

Wednesday, October 27, 1954

10:30 A. M.

Association Headquarters  
Washington, D. C.

MEMBERS PRESENT

JOSEPH F. BATTLEY  
JOHN H. FOULGER  
S. L. KAPPELES  
PAUL WHITFORD (representing Miles M. Zoller)

INVITED VISITORS PRESENT

W. B. ALLAN  
R. DAVISON  
JOHN DICKENSON  
R. A. SHIVE  
J. D. TODD  
LOUIS J. WOOLF

ASSOCIATION STAFF

D. L. BOLAND  
C. B. LIPSEN  
J. C. MOORE  
LAURENCE KIEFER

The meeting was opened by Chairman Foulger at 10:30 a.m.

President Battley remarked that a list of raw materials that may be considered harmful for use in making paints for application to children's toys and furniture and interior surfaces is extremely important to the paint manufacturer. He referred to the contemplated action of the New York City and Chicago public health authorities requiring special precautionary labels for paints containing certain harmful metals. The Association has recommended precautionary labels for paints containing certain harmful ingredients, (copy attached). The Model Labeling Subcommittee recommended the Association prepare a list of paint raw materials that might be harmful and distribute this information to members. In preparing this list, General Battley believes it is best to start with pigments. He expressed appreciation for the aid of the pigment manufacturers in this task.

Mr. Boland gave a brief resume of a contemplated action by the New York City Board of Health and mentioned that originally the word "poison" was proposed for the label of paints containing lead. The draft of the proposed regulation is the result of cooperation between the New York City Health Department officials and representatives of the New York and National Paint, Varnish, and Lacquer Association. The Committee was asked for any suggestions for improvements in the draft of the regulation. Some suggestions were made and transmitted to the New York City Health officials. The draft to be proposed at the New York Board of Health hearing on October 29 is attached.

Chairman Foulger called attention to the copy of a list of harmless and harmful pigments used in different colored paints which was developed by the Children's Bureau, U. S. Department of Labor in 1942. This was checked by the National Bureau of Standards and the National Institute of Health. This is not a list of pigments prepared by our Association, but is based on such a list prepared by the Association in 1939. Since that time additional information has been developed and new pigments have been produced. The information can, however, be used in the preparation of an up-to-date list of possible harmful paint ingredients. It is the consensus of the committee that there should be prepared (1) a list of pigments that would be considered unsuitable and later (2) a list of pigments that are known to be suitable.

However, it is quite evident that there is insufficient information on the possible toxicity of some pigments that places them, at the present time, in a doubtful class.

After much discussion, it was agreed that the head of this list shall be as follows:

PAINTS CONTAINING THESE RAW MATERIALS SHOULD CARRY  
THE APPROPRIATE WARNING LABEL

White Pigments

Of Doubtful Classification

Basic Lead Carbonate  
Basic Lead Sulfate  
Basic Lead Silicates  
Leaded Zinc Oxides  
Antimony Oxide

Red Pigments

|                               |             |
|-------------------------------|-------------|
| Litharge or red lead          | Cadmium red |
| Mercuric Oxide                | Lithol red  |
| Vermillion (mercuric sulfide) | Para red    |

Orange pigments

|                                     |                |
|-------------------------------------|----------------|
| Chrome orange (basic lead chromate) | Cadmium orange |
| Molybdate orange (lead chromate)    |                |
| Orange mineral (lead oxide)         |                |

Yellow pigments

|                               |                |
|-------------------------------|----------------|
| Chrome yellow (lead chromate) | Cadmium yellow |
|                               | Zinc yellow    |

Green Pigments

|                                                      |                               |
|------------------------------------------------------|-------------------------------|
| Chrome green (lead chromate yellow<br>and iron blue) | Cadmium yellow<br>Zinc yellow |
| Paris Green                                          |                               |

Blue Pigments

Copper phthalocyanine blue

Dr. Foulger mentioned that he had tested the toxicity of a grade of copper phthalocyanine blue pigment and found it not harmful. However, all types of this pigment are not made by the same processes and it was decided to leave this pigment in the "doubtful" column.

