ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

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ACTS FACTS SOURCES

The Federal Register (FR) is ACTS FACTS' major source of information. The FR is a compilation of all the regulations and public notices issued by federal agencies. Published daily, this vast amount of printed matter often contains items which affect the health and safety of artists, theater, or crafts people. Other sources of include the Bureau of National Affairs Occupational Safety & Health Reporter (BNA), the Centers for Disease Control (CDC), HAZCHEM Alert, and many other sources. ACTS cites its sources and answers inquiries about them.

INNOVATIVE TEACHER RESCUES FINGER PAINTING

Finger painting is not hazardous, but it teaches children it is fun and safe to get paint their hands. And this lesson usually is taught when children are too young to discriminate between finger paints and more hazardous paints. For these reasons, I usually recommend against teaching finger painting.

On a recent lecture trip, however, I learned that Joan Slater, an art teacher at Muirhead Public School in North York, Ontario, Canada, solved the problem. She purchases small-sized surgical gloves for the youngsters and lets them have at it. Taught Joan Slater's way, finger painting teaches both art and safety. -Editor

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DIOXIN* FOUND IN C.I. PIGMENT VIOLET 23

J. Remmers (EPA), A Dupuy (EPA), R. Harless (Stennis Space Center), D. Steele (EPA)

One of the presentations at the **Dioxins '91** conference at Research Triangle Park, North Carolina on September 9, reported on dioxin contamination of chloranil. High levels of dioxin and furans found in chloranil also were found to be carried over into pigments and dyes which are subsequently made with this chemical. The pigment tested for dioxin and furan contamination was C.I. Pigment Violet 23 (PV23), C.I. 51319. The presenters noted that industry is moving rapidly to implement processes to reduce or eliminate the contamination. Meanwhile, artists have yet another reason to practice good hygiene, because dioxins and furans are hazardous by all routes of entry into the body including skin contact.

PV23 is often found in artists oils, acrylics, and other paints. It is referred to by several names including dioxazine violet or purple, carbazole violet or purple, or combinations of these names. Textile dyers also may be at risk of dioxin exposure from direct, vat and wool dyes made from chloranil.**

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* Dioxins are a category of 75 similar polychlorinated dioxin and furan compounds.

** C.I. Direct Blue 106-109,190; C.I. Direct Violet 19, 54; C.I. Vat Brown 21,24,34,36; C.I. Vat Green 22,23; and two wool dyes: Antinolog Brown G and Helindon Brown CR

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SCULPEY ILLUSTRATES LABELING LAW DEFICIENCY

Sculpey, made by Polyform Products, Incorporated, is a very popular craft product that has been used for many years. It is a clay-like, vinyl chloride plastic designed to be hand-formed and fired in kitchen ovens. To keep it soft and pliable, it contains a chemical "plasticizer." Sculpey contains about 15 percent plasticizer according to its Material Safety Data Sheet.

Sculpey's plasticizer used to be di(2-ethylhexyl)phthalate (DEHP). DEHP is an oily substance which is expected to absorb through the skin. Whether significant amounts absorb when Sculpey is hand-formed is not known. People also could inhale DEHP vapor if the oven used to cure Sculpey over heats. A little DEHP may even volatilize at the recommended 275 ° F. DEHP contamination of food subsequently cooked in these ovens also might happen.

Exposure to DEHP is important because it has been considered a carcinogen by the International Agency for Research in Cancer (IARC) since 1982. DEHP causes cancer in test animals. This fact now must be disclosed on DEHP-containing product labels according to the Labeling of Hazardous Art Materials Act. Whether for this reason or for product safety, DEHP is no longer used in Sculpey.

Polyform Products replaced DEHP with a very similar chemical called dioctylterephthalate (DOTP) or di(2-ethylhexyl)terephthalate. The chart on the opposing page compares DEHP and DOTP. One difference is that DOTP has never been studied for chronic effects such as cancer and birth defects. Under the Labeling of Hazardous Art Materials Act, using the untested DOTP enables manufacturers to label Sculpey "non-toxic."

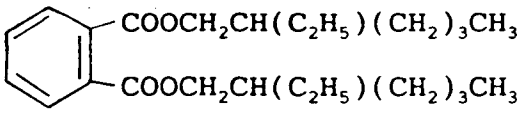
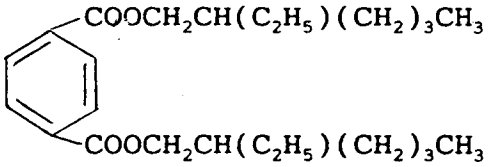
The chart also notes that DEHP causes liver enlargement in test animals before liver cancers develop. In subchronic tests, DOTP also is reported to cause liver enlargement. Although this fact is not evidence of carcinogenicity, it is evidence that not much is known about DOTP's toxicity. And since the mechanism by which DEHP causes cancer is unknown, the possibility that DOTP could also cause cancer cannot be ruled out.

Consumers are sick and tired of finding out that chemicals they were told were safe for years are actually hazardous. This has happened with DEHP. It could happen again with DOTP. It certainly will happen again with some of the hundreds of other untested pigments, dyes and other chemicals in art materials. To avoid this, the Consumer Product Safety Commission should change their guidelines as follows:

1. Labels on products whose ingredients have never been studied for chronic toxicity should simply state this fact.

2. The "non-toxic" label should be reserved for products whose ingredients do not exhibit either acute or chronic toxicity in animals or people when properly tested and assessed.

COMPARISON OF DEHP & DOTP PLASTICIZERS USED IN HAND-MOLDED, KITCHEN OVEN-FIRED HOBBY PRODUCTS

DEHP	DOTP
Was the plasticizer in Sculpey, FIMO, and probably others.	Now used in Sculpey. In FIMO? Others??
CHEMICAL DATA	CHEMICAL DATA
Di(2-ethylhexyl)phthalate CAS # = 117-81-7  note: ethylhexyl groups are on the 1 & 2 positions on the phthalic acid benzene ring.	Di(2-ethylhexyl)terephthalate CAS # = 6422-86-2  note: only difference is the ethylhexyl groups are now on the 1 & 4 positions.
ACUTE TOXICITY DATA	ACUTE TOXICITY DATA
RAT LD_{50} = 30.6 g/kg RABBIT LD_{50} = 33.9 g/kg	RAT LD_{50} > 3.2 g/kg MOUSE LD_{Lo} = 20 g/kg
CHRONIC TOXICITY DATA	CHRONIC TOXICITY DATA
SUBCHRONIC/CRHONIC TOXICITY Causes liver enlargement, liver cancer CANCER STUDIES result in classification: NIOSH= X (cancer agent) EPA = B2 (probable human carcinogen) IARC = 2B (possible carcinogen) NTP = 2 (reasonably anticipated to be a carcinogen...) REPRODUCTIVE TOXICITY Adverse effects in both rats and mice DEVELOPMENTAL TOXICITY Causes birth defects in mice and rats. Affects skeletal and nervous systems, blood vessels and the kidney.	SUBCHRONIC TOXICITY Causes liver enlargement CANCER STUDIES No studies REPRODUCTIVE TOXICITY No studies DEVELOPMENTAL TOXICITY No studies
LEGAL LABEL WORDING	LEGAL LABEL WORDING
"Cancer hazard based on experimental data," "Causes cancer in test animals," or similar approved statement.	"Non-toxic"

EDITOR'S COMMENTS ON SCULPEY

The preceding article should not be considered a condemnation of Polyform Products, Sculpey's manufacturer. In fact, Polyform should be congratulated for supplying the name of their plasticizer on their Material Safety Data Sheet. A manufacturer of a similar product, Eberhard Faber, replaced DEHP in their FIMO, but they do not tell consumers anything about the substitute. (Cernit, Modello, and other polymer clays were not investigated.)

It is also important to remember that Polyform Products is not breaking any law. They are just playing the "toxicity game" as it has always been played. ACTS thinks it is the rules of this game that are at fault. At present, chemicals are considered innocent until proven guilty. For the protection of consumers, that rule must be turned around: only after chemicals prove their innocence should they be labeled "non-toxic."

This doesn't mean that untested chemicals should never be used in consumer products--only that consumers should be told that the product's chronic hazards are unknown.

I suspect that there will be a lot more discussion about DEHP and DOTP in ACTS FACTS. There are many more points for consumers to consider, such as the three theories explaining how DEHP may cause cancer, who decides which theory is assumed correct, and why. The problem is not as simple as it looks in this short article. But the solution is simple: consumers should have a right to know both what is known and what is unknown about a product's hazards.

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CHROMIUM (III) IS STILL CONSIDERED TOXIC WASTE

56 FR 58859-62, Nov. 22, 1991

The Environmental Protection Agency (EPA) is denying a petition to delete chromium (III) oxide from the list of toxic chemicals subject to reporting under the Emergency Planning and Community Right-to-Know Act of 1986. The California Products Corporation sought the exemption for Chromium (III) because it is not considered a human carcinogen as is chromium (VI). The petition was denied because the EPA contends chromium (III) can, under certain conditions, be oxidized to cancer-causing chromium (VI). This oxidation can occur in soils and water treatment processes that use chlorine. Chromium (III) compounds are often used as pigments and ceramic, enamel and glass colorants.

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NAPHTHALENE & CHLOROPICRIN MAY BE BANNED IN CALIFORNIA

HAZCHEM ALERT, Vol. 6, No. 21, October 14, 1991, p.178.

California's Environmental Protection Agency has taken action to suspend 14 common pesticides and 535 products that contain them. Among these are naphthalene (mothballs) and chloropicrin. The action was taken because manufacturers of these pesticides failed to perform chronic toxicity studies required by 1984 legislation.

