Cobalt	Co-Ni-Ti Pigments	20
	Metallo-organic soaps	1
2. Barium	Barium sulfate	30
	Barium borate	15
3. Lead	Lead chromates	25
	Lead carbonates	60
	Lead silicates	15
	Lead oxides (Pb_3O_4)	50
	(PbO)	50
	Lead metal	25
	Lead silicochromates	25
4. Mercury	Mercury-cadmium lithopone	0.5
5. Copper	Copper oxide	25
	Copper metal	40
	Metallo-organic soaps or driers	5
	Chlorinated copper thalloyanate	5
6. Antimony	Antimony oxide	10
	Antimony titanates	15
	Nickel antimony titanates	15
7. Nickel	Nickel titanate	15
8. Chromium	Chromium oxide	15
	Lead chromates	25
	Zinc chromates	25
9. Cadmium	Cadmium lithopones	15
	Cadmium selenide	
	Cadmium-barium soaps	3

*% by weight of non-volatiles

N38349.01

DUP050049714

II. Metals whose compounds are of equal importance but are believed to be less suspect for toxicity

<u>Metal</u>	<u>Compounds in Paints</u>	<u>Max. Ex-pected %*</u>
1. Titanium	Titanium dioxide	50
	Nickel titanate	15
	Nickel tungsten titanate	
	Nickel antimony titanate	
	Organic titanate	
2. Calcium	Calcium carbonate	70
	Calcium oxide	trace
	Calcium organic soaps and driers	2
3. Magnesium	Magnesium silicate	50
	Magnesium aluminum silicate	20
	Magnesium oxide	1
4. Aluminum	Aluminum silicates	50
	Aluminum stearates	10
	Aluminum hydrate & oxide lakes	5
	Aluminum metal powder	25
5. Zinc	Zinc oxide	25
	Zinc chromate	25
	Zinc metallo-organic soaps	1
	Zinc powder	80
	Zinc lithopones	50
6. Molybdenum	Lead molybdate	15
	Zinc molybdate	20
7. Lithium	Lithium hydroxide	2
	Lithium traces from alcoholysis	2
	Lithium naphthenate	2
8. Boron	Barium metaborate	15
	Other borates	15
	Boron trifluoride	1
9. Manganese	Manganese dioxide	2
	Metallo-organic soaps	1
10. Zirconium	Zirconium oxide	traces
	Naphthenates, soaps	2

*% by weight of non-volatiles

III. Metals whose compounds are of lesser importance to the
paint industry (may be able to do without)

<u>Metal</u>	<u>Compounds in Paints</u>	<u>Max. Ex- pected %*</u>
1. Arsenic		
2. Selenium	In cadmium lithopones	25
3. Tin	Organo-tin compounds	1
4. Strontium	Strontium chromate	25

*% by weight of non-volatiles