Mr. Woolf remarked that there is already a commercial standard (CS 130-46) for color materials for art materials used in schools, prepared in 1946, which gives the maximum allowable amount of possible toxic materials that can be included in "Color Materials for Art Education". Reference to this particular publication

gives the following words under "Toxicity":

"Shall not contain lead, arsenic or any other toxic materials in excess of .05%."

Mr. Rose mentioned the necessity for some accurate method of determining the percentage of lead to be allowed in paint. A standard is of little value unless the method of determining the percent of lead or other ingredient is likewise a part of our recommendation.

Mr. Moore recommended the testing method attached to this report. This is the lead chromate method and is the best to use when testing for medium to small quantities of lead.

Certain pigments are placed in the questionable column because there is insufficient proof as to their toxicity. To be on the safe side they should not be used for making paints which are for application to children's toys and furniture or to interior surfaces which might be chewed by children.

Mr. Todd remarked, it is very difficult for a small pigment manufacturer to determine the pigments that may be considered toxic. The cost involved in determining the proper toxicity is excessive and the small manufacturer must depend upon the Association for help. Dr. Foulger suggested that some central laboratory might do this work for the industry as a whole.

President Battley stated that we are working very closely with the Manufacturing Chemists Association. He further stated that we are not set up in our own laboratory to do toxicological work, but that it is essential this information be developed. The adverse publicity we are receiving in newspapers that paint is harmful might result in reduced paint sales if something is not done about it. He points out that we investigate thoroughly each so-called child lead poisoning case.

Mr. Todd stated in reference to the possible toxicity of para red that there is a recent report he believes from the Kettering Laboratories in Cincinnati, July 1954. He will endeavor to get a copy and send it to us for photostating and transmittal to the committee members.

Mr. Karpeles suggested that the Association secure information from the Pure Food and Drug Administration concerning the work they have done on the toxicity of pigments and other paint products. This will be done and a brief report will be sent to the committee members.

Mr. Todd stated that some research work is being done on the use of radioactive isotopes in tracing the reaction of the possible toxicity of some chemicals. He will endeavor to get this information for transmittal to the committee.

The Committee adjourned at 4:30 p.m.

Respectfully submitted,

*John C. Moore*  
JOHN C. MOORE, Director  
Technical Division

PRECAUTIONARY LABELS RECOMMENDED BY THE NATIONAL PAINT,  
VARNISH AND LACQUER ASSOCIATION FOR PAINTS CONTAINING  
METAL COMPOUNDS, SOLVENTS OF SPECIFIED FLASH POINTS  
OR SIGNIFICANT AMOUNTS OF OTHER MATERIALS WHICH MAY  
BE HARMFUL

The following precautionary labels are suggested  
for use by members of the paint, varnish and lacquer  
industry.

The principles set forth in the suggested labels  
apply to all types of containers, large and small.

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N11699.01

EPI 000843

Precautionary labeling for paints containing harmful metal compounds should be applied to groups as indicated.

GROUP I - Products containing not more than 1 percent of lead, as metal (Pb), and not containing compounds of antimony, arsenic, cadmium, mercury, selenium, or barium (when soluble by stirring for 10 minutes with 5 percent hydrochloric acid at room temperature) introduced as such in the formulation of these products, and a solvent flashing below 150°F.

Flash Point  
above 80°F.

**CAUTION! COMBUSTIBLE**

Keep away from heat and open flame. Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Avoid prolonged breathing of vapor or spray mist. Keep container closed when not in use.

Flash Point  
above 20°F.  
to 80°F.,  
inclusive

**WARNING! FLAMMABLE**

Keep away from heat, sparks, and open flame. Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Avoid prolonged breathing of vapor or spray mist. Keep container closed when not in use.

Flash Point  
20°F. or  
below

**DANGER! EXTREMELY FLAMMABLE**

Keep away from heat, sparks, and open flame. Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Avoid prolonged breathing of vapor or spray mist. Keep container closed when not in use.