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ASBESTOS BAN OVERTURNED

The Asbestos Information Association of North America won its battle against the EPA on October 21 when the 5th U.S. Circuit Court of Appeals ruled the EPA's ban on the manufacture of asbestos-containing products be repealed. Originally asbestos products were to be phased out over the next few years (ACTS FACTS, August 1989). Now the Court's decision will allow manufacturers to use asbestos in cement products, roof shingles and coatings, gaskets, and brakes. Consumers must again be careful to check ingredient information if they wish to avoid such products.

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ERIONITE USE RESTRICTED

56 FR 56470-2, Nov. 5, 1991

Erionite is a naturally occurring mineral of the fibrous zeolite class. It occurs in abundance in sedimentary rock in the Southwest and Pacific Northwest regions of the U.S. Currently there are no known articles of erionite being manufactured or imported, but there is some exposure to workers from erionite contamination of other commercial zeolites. Rock collectors and lapidaries should also be informed about sources erionite.

Although erionite is not related to asbestos, it is suspected of causing the same cancers in humans. Outcroppings of erionite in Turkey are associated with mesothelioma (a cancer caused almost exclusively by asbestos) in Villagers. Animal studies show erionite fibers are more potent than crocidolite or chrysotile asbestos in inducing mesothelioma. This and other data led the EPA to classify erionite fibers in Category B1, a probable human carcinogen.

Now the EPA has published a significant new use rule (SNUR) which requires anyone wishing to manufacture, import, or process erionite for any commercial purpose to report their intention to the EPA. SNUR rulings usually make processing of the affected materials economically unfeasible because of the expensive precautions EPA may require the industry to take in order to protect workers and the public.

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We wish you a healthy, happy 1992

Monona Rossol, Susan Shaw, Eric Gertner, Nina Yahr, and Elizabeth Northrop

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MANY ALDEHYDES MAY BE CARCINOGENS

There is new evidence that many members of class of chemicals called "aldehydes" may cause cancer. Some of these aldehydes are currently used as substitutes for formaldehyde (an aldehyde already regulated as a carcinogen). Aldehydes also are formed when common substances such as wood, coal, or wax, are heated or burned, and they are found in exhaust from internal combustion engines.

Information on the aldehydes was published by the National Institute for Occupational Safety and Health (NIOSH) in the Current Intelligence Bulletin 55: Carcinogenicity of Acetaldehyde and Malonaldehyde, and Mutagenicity of Related Low-Molecular-Weight Aldehydes.* This imposingly titled bulletin presents data showing that inhalation studies of acetaldehyde and malonaldehyde causes cancers in two animal species. In addition, incomplete research on nine related substances suggests that all nine may have similar hazards. The nine compounds are acrolein, butyraldehyde, crotonaldehyde, glutaraldehyde, glyoxal, paraformaldehyde, propriolaldehyde, proprionaldehyde, and valeraldehyde.

NIOSH is concerned about these findings because some of these chemicals are currently being used as substitutes for formaldehyde. Acetaldehyde and glyoxal have been used to replace formaldehyde in embalming fluids which may also be used for biology specimens. Glyoxal and malonaldehyde can be used to replace formaldehyde as an intermediate for resins used to treat paper. Recently ACTS FACTS (see March 1991) reported that trace amounts of acetaldehyde also may be found in white glues.

Aldehydes also are created when organic substances are burned or heated to decomposition. For example, considerable amounts of acrolein can be created when wax is heated during procedures such as ironing out wax from batik fabrics, burning out lost wax castings, kiln firing pottery with wax resists, and candlemaking. Air monitoring done in one candlemaking establishment in which consumers could dip their own candles showed amounts of acrolein above industrial limits.** Although acrolein has a recognizable sharp odor, heavy fragrences added to the candle wax in these establishments can effectively cover it.

Worker exposure to formaldehyde, acrolein, and acetaldehyde is regulated by the Occupational Safety and Health Administration (OSHA), but there are no permissible exposure limits (PELs) for the other substances. This means that workers may be exposed to them without intervention. NIOSH, however, recommends that exposure to all these aldehydes be reduced to the lowest feasible concentration.

To protect themselves, artists and teachers should check to see if products advertised as "formaldehyde-free" actually contain these other aldehydes. They also need ventilate kilns and other heating and burning processes.

* Copies of the bulletin can be obtained from Publications Dissemination, DSDTT, NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226. (513) 533-8287.

** Unpublished data from a client's workplace records.

REPORT ON CARPET POLICY AVAILABLE

56 FR 67317-9, December 30, 1991

In August 1990, the EPA convened a policy dialogue with the carpet industry in response to a petition from a union representing their own workers. The petition sought regulatory action to address carpet emissions alleged to have cause environmental illnesses in workers in the EPA's Washington headquarters (ACTS FACTS, Vol.4, No. 1, January 1990). Now a report summarizing the conclusions of the year-long dialogue is completed. Among the "Accomplishments" listed in the report are:

1. A standardized analytical test method was developed to measure and compare the total volatile organic chemical (TVOC) emissions from floor covering products (carpets, pads, and adhesives). The procedure was peer reviewed and submitted to the American Society for Testing and Materials as the basis for a new standard method.

2. Three agreements were designed for industry-sponsored voluntary testing programs that will develop information about TVOC emissions from carpet floor products. They include follow-up activities such as multi-year testing programs, information reporting, industry product certification programs, public communication, and more.

3. Four Memoranda of Understandings (MOU) were established between EPA and the industry trade associations (Carpet and Rug Institute, Carpet Cushion Council, Floor Covering Adhesive Manufacturers Committee, and Styrene Butadiene Latex Manufacturers Council). The first three MOUs formalize the voluntary testing and data reporting programs above, while the latter MOU provides for the submission of data from ongoing quality analysis programs.

4. A public information brochure "Indoor Air Quality and New Carpet--What you Should Know" was developed to provide interested consumers with information about TVOCs that emit from new carpet. Sixteen organizations signed on as participants in developing the brochure and when it is available ACTS FACTS will alert readers.

5. A compendium Report was prepared summarizing the activities of the Carpet Policy Dialogue. This report, "The Carpet Policy Dialogue: Compendium Report" (EPA/560/2-91-002), is available for $ 66.00 from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. Request PB 92-115005. ACTS FACTS hopes this article will be detailed enough so that our readers will not need to order this expensive publication.

Other accomplishments of the Dialogue included: compilation of engineering information to identify potential measures to reduce TVOC emissions levels; Reinforcement of a market climate encouraging introduction of low-emitting carpet installation adhesives; an initiative established by the U.S. General Services Administration to develop requirements to make low VOC carpet floor covering available for use in Government offices; an agreement that the Floor Covering Installation Contractors Association will enhance training programs for installers to include information about indoor air quality, proper installation, and adherence to industry installation guidelines; progress toward implementing a quality assurance product certification for TVOC emissions from both the carpet and carpet cushion industries from the various products manufactured.

This sounds like good news for those sensitive to carpet emissions, but only time will tell. For further information, contact: Dave Kling, Acting Director, Environmental Assistance Division (TS-799), Office of Pollution Prevention and Toxics, U.S. Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. 202/554-1404, TDD : 202/554-0557. FAX 202/554-5603

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CDC LEAD PUBLICATION AVAILABLE

The Centers for Disease Control (CDC) statement: "Preventing Lead Poisoning In Young Children" which was reviewed in the December, 1991 ACTS FACTS (Vol. 5, No. 12), is available by contacting Publications Activities, Office of the Director, National Center for Environmental Heath and Injury Control, CDC, MS-F29, 1600 Clifton Road, Atlanta, GA 30333.

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PUBLICATION ON ELECTROMAGNETIC FIELDS AVAILABLE

The Centers for Disease Control has released the "Proceedings of the Scientific Workshop on the Health Effects of Electric and Magnetic Fields on Workers." For those interested in the still confusing, preliminary technical data on this subject, this publication is a must. A free copy can be obtained from Publications Dissemination, DSDTT, NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226. (513) 533-8287.

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COTTON AND SYNTHETIC FIBER DUSTS REDUCE LUNG CAPACITY

BNA-OSHR, Vol. 21, No. 33, p.1165-6, Jan. 22, 1992
& Amer. Review of Respiratory Disease, Vol. 144:675-683.

A team of researchers from Tulane University School of Medicine studied 1,817 textile workers from nine Burlingron Industries plants to determine the effects of dust exposure. They concluded that the industrial cotton dust standard should be lower, smokers should not work in yarn manufacture, and further study is warranted to find out why synthetic textile plant workers also show lung problems. The key findings included:

* Exposure to cotton dust generated during yarn manufacturing is especially harmful to workers because it is more toxic during yarn making than when yarn is woven into other products.

* Federal exposure limits for cotton dust in yarn manufacturing should be lowered. OSHA's limit since 1980 has been 0.2 milligrams per cubic meter (mg/m^3). At this level, the non-smoking employees lose about 14 percent of their lung capacity in 20 years. If the limit is changed to 0.15 mg/m^3, non-smoking employees would lose only about 10 percent of their lung capacity in the same time period--about the same as persons who do not work in textile mills.

* Smokers working in yarn manufacturing for 20 years lose about 25 percent of their lung capacity, while smokers not exposed to the dust lose about 20 percent of their lung capacity. Smokers also lose lung capacity at about twice the rate of non-smokers.

* Although researchers expected workers in synthetic textile plants to have less lung capacity loss than those in cotton yarn manufacturing, the opposite was true. More studies are needed to find out why synthetic textiles such as polyester can cause this effect.

This information is important to textile artists as well. It is good news that the study reaffirms the fact that weavers who do not make their own yarn or work with raw cotton are not at much risk. It is also reaffirms that smoking exacerbates cotton and probably other textile dust hazards. Further, this is the first solid information we have seen on the hazards of synthetic fiber dust about which ACTS has received many inquiries from artists.

