

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)

EP1 000845

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

Adapted from "Physical and Chemical Examination — Paints, Varnishes, Lacquers, and 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 weighing 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 HNO₃ 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 15 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 100 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 K₂Cr₂O₇. 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 PbCrO₄ collected.

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

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

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.

Extreme 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 1.3 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.

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.

October 1, 1954

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EPI 000847

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

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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 K₂Cr₂O₇. 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 PbCrO₄ collected.

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

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