- (a) "Do not take internally" may be omitted from Group I except in the case of clear liquids, such as thinners. Regardless of flash point, these clear liquids should bear appropriate Group I label plus warning "Do not take internally", because clear liquids may be attractive nuisances or mistaken for beverages.
- (b) Flash point determinations, in all cases, refer to Tag. Open Cup Method, as specified in ASTM Method D 1314-54T.
- (c) Products classified in Group I which contain "odorless" solvents must be labeled with the appropriate Group I labels, but the warning words "Use with adequate ventilation" must be in type two points larger than the type used for the rest of the appropriate caution label and the label placed in a prominent position on the container.
- (d) The percent of lead is determined as lead metal (Pb) based on the total solids of the paint.

GROUP II - Products containing more than 1 percent of lead as metal (Pb) in a compound (see Note (b) below), or containing a compound of antimony, arsenic, cadmium, mercury, selenium or barium (when soluble by stirring for 10 minutes with 5 percent hydrochloric acid at room temperature) introduced as such in the formulation of these products, and containing solvents of the following flash points:

Flash Point  
above 80°F.

CAUTION! COMBUSTIBLE  
Keep Away From Heat and Open Flame  
CONTAINS LEAD OR OTHER COMPOUNDS HARMFUL IF EATEN

Do not apply on toys, furniture or interior surfaces which might be chewed by children. Use with adequate ventilation. Avoid breathing vapor or spray mist. Avoid prolonged contact with skin. Wash thoroughly after handling and before eating or smoking. Keep container closed when not in use.

Flash Point  
above 20°F.  
to 80°F.

**WARNING! FLAMMABLE**

Keep Away from Heat, Sparks, and Open Flame  
CONTAINS LEAD OR OTHER COMPOUNDS HARMFUL IF EATEN

Do not apply on toys, furniture or interior surfaces which might be chewed by children. Use with adequate ventilation. Avoid breathing vapor or spray mist. Avoid prolonged contact with skin. Wash thoroughly after handling and before eating or smoking. Keep container closed when not in use.

Flash Point  
20°F. or  
below

**DANGER! EXTREMELY FLAMMABLE**

Keep Away from Heat, Sparks, and Open Flame  
CONTAINS LEAD OR OTHER COMPOUNDS HARMFUL IF EATEN

Do not apply on toys, furniture or interior surfaces which might be chewed by children. Use with adequate ventilation. Avoid breathing vapor or spray mist. Avoid prolonged contact with skin. Wash thoroughly after handling and before eating or smoking. Keep container closed when not in use.

- (a) The percent of lead is determined as lead metal (Pb) based on the total solids of the paint.
- (b) When more than 1 percent of lead is the only harmful compound used in the product, the words, "Contains lead or other compounds harmful if eaten" in the applicable Group II label may be changed to "Contains more than 1 percent lead (Pb)". Furthermore, when this wording is used, the words "Harmful if eaten" must appear in the text of the label.

GROUP III - Products other than those included in Group II containing significant amounts of materials or solvents which may be harmful.

When harmful substances, other than those included in Group II are used in paint, due to formulation variables, it is impossible to establish a general warning label. The paint manufacturer is cautioned to alert himself to such hazards and use an appropriate precautionary label.

Extra vigilance should be the rule in labeling harmful Group III products. Labeling of Group III products containing hazardous chemicals to be guided by MCA Manual L-1 Warning Labels applying to those particular chemicals.

#### GROUP IV - Paint and Varnish Removers

- (a) Non-Flammable Removers, such as specified in Federal Specification TT-R-251c Remover; Paint and Varnish (organic Solvent Type), Type II. Such removers containing substantial amounts of Methylene Chloride must bear labels materially as follows:

CAUTION!  
Contains Methylene Chloride

Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Avoid prolonged or repeated breathing of vapor. Do not take internally.

- (b) Flammable Removers, such as specified in Federal Specification TT-R-251c Remover; Paint and Varnish (organic Solvent Type), Type I. Such removers containing substantial amounts of benzol must bear labels materially as follows:

DANGER! EXTREMELY FLAMMABLE  
VAPOR HARMFUL - POISON  
Contains Benzol

Keep away from heat, sparks, and open flame. Keep container closed. Use only with adequate ventilation. Avoid prolonged or repeated breathing of vapor. Avoid prolonged or repeated contact with skin.