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RECESSION BOOSTS CHALK USE

Some schools around the country plan to economize by replacing pencils, pens, and markers with chalk when possible. The back-to-the-blackboard movement has cause several teachers to ask ACTS about the hazards of chalk dust.

Chalk dust should not cause problems for most children. Some youngsters with severe allergies or high risk children such as those with asthma, cystic fibrosis, and other lung problems should be watched for adverse reactions. The chalk itself is not likely to cause problems, but chalk sticks contain other ingredients such as gum binders and dyes which may provoke allergies.

Chalk is calcium carbonate which is not sensitizing or hazardous. It's dust will dissolve in lung and digestive fluids and be absorbed in the same way as calcium in food. Blackboard chalk is not recommended as a dietary calcium source since it is not usually "food grade" and may contain toxic impurities. Parents and teachers, however, need not worry about the very small amounts absorbed from dust exposure.

The safest chalks are labeled dustless, white, and non-toxic:

1. "Dustless" means there is a binder in the chalk that keeps the dust in large particles which are not respirable (will not deposit deep in the lungs). The binder usually is gum arabic to which a few people are allergic.

2. "White" chalk is preferred to reduce the risk of dye hazards or allergies in some children. This wont work if the chalk contains "whiteners" which are actually special white or fluorescent dyes like those used in detergents. The amount of dyes and whiteners in chalk is very small, but children and teachers may be exposed five days a week.

3. "Non-toxic" means that under the new labeling law chalk does not require either acute or chronic hazard warnings.

Even though label warnings are not required, school administrators should insist on Material Safety Data Sheets for chalk products in case any questions or problems arise among students or teachers.

Common sense dictates that chalk dust exposure should be minimized. Excessive inhalation of any dust challenges the lungs no matter how non-toxic. Overexposure may be occurring if youngsters or desks are found covered with dust at the end of the day, or if children are beating the erasers clean. Used in a sensible manner, chalk is far safer than white board markers and other solvent-containing products, and no more hazardous than the pencils and pens they replace.

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IGUANAS CAUSED ILLNESS IN INFANTS

Mortality & Morbidity Weekly Report, Centers for Disease Control, Vol. 41, No. 3, Jan. 24, 1992.

Two infants residing in different Indiana counties were made seriously ill by a very uncommon strain of Salmonella bacteria which was later isolated from pet iguanas. The infants had no direct contact with the pets. In one case, the mother fed the iguana, cleaned the cage, and washed her hands after these activities. In the other case, the father tended the iguana and the mother had no known contact with the animal.

These cases reinforce what has been learned from pet turtles and other reptiles, that is: direct contact between the pet and the infant are not necessary to transmit the disease organisms.

Many reptiles sold in the U.S. are contaminated with various types of salmonella. It is probably not practical to screen reptiles before selling them because testing for these organisms is difficult and not always successful. Instead, care must be taken to practice very good hygiene with such pets when very young children, elderly, or frail people are in the household. School classrooms, petting zoos, and museums which allow contact between reptiles and visitors need to provide hand washing facilities and information about the importance of good hygiene after contact with reptiles.

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LIST OF PESTICIDE INERT INGREDIENTS AVAILABLE

57 FR 1732, January 15, 1992.

The EPA announced the availability of a revised list of pesticide inert ingredients and their Chemical Abstract Service (CAS) numbers. Inert ingredients are non-pesticide chemicals in pesticide products which serve other functions such as solvents or carriers. Some of these ingredients are very toxic or sensitizing. People who claim to "react" to pesticides often are reacting to inert ingredients rather than to the pesticide itself.

The new inert ingredient list updates the list announced in the Federal Register of August 17, 1990 (55 FR 33762). A copy can be obtained by writing to: Freedom of Information Officer (A-101), EPA, 401 M St., SW., Washington, DC 20460.

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LEAD ABSORPTION BY SKIN AND HAIR STUDIED

RESEARCH REPORT, 1985-1990, Nat'l Occup. H & S Commission, Australia, Nov. 1991, pp. 151-2.

A report on research funded by the Australian government included a summary of study of toxic elements in sweat, hair, and blood completed in 1988. In this study, an analytical method for determination of copper, lead, cadmium, and zinc in sweat, hair, and blood was developed and used to compare levels of these metals in normal non-industrially exposed people and lead workers.

As expected, researchers found that lead workers had higher levels of lead in their sweat and that the concentration of lead in sweat is not proportional to that in blood. What was not expected was that "inorganic lead, for example lead metal dust, lead oxide powder, lead nitrate, is rapidly absorbed through the skin and enters the circulatory system."

Researchers also learned that no solvent could be found which would selectively remove environmentally deposited lead from hair, and that some trace elements increased along the length of the hair because hair loses its waxy coating and becomes more permeable to contaminants as it ages. Conclusions listed in the report were:

* "The research raises the possibility that lead industry workers should wear protection to prevent skin absorption of lead, and possibly other metal compounds; and

* Hair analysis will seldom prove useful for monitoring industrial exposure to heavy metals."

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STUDY FIND SMALL FIRMS DO NOT COMPLY WITH LEAD REGULATIONS

BNA-OSHR, Vol. 21, No. 36, February 12, 1992, pp. 1237-8.

A study of 1,001 companies that use lead in Los Angeles County, California, showed that compliance with the OSHA Lead Standard was poor, especially in workplaces with 20 or fewer employees. The new study, published in the February American Journal of Industrial Medicine (Vol. 21, No. 2), concluded that many smaller businesses are unaware of OSHA requirements and "admit that they have not performed the required workers education and medical (blood lead tests) or environmental (airborne lead) monitoring."

Researchers point out that these data illustrate that lead poisoning is more of a problem than previously thought because "the California Lead Registry undercounts lead poisoned workers." Researchers also assume that compliance is even poorer among lead businesses that were missed or did not participate in the study and that some participating businesses probably overstated their compliance. (Surprise, surprise!)

The authors recommend that more resources be devoted to identifying smaller workplaces where worker health is jeopardized by significant exposure to lead.

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CERAMIC MANUFACTURER CITED BY OSHA

Secy of Labor v Bassin, reported in BNA-OSHR, Vol. 21, No. 34, January 29, 1992 p. 1195.

An industrial ceramic fixtures manufacturer was cited for a number of OSHA violations which might be found many ceramic studios throughout the country. Among these were alleged:

* serious violations for failure to stack ceramic products safely near aisles in warehouse area, 1910.176(b);
* failure to appropriately guard an abrasive wheel, 1910.215(b)(9);
* failure to train employees in handling and use of hazardous chemicals 1910.1200(h);
* repeat citation for exposing its employees working in a spray booth to dust in excess of permissible exposure limits, 1910.1000(c), and failure to use administrative engineering controls to reduce this exposure, 1910.1000(e);
* failure to label, tag, and mark a hazardous chemical used in operations, 1910.1200(f)(5)(i); and
* an other-than-serious citations alleging violation for failure to provide appropriate hazard warnings on labels placed on containers of hazardous substances, 1910.1200(f)(5)(ii).

The penalties proposed totaled 24,300 but were reduced to 12,150. The employer also was given an additional three months to correct the spray booth and develop administrative controls.

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COMPUTER TERMINAL LAW STRUCK DOWN

BNA-OSHR, Vol. 21, No. 37, Feb. 19, 1992, pp. 1251-2.

The nation's only video display terminal (VDT) law was struck down by a California judge less than three weeks after its first key requirements took effect (*C & T Management Services Inc. v. City and County of San Francisco, Calif SuperCt, No 936661, 2/13/92*). Judge Lucy McCabe held that the San Francisco ordinance was preempted by the California Code which authorizes only the state's Occupational Safety and Health Standards Board to issue standards.

The VDT ordinance would have required employers with more than 15 workers to provide ergonomic work stations, safety training for employees, frequent alternative work breaks, and to purchase only new equipment which is in compliance with ergonomic standards laid out in the ordinance. Cal/OSHA has no VDT specific rules in the works, but a state ergonomic standard is under development.

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NEW JERSEY PUBLIC EMPLOYEES GET GROUND-BREAKING VENTILATION RULE

24 NJR (New Jersey Register) pp. 229-234; *BNA-OSHR*, Vol. 21, No. 38, Feb. 26, 1992, pp. 1278-9

The New Jersey Department of Community Affairs (DCA) has adopted regulations that incorporate by reference two recent standards of the American Society of Heating, Refrigerating, and Air-conditioning Engineers, ASHRAE 62-1989 (ventilation for acceptable indoor air quality) and ASHRAE 55-1981 (thermal environmental conditions for human occupancy). The rule (N.J.A.C. 5:23-11) became effective on publication in the January 21 New Jersey Register.

The ASHRAE standards will be used to assess alleged air quality deficiencies in a building when a public employee or his/her representative files a complaint. If a worker is not satisfied with the employer's response to the initial complaint, the next step is a formal complaint to one of two state agencies. The Department of Community Affairs (DCA) investigates problems involving the function of the heating, ventilation, and air conditioning system which result in unacceptable temperature control or air-quality. The state Department of Health (DOH) investigates health-related complaints. The state Labor Department enforces orders resulting from Health Department investigations and there is an appeal process for all parties.

The rule gives both the DCA and DOH the authority to order a technical study of an affected building and to require the building owner to comply with the recommendations of that study. They do not require that the workplace be altered to accommodate a hypersensitive person.

DCA estimated that this rule will result in 5 % greater heating and cooling costs for some buildings. The DCA also proposed a rule which would incorporate the ventilation rates in ASHRAE 62-1989 into the Uniform Construction Code. It would serve as an indoor air quality subcode applicable to the design of all new and renovated buildings. The ASHRAE standards require better ventilation than many older buildings provide. The new rule should result in ventilation renovation in some buildings.

