National Paint, Varnish and Lacquer Association

INCORPORATED
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TO CLASS A MEMBERS:

Toxic materials with their ever-present problems require our conscientious consideration of the fundamental principles involved. The National Paint, Varnish and Lacquer Association is keenly interested in providing Class A members with as much information on this subject as is practicable at this time. This information being confidential is not intended for general publication, - it is being sent only to the Class A group. Please respect this confidence.

The vital factor concerning toxic materials is to intelligently safeguard the public. People may feel safer in buying materials whose danger they know rather than materials unknown to them. We trust the several phases presented herein will be of some benefit to members in applying every precautionary measure in manufacturing, in selling and in use where toxic materials are likely to or do enter a product.

Toxics and their effects is a subject very broad in scope and can only briefly be treated in this message.

Children's toys, equipment, furniture, etc. are not the only consideration.

Toxics - Many compounds used in paints or lacquers may have harmful effects if carelessly handled.

Toxic materials may enter the body through the lungs in the form of dust, mist, vapors, or gases, through the skin, or through the mouth and stomach. Material inhaled into the nose and mouth can dissolve in the saliva and be swallowed.

Irritant materials may also have a direct action upon the skin and the mucous membranes of the eyes, nose, mouth, and throat.

It must be remembered that all people do not react in the same way when exposed to chemicals. Some may be quite seriously affected by quantities which are harmless to others. Hence, it follows that any one using paint and allied products should provide adequate ventilation and should observe ordinary sanitary measures such as the washing of the hands and face before eating and keeping the clothes clean. Dirty work clothes, including shoes, can be an important source of skin absorption.

Some of the ingredients of paints and allied products might receive special mention because of their specific effects, rather than because they merely displace part of the air or cause slight discomfort if taken into the stomach or system.

The following pigments may be considered as toxic if they find their way into the stomach. The amount tolerated by the body varies with the pigment.

Antimony. Antimony oxide, Naples yellow, or other antimony compounds. (Antimony is supposed to be considerably less toxic than lead, but

there is much evidence to indicate that it is a toxic material.) Many cases of suspected antimony poisoning have been traced to the accompanying lead.

Arsenic Compounds. Paris green or other compounds containing arsenic.

Cadmium. Cadmium sulfides and selenides are toxic, but belong to the lesser used pigments.

Chromium. Chromates of all types are understood to be relatively toxic. Chromium oxides are relatively non-toxic.

Lead Compounds. White lead, red lead, litharge, lead chromates (chrome yellow, chrome green), or other lead pigments.

Mercury. Red and yellow oxides of mercury or other products containing mercury.

- Liquids -

Alcohols. The toxicity of methyl alcohol is very well known. As used in lacquers, the other alcohols are relatively harmless.

Benzol. This is probably the most dangerous of all commercial solvents, but its use in our industry is probably restricted to certain paint and varnish removers.

Chlorinated Hydrocarbons. Carbon tetrachloride, trichlor ethylene, tetrachlorethane, ethylene dichloride, and similar chlorinated aliphatic hydrocarbons are said to be very dangerous toxics. Chlorinated aromatic hydrocarbons are said to be less toxic than the corresponding hydrocarbon itself, but some chlorinated aromatics are frequently the source of skin troubles.

Lacquer Solvents. There is some evidence that the acetates—ethyl, butyl and amyl—are more or less toxic. Acetone and the other ketones are relatively harmless.

Most other solvents used to a lesser extent are either harmless in themselves, are used in such relatively small amounts, or are so slowly evaporating that they present no hazard.

Methyl Alcohol. The use of this product should be avoided. It is definitely poisonous.

Solvent Naphtha. This is also relatively non-toxic as compared to benzol, and probably less toxic than toluol and xylol.

Tuluol and Xylol. In equal concentrations, these are said to be more toxic than benzol, but because they are less volatile the actual hazard is usually less.

Tricresyl Phosphates. The para- and meta-tricresyl phosphates which are used as plasticizers are non-toxic. Ortho-tricresyl phosphate, on the other hand, is a violent poison.