PROPOSED METHODS FOR DETERMINING TOTAL LEAD  
AT A 1% LEVEL IN PAINT

Adapted from "Physical and Chemical Examination -- Paints, Varnishes, Lacquers, Colors". 11th Edition (1950), Gardner and Sward. See page 549 and page 570.

First, determine the total nonvolatile material in a well-mixed sample of paint by heating 3-5 grams in a flat-bottomed metal dish for one hour at 100°-110°C in an oven and determining the weight of residue. Next. Weigh out in a covered crucible enough paint to produce about 10 grams of ash. Carefully burn off all organic material and complete the ashing with 1:1 HNO<sub>3</sub> until all carbon is removed and all acid-soluble material is in solution.

Transfer the crucible and dried contents to a 400 ml. beaker and boil for about 2 minutes with an excess of acid ammonium acetate solution consisting of 95 cc. concentrated (sp. gr. 0.90) ammonium hydroxide and 125 cc. glacial acetic acid in 130 cc. water. If any insoluble matter is present, decant through a filter paper, leaving the residue in the beaker. Treat the residue with additional acid ammonium acetate solution in the same manner. Discard the insoluble residue and treat the combined filtrates so as to obtain the total lead in an acetic acid solution adjusted to about 5 cc. excess in 200 cc. of solution. Heat to boiling and add a moderate excess of 10% solution of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>. Heat until the yellow precipitate that first forms assumes an orange color. Allow to settle and filter by decantation onto a weighed Gooch or sintered glass crucible. Wash by decantation until the washings are colorless before transferring all of the precipitate. Wash with 95% ethyl alcohol and then with ether. Dry to constant weight at 110°C., cool and weigh the PbCrO<sub>4</sub> collected.

$$\text{PbCrO}_4 \times \text{factor } 0.641 = \text{Pb}$$

$$\begin{array}{l} \% \text{ Total Lead} \\ \text{(as metal in dried paint)} \end{array} = \frac{(\text{weight of PbCrO}_4) (0.641) (100)}{(\text{weight of paint sample}) (\% \text{ nonvolatile matter})}$$

N11699.02

EPI 000848

11/10/54

November 10, 1954

At a meeting of the Board of Health of the Department of Health held October 29, 1954, the following resolution was adopted:

RESOLVED, that article twelve of the sanitary code of the city of New York, as last amended by resolution adopted on the eighth day of March, nineteen hundred fifty-four and filed with the city clerk on the fifteenth day of March, nineteen hundred fifty-four, be and the same hereby is amended by adding thereto a new section, to follow section two hundred thirty c, to be section two hundred thirty d, to read as follows:

Sec. 230d. Paint containing more than 1% of lead - warning label required.  
1. No person shall have, keep, offer for sale, sell or give away in the city of New York any paint containing more than 1% of lead (determined as metallic lead based on the total non-volatile content of the paint) unless it bears the following warning statement:

"CONTAINS LEAD. HARMFUL IF EATEN,  
DO NOT APPLY ON TOYS, FURNITURE  
OR INTERIOR SURFACES WHICH MIGHT  
BE CHEWED BY CHILDREN",

and in addition thereto, the word "Caution", "Warning" or "Danger". The warning statement may include the words "or other compounds" following the words "contains lead".

2. Such warning statement shall be placed in a conspicuous place on the immediate container of such paint and shall be printed in letters which are legible and in conspicuous contrast with other printing appearing on the container.

3. This section shall not apply to:

- (a) Marine paints, roof cements and coatings, and automotive finishes which are not sold at retail.
- (b) Paints, other than paints for toys, children's furniture or interior surfaces which might be chewed by children, sold to the federal government, the state of New York, the city of New York, a manufacturer, an industrial plant, a public utility corporation or metal structural contractor for his or its own use and not for resale.

Resolved further, that this resolution shall take effect on the first day of May, nineteen hundred fifty-five.

(City of New York Department of Health  
Office of the Secretary  
125 Worth Street  
New York 13, New York)

N11699.03

EPI 000849