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181 THOMPSON STREET #23, NEW YORK, NY 10012 212 / 777 • 0062

NTP LISTS NEW CARCINOGENS

Sixth Annual Report on Carcinogens 1991, Summary, US DHHS, NTP, Research Triangle Park, NC

The National Toxicology Program's (NTP) Sixth Annual Report on Carcinogens, 1991 is a summary of data on substances which may cause cancer. The report lists three new entries which are of importance to artists.

1. **Erionite** was added to the "known to be carcinogenic list." NTP says that there is sufficient evidence for carcinogenicity both from experimental animals and humans.* Erionite is a naturally occurring mineral of the fibrous zeolite class occurring abundantly in sedimentary rock in the Southwest and Pacific Northwest regions of the U.S. Rock collectors, lapidaries, sculptors who quarry stone, and potters who dig clay and glaze materials should be aware of this highly carcinogenic mineral. The EPA already considers erionite a risk and published a rule which would require anyone wishing to use erionite for any commercial purpose to report their intention (see ACTS FACTS, Jan 1992).

2. **Acetaldehyde** was added to the list of substances "which may reasonably be anticipated to be carcinogens" on the basis of inhalation studies in animals.* Acetaldehyde and other aldehydes are formed when common substances such as wood, coal, or wax, are heated or burned (ACTS FACTS, Feb. 1992), and they are found in internal combustion engine exhaust. It also is formed when water reacts with vinyl acetate, a monomer used to make many plastic polymer products such as white glues (ACTS FACTS, March 1991).

Natural sources of acetaldehyde include trace amounts found in all ripe fruits, in many essential oils from plants and flowers, and in some wines and other alcoholic beverages after exposure to air. It is also a natural component of broccoli, coffee, mushrooms, and onions, and may be found in cheese, heated milk, cooked beef and chicken, and rum.

Larger concentrations, usually up to 0.047 percent (470 parts per million), are found in foods which have been artificially flavored with acetaldehyde. Acetaldehyde is a "generally recognized as safe" (GRAS), FDA-approved, food additive, which is especially common in orange, apple, and butter flavors. Significant amounts of acetaldehyde may be in apples and strawberries when it is used as a fumigant for storage for these fruits. There is no "tolerance level" for acetaldehyde, which means that there is no limit to the amount which may remain in food after fumigation.

While these food sources provide exposure by ingestion rather than by inhalation as in the NTP cancer tests, it would seem that reevaluation of the food use of acetaldehyde is in order.

3. Silica (crystalline forms of quartz, cristobalite, tridymite) in the respirable form was added to the list of substances "which may reasonably be anticipated to be carcinogens."* There is "sufficient evidence on the basis of respirable silica in experimental animals" and "limited evidence for the carcinogenicity of crystalline silica in humans."* The data cited for the limited human

evidence was from the International Agency for Research on Cancer (IARC). IARC has considered silica a carcinogen for some time.

Products containing silica include clays, glazes, investment mold compounds, some types of sculpture stones, tripoli and other abrasives, and many more. Now both labels and material safety data sheets for silica-containing art products should alert users to the hazard. Currently, some clay product labels only say "safe when wet" and do not explain that the dust is considered a cancer hazard. However, one does not have to be very imaginative to see that some clay dust will be present whenever clay is used.

ACTS feels that talc-free** clay still is a suitable material for adults, and talc-free,** low-silica clays are acceptable for children provided that adults and teachers take precautions to avoid dust exposure. Users need to reject projects which involve sanding, clay mixing, or other dusty tasks, provide wet clean up, and practice good personal hygiene.

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* The NTP's degrees of evidence for carcinogenicity are as follows:

1) Known to be carcinogens:
   There is "sufficient evidence of carcinogenicity" from studies in humans "which indicates a causal relationship between the agent and human cancer."
2) Reasonably anticipated to be carcinogens:
   A There is "limited evidence of carcinogenicity" from studies in humans, "which indicates that causal interpretation is credible, but that alternative explanations, such as chance, bias or confounding, could not adequately be excluded," or
   B There is "sufficient evidence of carcinogenicity" from studies in experimental animals "which indicates that there is an increased incidence of malignant tumors: (a) in multiple species or strains, or (b) in multiple experiments (preferably with different routes of administration or using different dose levels), or (c) to an unusual degree with regard to incidence, site or type of tumor, or age at onset. Additional evidence may be provided by data concerning dose-response effects, as well as information on mutagenicity or chemical structure."

** ACTS feels that clays containing talcs contaminated with amphibole asbestos are not safe to use. See below.

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RULE ON TREMOLITE, ETC. STAYED AGAIN

57 *FR* 7877, March 5, 1992

Regulation of non-fibrous forms of amphibole asbestos minerals has been delayed again until May 30, 1992. These non-fibrous varieties of tremolite, anthophyllite and actinolite have been included in OSHA's asbestos standards for general industry and construction since June, 1986, but repeated stays of action have kept this issue unsettled for artists who use talc, steatite, or other minerals contaminated with the asbestos-like minerals.

==========

DANGEROUS DUCKLINGS

Morbidity & Mortality Weekly Report, 41(11), CDC, Mar. 20, 1992, pp. 185-7.

Last month's ACTS FACTS discussed the Centers for Disease Control's (CDC) warning about severe salmonella bacterial infections in infants whose parents handled iguanas and other reptiles. This month, cases of infection from pet ducklings were used to show that birds also transmit the disease. CDC suggests careful handling of pets, especially ducklings, during the spring and Easter seasons.

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LEAD COMPANY PRESIDENT WILL NOT CONTEST CRIMINAL CHARGES

BNA-OSHR, Vol 21, No. 41, March 18, 1992, pp. 1387-8; Vol 21, No. 9, July 31, 1991, p. 259.

The former president of Federated Weiner Metals, Michael Baker, pleaded no contest to five criminal misdemeanors violating California workplace lead standards (California v. Baker, Calif MunCt, No.89M0608, 3/16/92). Baker was sentenced to three years probation on the condition that he pay a $40,000 fine and reimburse the district attorney's office for $ 10,000 in investigative expenses. Baker also must undergo 90 days of electronic surveillance to keep him within 150 feet of his home after working hours.

In an earlier action, 33 misdemeanor charges against the company's plant manager were dismissed in exchange for testimony against Baker. The charges which Baker did not contest were failure to:

* have a written compliance program for lead control;
* provide and ensure the use of respirators;
* provide a clean change room for employees;
* provide employee information and training for workers exposed at or above the action level for lead; and
* provide information to employees about the lead standard and the specific operations which could expose employees to lead, and the proper selection and use of respirators and the contents of any compliance plan in effect.

Similar compliance failures could be found in many stained glass and art foundry businesses. Lead standard compliance is crucial in order to avoid such actions and to keep employees from harm. According to the Los Angeles district attorney's office, one of the employees suffered permanent damage from lead exposure. As a further consequence, the company is no longer in business.

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AIHA LEAD PAMPHLET AVAILABLE

The American Industrial Hygiene Association (AIHA) has published a pamphlet called "Is Lead a Problem in My House." It is a good condensation of information about lead in the home environment and what to do about it. Not much information on art or hobby sources is present, but it does list making "stained glass windows or reloading ammunition" and using pottery or leaded crystal. A free copy of the pamphlet may be obtained by writing: AIHA, P.O. Box 8390, 345 White Pond Drive, Akron, OH 44320.

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ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

May 1, 1992
Vol. 6, No. 5

ACTS FACTS SOURCES

The Federal Register (FR) is ACTS FACTS' major source of information. The FR is a compilation of all the regulations and public notices issued by federal agencies. Published daily, this vast amount of printed matter often contains items which affect the health and safety of artists, theater, or crafts people. Other sources of include the Bureau of National Affairs Occupational Safety & Health Reporter (BNA), the Centers for Disease Control (CDC), HAZCHEM Alert, and many other sources. ACTS cites its sources and answers inquiries about them.

AUSTRALIAN ARTISTS SURVEYED

A fascinating survey of health and work practices of professional Australian artists in the Melbourne area was conducted by Rosemary Mangiamele and Helen Raik of the Department of Community Services and Health's Moonee Ponds Rehabilitation Unit.

Approximately 50 percent of 330 targeted artists responded to the questionnaire. Preliminary statistical data analyses indicate that there may be cause for concern about the artist's health. Symptoms occurring more frequently than expected (compared to Australian Bureau of Statistics data) included skin conditions, allergies, cognitive disorders, psychological conditions, headaches and migraines, and musculoskeletal problems. In addition, 60 percent of the artists felt they were at risk working in their profession.

Many risk factors seen among U.S. and Canadian artists also were seen in the Australian artists. Included were that they work with hazardous materials, work for very long hours over periods of many years, tend to work alone under conditions which do not meet recommended safety standards, and yet most feel they are well-informed about health and safety.

The researchers found that despite increased availability of health and safety information in recent years, the situation for artists has changed very little. A casual survey of a number of major art supply shops found that there were almost no health warnings on materials manufactured locally or imported, that the occupational safety and health content of graduate courses was negligible, and doctors consulted by artists still dismissed the importance of their working environment.

Researchers also investigated the attitudes of artists which mitigate against changing their work practices and made recommendations for improving the situation. Further information about the survey can be obtained from ACTS or from Helen Raik and Rosemary Mangiamele, P.,O. Box 9848, G.P.O. Melbourne 3003 VIC Australia.

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EMPLOYERS MUST PROVIDE AND PAY FOR GLOVES

BNA-OSHR, Vol. 21, No. 45, 4-15-92, p. 1518-9

Employers who are required to provide flame resistant gloves to their workers must also pay for them, the Occupational Safety and Health Review Commission ruled (*Secretary of Labor v. Erie Coke Corp.*, OSHRC, Docket No. 88-611, 4/10/92). Previously the company made the gloves available but required employees to pay for them.