Turpentine and Mineral Spirits. These products are relatively non-toxic but are still listed in works on toxicology as causing eczema and irritation of the skin and mucous membranes. Some people exposed to the fumes are subject to internal disorders when breathing substantial amounts of turpentine. Mineral spirits is less toxic than turpentine.

Other plasticizers. Very little is known regarding the toxicity of other common so-called chemical plasticizers, but the hazard from volatility or dust is, of course, small.

The main consideration, whenever paint products are used, is constant repetition to the paint consumer of the necessity of employing adequate ventilation and maintaining personal hygiene.

Printed Matter - Color cards and advertising literature should not include any reference by the use of words or sketches to indicate or recommend a product for children's toys, equipment, furniture, etc., unless it is absolutely free from toxic materials.

Non-Poisonous Colors - It is generally conceded there is relatively little danger of toxic effect from paints on toys and nursery furniture, as both the paint manufacturer and the toy manufacturer are familiar with the types of non-poisonous pigments to use. Nevertheless, the individual company should constantly guard against using any toxic material, especially lead compounds, in products for finishing children's toys, etc. Note: (See page #7 of "Odds and Ends", a special circular of the Scientific Section National Paint, Varnish and Lacquer Association, issued August 1938.)

Grown-ups are exposed to some hazards as in the case of children. Therefore products for finishing pencils, and other articles that may be placed in the mouth, through habit, require the use of toxic-free materials.

Labeling - No definite procedure is recommended for labeling. Labeling is serious since it becomes a public matter with the question as to what would result if this were done. Each manufacturer can ably cope with the toxic material situation by constantly safeguarding the public through the products he manufactures and by the repetition of instructions to salesmen, service men and others who can intelligently instruct the consumer of the advantages of providing adequate ventilation and of maintaining personal hygiene.

General - The statement of legal principles listed below was prepared for and distributed by the Manufacturing Chemists' Association for the guidance of its members concerned with labeling problems, and is supported by decisions of the courts. Although the principles set forth are not entirely the result of litigation involving material used by members of our industry they are nevertheless generally applicable to situations arising from the use of harmful substances.

Manufacturing Chemists' Association Legal Principles

1. A manufacturer who puts out a dangerous article or substance without accompanying it with a warning as to its dangerous properties is ordinarily liable for any damage which results from such failure to warn.

2. A manufacturer or dealer who erroneously labels a dangerous drug with the name of a harmless substance is liable for any injury which may be caused thereby.

3. Failure to comply with a statute, e.g., with respect to labeling poisons, is usually held to be negligence per se or at least evidence of negligence.

4. The name of the product alone may be sufficient warning, if its nature is very widely known or its sale is restricted to those who are presumed to know its nature, but even in such cases the advisability of a specific warning is indicated.

5. Technical accuracy may not be sufficient protection for the manufacturer if he uses words which may give the purchaser the impression that his product is not what it actually is.

6. A nonwarranty of results is not a warning against possible dangerous results.

7. The consumer is entitled to rely on positive representations or directions appearing on the label unless he knows them to be incorrect.

8. The manufacturer is ordinarily not liable if his product is put to a use for which it is not intended and an injury results which could not reasonably have been foreseen. It is often difficult, however, to know whether a particular result should have been foreseen, and the courts are apt to differ on this point.

9. The manufacturer or one who holds himself out to be the manufacturer must know the qualities of his product and he cannot escape liability on the ground that he did not know it to be dangerous.

10. The general rule that a manufacturer is not liable to those not in privity of contract with him does not apply when his product is imminently or inherently dangerous.

Conclusion - We grant that this is a very broad subject, and doubt if a concise set of rules can be established. Nevertheless, it may be said that our members can meet their individual problems in safeguarding the public, including of course our own factory employees, by their sincere effort in taking advantage of every possible precaution in the use of toxic materials in manufacturing, selling and in use.

Such precautions plus constant repetition of intelligent instructions will, it is believed, secure the best results.

Yours very truly,

Ernest T. Trigg

President

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