==========

HEATHKIT DO-IT-YOURSELF ERA ENDS

NY Times, New York Late Ed., March 30, 1992, pp. 1, D10.

An article in the NY Times bemoaning Heath Company's decision to close out their kits of electronic equipment lost this editor's sympathy with the line, "No more will fathers teach sons how to solder at the kitchen table." Some changes are good ones.

==========

MUSICAL INSTRUMENT WORKERS OVEREXPOSED TO WOOD DUST

NIOSH, HETA 91-298-2182, February 1992

The National Institute for Occupational Safety and Health (NIOSH) studied wood dust and other exposures at two Bozeman, Montana musical instrument manufacturing firms. Overexposure during rib assembly and planing operations was found. NIOSH speculated that similar jobs probably also overexposed workers to wood dust.

NIOSH found other problems. Some workers used the wrong filters in their respirators and others destroyed the hearing protection of their ear muffs by modifying them so that a cassette player/ radio earpiece could be placed inside. A copy of this report can be obtained by asking for HETA 91-298-2182, February 1992 from NIOSH Publications Office, 4676 Columbia Parkway, Cincinnati, OH 45226-1998. Enclose a self addressed mailing label.

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FORMALDEHYDE CURE FOR SAGGING CANVAS

American Artist, Vol 56, Issue 598, May 1992, p. 14-15.

This month's American Artist "Question and Answer" page suggests artists fix sagging canvases as follows:

Formalin brushed onto the back of the canvas will cure the rabbitskin glue, making it more stable. Formalin is made by reducing the strength of formaldehyde to a four percent solution by adding water. Formaldehyde can be obtained from chemical-supply houses or drugstores and normally comes in a thirty-seven percent solution. A word of caution: the inhalation of formaldehyde fumes can be a respiratory irritant and should be guarded against. You can brush the formalin onto the back of the canvas before making the painting, or use it to tighten an already sagging canvas.

Formaldehyde is more than an irritant. It is a carcinogen and sensitizer. Inhalation would be difficult to prevent since formaldehyde will get airborne when diluting and painting it on. ACTS would like to hear from readers who know about safer methods.

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INTERIM NIOSH FOG REPORT AVAILABLE

NIOSH, INTERIM REPORT, HETA 90-355

The National Institute for Occupational Safety and Health (NIOSH) at the request of Actors' Equity Association and the League of Broadway Theaters and Producers investigated possible health effects associated with theatrical fog used in Broadway shows. Data from four productions which use fog (Les Miserables, Miss Saigon, Phantom of the Opera, and Grand Hotel) were compared with data from five unfogged shows (Lost in Yonkers, Gypsy, Getting Married, Once on the Island, and Six Degrees of Separation).

Results from NIOSH's medical questionnaire consistently showed that fog-exposed performers report significantly more mucous membrane irritation, and a higher prevalence of cough, shortness of breath, wheezing and chest tightness. While most of the fog chemicals are known to be irritants, the cause of the high symptom prevalence was not clear to researchers because air monitoring showed that exposures were very low. Explanations for the findings included that the fog concentrations could be high enough to cause symptoms during the short time when fog is generated, that the questionnaire design may have caused over reporting, or other factors.

ACTS believes that the cause clearly is the fog chemicals and that NIOSH errs by expecting performers to tolerate the same levels of pollutants as healthy adult factory workers. If the study was of a "sick" building, we feel NIOSH would not hesitate to attribute office worker's symptoms to these airborne irritants.

Most health professionals accept that very low levels of indoor air pollutants can affect people. They also understand that repetitive motion can harm workers, and that athletes can be injured if they exert themselves under unfavorable conditions. It is amazing then, that NIOSH cannot appreciate the risk to an actor or singer whose livelihood depends on two little strands of tissue in their throat which vibrate with incredibly complex repetitive motion under stress and strains that average people can only imagine. Or the risk to dancers who exert themselves beyond pain. Add fog chemical air pollution to the stage, and the symptoms should be no surprise.

Perhaps the researchers should rely more on their own senses: "One NIOSH investigator experienced throat irritation when encountering the theatrical smoke while performing the survey." But since the etiology of the symptoms is still unclear to NIOSH, they plan a return visit to gather further information.

The report contained one unexpected result. Air monitoring showed that some fog products still contain toxic ethylene glycol and diethylene glycol. NIOSH repeatedly found ethylene glycol in samples taken at Grand Hotel where Fog Power™ was used, and at Les Miserables where Rosco™ was used. A copy of the report can be obtained by requesting Interim Report No. HETA 90-355 from NIOSH, Hazard Evaluations and Technical Assistance Branch, 4676 Columbia Pkwy, Cincinnati OH 45226. Include a self-addressed mailing label.

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LEAD PAINT REMOVAL METHODS STUDIED

NIOSH, HETA 90-070-2181, February 1992

The National Institute of Safety and Health (NIOSH) evaluated the hazards to workers during the Department of Housing and Urban Development's demonstration paint removal project. NIOSH found overexposure to lead "during abrasive removal, heat gun, cleaning, enclosure, and other abatement methods." The highest exposures were during heat gunning (which softens paint prior to scraping). Even restricting the gun nozzle airstream temperature to 700 degrees Fahrenheit failed to control worker exposure.

Recommendations included avoidance of heat gun and abrasive removal methods. A copy can be obtained by requesting HETA 90-070-2181, February 1992 from NIOSH Publications Office, 4676 Columbia Pkwy, Cincinnati OH 45226-1998. Enclose a self addressed mailing label.

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FREE CARPET BROCHURE AVAILABLE

EPA/560/2-91-003, March 1992

As mentioned in the February ACTS FACTS, we are announcing the availability of "Indoor Air Quality and New Carpet - What You Should Know." We hoped this brochure would offer good advice because it was "developed by a consensus process which included Federal and non-federal organizations and (was) sponsored by the U.S. EPA." Yet a disclaimer now says: "The views or opinions expressed by organizations listed on this brochure may not necessarily reflect the opinions of EPA, other Federal agencies, or other organizations that collaborated in preparing this brochure."

Other depressing double-speak occurs which the brochure lists methods of reducing exposure to carpet emissions while implying that there is no real reason to follow these precautions. If you are still interested, copies are available free by writing to Dave Kling, Acting Director, Environmental Assistance Division (TS-799), Office of Pollution Prevention & Toxics, U.S. EPA, 401 M St., SW, Washington DC 20460, or FAX request to: 202/554-5603.

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SMOKING BAN-STRESSED WORKER WON'T BE COMPENSATED

BNA-OSHR, Vol. 21, No. 44, April 8, 1992, p. 1490.

An appeals court has ruled that a smoker who claimed she was totally disabled by mental stress after her employer instituted a plantwide smoking ban is not eligible for workers' compensation.

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ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

June, 1992
Vol. 6, No. 6

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FORMALDEHYDE RULE OUT AT LAST

57 FR 22289-22328, May 27, 1992

On December 4, 1987, the Occupational Health and Safety Administration (OSHA) issued what was expected to be its final formaldehyde rule. This rule was challenged in the courts by labor, industry, and Public Citizen, a public interest group. In response to a remand by the U.S. Court of Appeals for the D.C. Circuit, the formaldehyde rule is now finally amended to lower the eight hour time weighted average permissible exposure level (PEL) from 1 part per million (ppm) to 0.75 ppm. The new rule also provides medical removal provisions (time away from exposure or transfer to other work) to supplement medical surveillance requirements for those employees suffering significant eye, nose, or throat irritation, or skin irritation or sensitization.

In addition, the new amendments establish label requirements for all forms of formaldehyde including solutions composed of 0.1 percent or greater or which can be expected to release airborne concentrations of greater than 0.1 ppm. The labels also must include a warning that formaldehyde presents a potential cancer hazard if use of the material can foreseeably release airborne concentrations exceeding 0.5 ppm.

The final amendments also provide for annual training of all employees exposed to formaldehyde at levels of 0.1 ppm or more. Employers are obligated to monitor their exposed employees to make this determination.

Supplemental information for the new rule lists industries and types of employment where significant formaldehyde exposure occurs. Those of interest to artists, conservators, craftspeople, and teachers are: furniture, foundries, (using the shell core process), laboratories, apparel manufacturers, plastic molding, paint and pigment, photofinishing labs, and biology instructors.

The new rule takes effect on June 26, 1992. Employers of exposed workers should immediately obtain a copy of the new standard. They may contact their local OSHA offices or Mr. James Foster, Office of Information and Consumer Affairs, OSHA, U.S. Department of Labor, room N-3647, 200 Constitution Avenue, N.W., Washington, DC 20210. Telephone 202/523-8151.

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RIGHT-TO-KNOW ENDORSED BY U.S. EMPLOYERS

BNA-OSHR, Vol. 21, No. 49, May 13, 1992, p. 1625-6.

The hazard communication standard or right-to-know law received praise in a report released by the General Accounting Office on May 11. The study, *Employers' Experiences in Complying With the Hazard Communication Standard*, was based on a nationally representative survey of 2000 employers in the construction, manufacturing, and service industries. Among the findings were:

* More than half (56 percent) of U.S. employers believe the law has vastly improved the availability of information on dangerous workplace chemicals.

* More than half of the employers believe that data sheets provide essential information about the risks, safe handling and general use of hazardous substances despite the weaknesses of the material safety data sheets.

* Approximately 30 percent of employers have replaced a hazardous chemical with a less hazardous one because of information provided under the regulation.

* Most small employers (almost 70 percent) reported no difficulty either in maintaining a file of safety data sheets or in making the sheets accessible to workers. Most small employers had eight or fewer products on which data sheets were required.

* Large employers (with 500 employees or more) had more difficulty complying with the data sheet provisions because they had to keep larger files with 250 or more data sheets.

On the negative side, almost 80 percent of small employers reported difficulty meeting training requirements because either they lack expertise in training or the data sheets were too complex to use. An even greater proportion of large employers reported some difficulty complying with training requirements.

Concerning the cost, more than half of small employers reported increased spending for compliance, but less than 15 percent described the increase as great or very great. Large employers also said they experience cost increases.

The study was requested by Sen. Dale Bumpers (D-Ark) and Rep. Norman Sisisky (D.Va) in response to complaints about the law from employers, especially small business employers. Art business owners and administrators in schools and universities also often complain about this law. Perhaps a copy of the report will convince them that the law is not seen as onerous by the majority of businesses. The report (GAO-HRD-92-63-BR) is available from the U.S. General Accounting Office, P.O. Box 6015, Gaithersburg, Md. 20877.

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PHOTO-WASTE SILVER: NO DIET FOR A SMALL PLANT

COMPLIANCE ENVISION:Monthly Report, (Bramalea, Ont., Canada) May 1991, p.1

The use of sewage sludge to fertilize crops is a common practice in many countries. In order to explore this technology as a possible method of disposing of its waste, Eastman Kodak studied agricultural use of photoprocessing waste treatment sludges. The sludge was used to fertilize corn, oats, lettuce, turnips, and soybeans.

Four soil treatment groups were use: (1) a plain soil control group, (2) a control of plain soil mixed with 1 percent ordinary sludge; (3) an experimental group of plain soil mixed with 1 percent of a sludge containing 10 milligrams per gram (mg/g) silver; and (4) an experimental group of plain soil mixed with 1 percent of a sludge containing 100 mg/g of silver.

According to Dr. Hirsch of Eastman Kodak Company, the concentration of silver affected characteristics such as the height of some seedlings and the weight of dry corn, oats, and soybeans. Silver concentrations in mature corn, turnips, oats and soybeans were below 0.08 micrograms per gram (the detection limit of the test method used). However, leaves of lettuce grown in the highest silver-containing sludge/soil mixture had eight times more silver than leaves of the control plants. There was also some uptake of silver in the lower portions of oats, soybeans, and corn. The effects of eating plants containing silver are not known.

THe results of this study are not surprising since it is known that various metals such as lead are incorporated from soil in different amounts by various plants. Land application of any sludge, then, must be carefully considered since metals and other substances may make their way back into the food chain. Home-studio photographers, ceramicists, jewelers, painters, and other artists also must take care not to dispose of their wastes onto soil.

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PHOTO COMPANY CITED

BNA-OSHR, Vol. 21, No. 44, April 8, 1992, p. 1504.

Koniga Imaging U.S.A. Inc., Glen Cove, NY is contesting OSHA citations resulting in a $ 51,300 penalty for 21 items including violation for exposing employees in the film finishing department to upper extremity repetitive motion disorders and carpal tunnel syndrome while they roll and tighten film [Section 5(a)(1), the general duty clause]; failure to dispose of combustible waste residues daily [1910.106(d)(9)(iii)]; and failure to develop and implement an emergency response plan [1910.120(q)(1)].

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SMOKER LEGALLY FIRED

BNA-OSHR, Vol. 21, No. 50, May 20, 1992, p. 1679

The U.S. District Court for the Eastern District of Michigan ruled May 5 (*Hatfield v. Johnson Controls Inc.*, DC EMich, No. 91-CV-40029-FL, 5/5/92) that an employer had the right to fire a worker who violated a health and safety rule for which the company's rulebook permitted various disciplinary actions at the employer's discretion. The worker, a supervisor, was fired after his supervisor caught him smoking for the second time in a restricted area.

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FURTHER REDUCTION OF LEAD IN CONSUMER PAINTS PROPOSED

57 FR 18418-19421, April 30, 1992

The Consumer Product Safety Commission (CPSC) is investigating the possible revision of its lead paint regulations in the light of recent findings about lead toxicity. At present, 0.06 percent is the maximum allowable limit for lead in paint. This limit was calculated when the Centers for Disease Control's blood level of concern in children was set at 25 micrograms per deciliter (ug/dl). The new blood lead level of concern is 10 ug/dl. When this new level and other recent data on absorption of ingesting lead in young children is applied in a process similar to that used to develop the 0.06 percent limit, the resulting maximum allowable limit for lead in paint is estimated as 0.01 percent.

The small amounts of lead in "lead-free" paints usually result from contamination. Likely sources include lead in pigments derived from earthen materials such as lead-contaminated zinc ore, and the accidental cross-contamination during manufacture when lead products are made in the same facility.

The CPSC is seeking additional information for the assessment of age-specific, non-occupational exposure to lead in paint, including residential architectural paint and paint for application to toys and other consumer products. Comments should be received by the Commissions by July 14, 1992.

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TWO PUBLICATIONS ON LEAD AVAILABLE

1. The Agency for Toxic Substances and Disease Registry, Division of Health Education, 1600 Clifton Road, N.E., Atlanta, GA 30333, (404) 639-6204, offers: The Nature and Extent of Lead Poisoning in Children in the United States: A report to Congress.

2. A "Manual for the Safe Removal of Lead Paint" is available from the New Jersey Department of Health's (NJDOH's) Accident Prevention and Poison Control Program. For a copy of the manual or for further information on the removal and clean-up of lead paint, contact the Accident Prevention and Poison Control Program, NJDOH, CN 364, Trenton, NJ 08625, (609) 292-5666.

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TO YOUR HEALTH

Health and Safety Experts Protect Craftspeople

Since the early seventies, Gail Barazani, Michael McCann, and Monona Rossol have been leaders in promoting awareness of health and safety hazards in the arts. Among the consequences of their actions are new government regulations designed to protect consumers—most recently, a law enacted last year requiring chronic-hazard warnings on the labels of art materials.

Still, these experts say, much remains to be done in the areas of legislation, enforcement, and, most important, research and education.

The issue is not without controversy. For example, attempts to prohibit the use of lead have met with resistance from some stained-glass artists who claim that such a ban would threaten their livelihood. Few artists, however, would dispute the importance of having access to full and accurate information, clearly articulated, on the nature of dyes, solvents, and other materials and processes that, improperly used, can cause ills ranging from kidney damage to lung ailments.

That's where McCann, Rossol, and Barazani come in. Each has a different background and approach, but all share a sense of mission. And, they've discovered, in a line of work that often deals with life-and-death situations, a little humor never hurts.

Gail Barazani: Commonsense Columnist

When Gail Coningsby Barazani was in high school, she recalls, her art teacher told her: "Gail, you'll never be an artist. You're too much of a Mrs. Stuyvesant Peabody Fish." Undaunted, Barazani eventually did have a career in the arts and has done considerable good along the way, too. She feels strongly, however, that having a social conscience is not enough. "If you're an advocate," she says, "you've got to be a communicator."

Gail Barazani

Barazani has excelled at both, notably through her column, "To Your Health," which has appeared in the *Crafts Report* since 1974. Tackling various aspects of working safely in the crafts, the column is at once serious in its warnings and reassuring in its down-to-earth, commonsense tone.

Barazani, who lives in Chicago, began her career by chance in 1973 when, hospitalized for strange lung symptoms, she read an article on the dangers of asbestos. "I realized that, when I was an art education major, darned if I hadn't bought asbestos in 25-pound bags and used it as modeling material, mixed with wheat paste and water. There were recipes for it in art books!"

Alarmed, Barazani contacted Bertram Carnow, a pioneer in occupational and environmental health. "I talked to this respected fellow for more than 45 minutes from my hospital bed," she says. "He thought artists were exposed to many hazards. So I asked, 'Would you come and talk to a group of artists about it?'" He agreed, and, following recovery, Barazani organized the meeting, which was something of a watershed for the interest it generated.

She subsequently worked for a decade with Carnow, who became her mentor, and found herself part of a movement. "It was all around us, the need for information," Barazani says. "People started telling their stories. I heard from artists, factory workers." She flourished as a researcher: "It's like being a detective. If you find something that verifies what you suspect, it's heaven. I'd be happy sitting in a library for the rest of my life."

Barazani, who is also a consultant, writes "To Your Health" in longhand at her dining-room table, often getting her ideas from reader letters. A book compilation of 80 or 90 of her columns is in the works.

"We've got to begin the proper training of artists and artisans in high school, to incorporate the philosophy of health and safety at the earliest stages," Barazani says. Although she still encounters enough ignorance to shock and anger her, "you have to look at this stuff in perspective. I hope I'm pointing out what you can do rather than what's awful. I don't want to scare people without giving them a hand."

Write to Barazani care of the *Crafts Report*, 87 Wall St., Seattle, WA 98121.

Michael McCann: Toxic Avenger

Taped to a wall in Michael McCann's cluttered office, where he directs the Center for Safety in the Arts in downtown New York City, is a tricked-up movie poster—a spoof of the campy science-fiction cult classic *Toxic Avenger* about a superhero who battles the evil forces of toxic-substance pollution. In place of the avenger's head is the bearded, bespectacled face of McCann. "One of our interns did that," he says, obviously tickled by the homage.

Michael McCann

Born in Toronto, Ontario, McCann first became interested in occupational health and safety as a chemistry student at the University of Calgary in the early sixties. "We handled all these poison gases and weren't taught anything in class about the hazards," he says. "You sort of learned about them or else." Working for the Canadian Defense Research Board in a nerve-gas lab further "sensitized me to the issue, shall we say."

After graduation, McCann moved to New York, where he taught grade school, was a technical writer for a large corporation, and free-lanced science articles for magazines aimed at lay readers. One day, he dropped in on a poorly ventilated silk-screen workshop. "I had a headache in 20 minutes," McCann recalls. Inspired, he wrote a series of reports on unsafe art practices for the Foundation of the Community of Artists (later compiled into the *Health Hazards Manual for Artists*) and discovered his calling.

"People knew nothing about the chemicals they were using or how to work safely," he says. "Labeling was horrendous. I decided it was an area that needed real work."

In 1977, McCann joined Monona Rossol and Catherine Jenkins to found the Center for Occupational Hazards, a national nonprofit clearinghouse, renamed the Center for Safety in the Arts in 1988. He and his small staff annually field some 13,000 inquiries on safety in the visual and performing arts, dispensing information via data sheets, the quarterly *Art Hazards News*, and a computer bulletin board. Occasionally, they take on special projects—a study of reproductive hazards, for instance, funded by the March of Dimes.

McCann also consults on such matters as ventilation and the storage and handling of toxic substances. In his lectures, he tells chilling true stories—the monk killed by overexposure to fumes from the sodium cyanide used to clean chalices, the painter with damaged arteries from washing in turpentine and lacquer thinner—to drive his point home.

"We still see lots of lead poisoning," says McCann, who is preparing a revised edition of his 1979 book *Artist Beware*. He thinks good lead substitutes can and should be developed for use by artists, "but the problem is what incentive is there." The same, he says, goes for cyanide. "There are industrial substitutes. However, there's a step between an industrial process and an artistic one. What's needed is for an artist to take these materials and work on it. It would be an excellent MFA thesis."

McCann can be contacted at the Center for Safety in the Arts, 5 Beekman St., Suite 1030, New York, NY 10038, 212-227-6220.

Monona Rossol: A.C.T.S. Headliner

The career of Monona Rossol, president of Arts, Crafts and Theater Safety (A.C.T.S.), defies a one-word description. A chemist and industrial hygienist, she also is a singer, actress, ceramist, and glassblower. But Rossol, who considers activism her primary pursuit, sees no incongruity: "I find it difficult to understand why the sciences are not required training for artists, especially those who are going to teach. Art processes are very chemical. We need to know what's happening, not just for health but for quality."

Rossol's parents were performers, and she was a professional acrobat for much of her childhood. In the sixties, she attended the University of Wisconsin, first earning a chemistry degree, then entering the graduate art program. At a ceramics seminar, she brought up the subject of chemical hazards and "encountered immediate resistance. I figured if that many people didn't like what I was saying, there must be some good point to it. And I just never let go."

Monona Rossol

Rossol was associated with the Center for Occupational Hazards for a decade before branching out to form A.C.T.S. in 1987. Along with several colleagues, she runs the nonprofit corporation from her office in Greenwich Village, offering advice, referrals, and research services at no charge. (A.C.T.S. is supported by unsolicited donations and income from consulting work.) She also puts out a newsletter, *A.C.T.S. Facts*, and is the author of the books *Stage Fright: Health and Safety in the Theater* and the *Artist's Complete Health and Safety Guide*.

Rossol frequently is on the road, averaging 100 lectures and consultations a year, and credits her show-business experience with instilling in her the discipline required to maintain such a schedule. "My theatrical background also allows me to take a dull subject and keep an audience interested," she says. By now, she can quickly spot disbelievers and even welcomes hecklers: "Those are the people I play off of."

As a consultant, Rossol helps art institutions comply with "right to know" laws enforced by the Occupational Safety and Health Administration (OSHA) to protect employees.

Rossol favors using substitutes for such materials as lead and cadmium. "That's the hard part—rethinking what we've come to accept," she says.

"My frustration is that people are unwilling to make those choices. They're shutting their eyes and hurting themselves. If they're teachers, they hurt others. Artists and craftspeople will always find a way to be creative, even when faced with change."

"At A.C.T.S.," Rossol says, "we look forward to helping anybody who's trying to make a living doing the craziness of this kind of work. It's a difficult life, to be a craftsperson. Obviously not chosen for the financial rewards. So these people should be treated with care and respect and love." Rossol can be contacted at A.C.T.S., 181 Thompson St., No. 23, New York, NY 10012, 212-777-0062.

This article originally appeared in the October/November 1991 issue of American Craft magazine.

Controversial Lead Bill Stands Before Lawmakers

"How many sun catchers will you sell if each one has to carry a toxic warning label?" This question, posed in an article in *Score* magazine from Spectrum Glass, is in response to House Resolution 3554, now in committee. HR 3554, the Lead Exposure Reduction Act of 1991, bans stained glass lead came, then specifically exempts it, requiring each came to be labeled as a toxic and hazardous material to be used by adults only.

"This we can probably deal with," says the article in *Score*. "In fact, it's not a bad idea to be regularly reminded that came can be dangerous if not handled with care. Unfortunately, that's where the easy news ends. The bill bans *construction materials* containing more than 0.1 percent lead. Um, windows are construction materials, lead glass or otherwise.

So if HR 3554 passes unmodified to allow for stained glass, then your options will be: (a) cease using lead and solder in your work or for installation, or (b) cease doing work for installation."

Score reports that all finished products containing more than 0.1 percent lead will have to carry warning labels. That means sun catchers, night-lights, kaleidoscopes, lamp shades, gift items, and all stained glass will have to be tagged.

"HR 3554 even goes so far as to establish a national inventory of lead-containing products," reports *Score*. "Each producer of a product containing lead would have to submit the amount and percentage of lead the product contains.

"Once a product is listed, any change in lead content would require a new product approval by a specially appointed administrator. Each individual stained-glass project may be required to get that approval before being produced. Of course, this seems downright silly as it applies to stained glass, but if we fail to act, it will be federal law."

Score urges craftspeople to write or call their legislators, especially members of the House Energy and Commerce Committee, Transportation and Hazardous Materials Subcommittee.

More detailed background information on the Lead Exposure Reduction Act is available from Jim Matthews, Editor, *Score*, Spectrum Glass, Box 646, Woodinville, WA 98072.

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SCIENTIST WINS SUIT AGAINST EPA

Press Release: Stephen M. Kohn, Atty for Dr. Jenkins & Chair of Nat'l Whistleblower Center, Wash., DC

The Department of Labor (DOL) ruled this week that Dr. Cate Jenkins, a leading expert on Agent Orange, was harassed and punished by the Environmental Protection Agency (EPA) in violation of whistleblower protection laws. Dr. Jenkins came under fire by the EPA beginning in 1990 when she alerted the public that studies on the effects of dioxin in Agent Orange had been falsified by the Monsanto Chemical Corporation.

In April 1992, Dr. Jenkins was removed from her job and transferred to an isolated position which prevented her from having any contact with the public or industry. According to her attorney, Stephen M. Kohn, this was an "attempt by the EPA to move Jenkins into bureaucratic Siberia." Then in a May 26, 1992 letter the DOL ruled: "Ms. Jenkins should be reinstated to her position as Environmental Scientist...and should be reimbursed for any legal fees and costs which she may have expended in connection with her complaint."

Dr. Jenkins also is one of the founders of the Center for Occupational Hazards (now the Center for Safety in the Arts) along with Michael McCann and Monona Rossol. Congrats Cate!

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METHYL BROMIDE DATA AVAILABLE

57 FR 23422-3, June 3

Methyl bromide, a gas used as an insecticide fumigant in museums and other facilities, in fire extinguishers, and as a refrigerant, has been studied for long-term hazards by the National Toxicology Program (NTP). There was no evidence of carcinogenic activity in male or female mice exposed to 10, 33, or 100 parts per million (ppm) in the air. There was, however, degenerative changes in the brain, heart, and damage to the nose. These effects persisted even though exposure in the 100 ppm group was terminated after 20 weeks.

Copies of Toxicology and Carcinogenesis Studies of Methyl Bromide (CAS No. 74-83-9) in B6C3F1 Mice (Inhalation Studies)(TR 385) are available from NTP Central Data Management, NIEHS, P.O. Box 12233, MD A0-01, Research Triangle Park, NC 27709; (919) 541-1371.

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METHYL BROMIDE TO BE REGULATED UNDER CLEAN AIR ACT

57 FR 23586, June 4, 1992

The EPA is developing regulations which would add methyl bromide to the list of class I ozone depleting substances under section 602 of the Clean Air Act Amendments of 1990. The Agency is requesting clearance from the Office of Management and Budget to collect baseline information from producers, importers, and exporters.

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NON-ASBESTIFORM TALC MINERALS REMOVED FROM ASBESTOS RULE

57 FR 24310-24331, June 8, 1992

OSHA has finally ruled on how it will regulate the minerals which often contaminate ceramic talc. The fibrous forms of tremolite, anthophyllite, and actinolite (referred to as ATA) will continue to be regulated as asbestos. But the "nonasbestiform" or "non-fibrous" forms of ATA will be regulated as "particulates not otherwise regulated" (PNOR) at 15 milligrams per cubic meter (mg/m^3) total dust, and 5 mg/m^3 (respirable dust).

OSHA ruled in opposition to the opinions of the American Thoracic Society and the National Institute for Occupational Safety and Health. These public health organizations believe that nonasbestiform ATA cleavage fragments of the appropriate length and width have hazards similar to those of fibers. OSHA concluded that:

> *...there are a number of studies which raise serious questions about the potential health hazard from occupational exposures to non-asbestiform...[ATA]. However, the currently available evidence is not sufficiently adequate for OSHA to conclude that these mineral types pose a health risk similar in magnitude or type to asbestos. The Agency believes, however, that the evidence suggests the existence of a possible carcinogenic hazard and other impairing non-carcinogenic adverse health effects.**

One major confounding factor in several of the studies is the fact that tremolitic talc is often contaminated with both fibrous and non-fibrous forms of ATA. This is especially true of the NIOSH study of R.T.Vanderbilt talc mine workers. Vanderbilt industrial talc contains both forms of tremolite. The health effects of the non-fibrous form alone, then, cannot be separated.

All of the studies are complicated further by the fact that there is a continuum of small amounts of undefinable intermediate types between the fibrous and non-fibrous forms of these minerals.

Ideally, ACTS would like to see mineral arguments put aside by regulation of all thin fibers or fragments of any inert material that is one micron in diameter and smaller. It is known that thin fibers of substances such as erionite, glass, ceramic fiber (see next article), and even plastic can cause cancer in animals. Erionite also exhibits ample human evidence.

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* This opinion is quoted in the rule from one of OSHA's own previous reviews in 55 FR 4943.

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OSHA PROPOSES NEW SYNTHETIC FIBER AND ASPHALT LIMITS

(57 FR 26001-26602, June 12, 1992)

In its proposed Air Contaminants rule, OSHA extends most of the air quality standards for general industry to the construction, maritime, and agricultural sectors and proposes new limits for:

ASPHALT: One OSHA health scientist originally recommended a 0.2 milligram per cubic meter (mg/m_3) limit, but after lobbying efforts by industry, OSHA relaxed the proposed limit to 5 mg/m_3.

SYNTHETIC FIBER: In position papers on synthetic fibers submitted to OSHA about a year ago, AFL-CIO and other worker's groups recommended a 1 fiber/cubic centimeter (f/cc) limit for fiberglass and mineral wool, and a stricter 0.1 f/cc limit for ceramic fibers (ACTS FACTS, Vol. 5, No. 8). OSHA, however, proposes a 1 f/cc limit for all three types of fiber. OSHA already mandates cancer warnings on all three synthetic fiber products.

Although ACTS would prefer a more protective limit for ceramic fiber, the 1 f/cc limit still indicates to us that fiber kilns, fiber paper, and other products from which fibers can be released do not belong in homes or schools.

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TOLUIDINE RED PIGMENT STUDIED

57 FR 24648-9, June 10, 1992

The National Toxicology Program (NTP) has made available a Technical Report on the toxicology and carcinogenesis of C.I. Pigment Red 3. Also known as hansa red or toluidine red, this pigment is widely used in paints (including art paints), inks, plastics, rubber, and in textile printing. It was nominated for testing in part because of the lack of information on its toxicity. It is an azo dye which is structurally similar to known carcinogens such as Ponceau 3R (C.I. Acid Red 18 or Food Red 7), oil Orange SS (C.I. Solvent Orange 2), and Citrus Red 2 (C.I. Solvent Red 80).

The two year study showed some evidence* of carcinogenic activity in male and female rats, and in male mice. There was no evidence* of carcinogenic activity in female mice. There were also other effects such as kidney and thyroid damage.

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* The NTP uses five categories of evidence of carcinogenic activity to summarize the evidence observed in each animal study: Two categories for positive results (clear evidence and some evidence); one category for uncertain findings (equivocal evidence); one category for no observable effects (no evidence); and one category for studies that cannot be evaluated because of major flaws (inadequate study).

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IGNORING COMPLAINTS ADDS TO WORKER'S AWARD

(BNA-OSHR, Vol. 22, No. 3, June 17, 1992, p. 130)

An Arkansas Court of Appeals ruled that a seriously injured employee whose employer did not repair a machine press after he was told it was defective is entitled to damages 25 percent above those mandated by state compensation statutes. (*Virco Manufacturing Co. v. Lemings*, Ark CtApp, No. D913785, 6/3/92.)

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WORKER'S SURVIVORS MAY SUE EMPLOYER

BNA-OSHR, Vol. 21, No. 51, May, 27, 1992, p. 1705

A North Carolina Court of Appeals ruled (*Dunleavy v. Yates Construction Co.*, NC AtApp, No. 9018SC333, 5/5/92) that the relatives of a worker killed in a trench cave-in may sue the worker's employer. The state Supreme Court had ruled previously that survivors may pursue civil suits when employers intentionally engage in misconduct knowing it is substantially certain to result in death or serious injury.

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NO JURY TRIAL FOR EMPLOYER

BNA-OSHR, Vol. 21, No. 51, May, 27, 1992, p. 1705

A federal district court ruled April 8 (*Sec'y of Labor v. Sharpline Converting Inc.*, DC Kan, No. 92-1021-B, 4/8/92) that an employer being sued for firing an employee allegedly in retaliation for complaining about workplace health and sanitation is not entitled to a jury trial. The court noted that the secretary of labor is seeking back pay for the fired employee and the case did not involve legal rights that would trigger a right to a jury trial.

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OSHA VIOLATION CONTESTED BY LEAD-USING COMPANY

(BNA-OSHR, Vol. 22, No. 3, Jun 17, 1992, p. 135)

Johnson Metall Inc., Lorain, Ohio is contesting a repeat citation and a $ 20,000 penalty for failure to implement engineering and work practices for workers exposed to lead above the permissible exposure limit (1910.1025(e)(1) and for failure to ensure that no employee was exposed to lead above 50 micrograms per cubic meter of air over an eight hour period (1910.1025(c)(1).

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CDC OFFERS GRANTS FOR HEALTH & SAFETY TRAINING TO BUSINESS SCHOOLS

57 FR 21659-60, May 21, 1992

The Centers for Disease Control (CDC) announced the availability of funds to develop and conduct an occupational/environmental safety and health education program for business school students. The aim is to target the students who will become owners, managers, and supervisors. These people will have responsibility for adhering to regulations affecting the safety and health of employees and their surrounding communities. ACTS applauds this approach to improving compliance and will provide further information for subscribers interested in applying for these funds.

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STUDY LINKS HAIR DYES AND CANCER

Amer. Journal of Public Health, Vol. 82, No. 7, July 1992, p. 990-997

An epidemiological study of 573 cancer patients, 385 of which had non-Hodgkin's lymphoma, and 1432 control subjects showed that use of hair coloring products appears to increase the risk of non-Hodgkin's lymphoma. If the results represent a causal association, hair coloring products would account for 35 percent of non-Hodgkin's cases in exposed women. It would also explain why more cases of this cancer are found among women than men. Multiple myeloma and Hodgkin's disease were also associated with hair dye use, but fewer subjects were studied.

It is known that mutagenic and carcinogenic components are found in semipermanent and permanent hair coloring products and that hair-dye components absorb through the skin. An association between occupational exposure to hair dyes and cancer also has been reported, but the risk among users of hair dyes had never been evaluated.

Theatrical cosmeticians and performers who color their hair may want a copy of this study for details such as information about which colors seem more hazardous. Readers may send a self-addressed envelope with $ 1.00 ($.52 for postage, 8 pages copied at $.07/page.

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STUDY SHOWS MANGANESE NON-CARCINOGENIC IN RATS

BNA-OSHR, Vol. 22, No. 5, July 1, 1992, pp. 171-2.

Manganese, a colorant widely used in ceramics and glass, did not cause carcinogenic activity in rats in a feed study conducted by the National Toxicology Program (NTP) according to a draft technical report approved by the NTP's peer review panel. There was no evidence* of carcinogenic activity in rats and equivocal evidence* in mice. The study was not designed to detect or assess any nervous system damage which could be expected to occur with long-term exposure. Chronic manganese exposure causes a disease in humans similar to Parkinson's disease.

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* See footnote next article.

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181 THOMPSON STREET #23, NEW YORK, NY 10012 212 / 777 • 0062

COSMETIC TALC CAUSED CANCER IN RAT STUDY

BNA-OSHR, Vol. 22, No. 5, July 1, 1992, p. 171.

A National Toxicology Program (NTP) peer review panel approved a draft report of a two-year inhalation study that concluded that cosmetic-grade talc produced clear evidence* of carcinogenic activity in female rats, some evidence* in male rats, but no evidence* in either sex of mice. Talc was chosen for this study in part because it is widely used in dusting powders and cosmetics, as a filler in pills and tablets, and in paints, putty, and plaster.

The NTP draft was released less than a month after OSHA removed the non-fibrous asbestos minerals that often contaminate talc (anthophyllite, tremolite, and actinolite or ATA) from regulation under the Asbestos Standard. In order to do this, OSHA discounted data implicating non-fibrous ATA as a cause of talc worker's increased risk of lung cancer. OSHA reasoned that since most industrial talcs are contaminated with both fibrous and non-fibrous amphibole minerals, the health effects of the non-fibrous form alone cannot be determined. The NTP study of cosmetic talc may mean that talc itself is contributing to the cancer risk.

If talc is not the carcinogen in the NTP study, asbestos may be. Small amounts are found in some cosmetic talcs and the FDA has no regulation regarding the asbestos in talcum powders. In 1973, the FDA proposed a permissible amphibole mineral level of less than 0.1 percent, and chrysotile asbestos level of less than 0.01 percent, but the optical microscopy method proposed to analyze the talcs was unworkable and the rule was never finished.

The presence of asbestos in a number of high-grade cosmetic and pharmaceutical talcs was confirmed again recently in a 1991 optical density examination of talcs by A. M. Blount.** The amounts were very small and well below the 0.1 percent required to be reported on Material Safety Data Sheets. In addition, Blount says there are still no analytical methods that can accurately measure a 0.1 percent level of asbestos and amphiboles in talc.

However, there are ways to approximate concentrations which could be used for regulatory purposes and the FDA should begin at once to pursue these. Until than, ACTS's advice is to avoid talcs.

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* The NTP uses five categories of evidence of carcinogenic activity to summarize the evidence observed in each animal study: Two categories for positive results (clear evidence and some evidence); one category for uncertain findings (equivocal evidence); one category for no observable effects (no evidence); and one category for studies that cannot be evaluated because of major flaws (inadequate study).

** A.M. Blount, "Amphibole Content of Cosmetic and Pharmaceutical Talcs," Environmental Health Perspectives, Vol. 94, pp. 225-230, 1991.

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INK DIVERSITY AIDS LAW ENFORCEMENT

Chem. Engineering News, October 14, 1991 p. 100

The U.S. Secret Service has formulas for more than 6000 inks that date back to the early 1900's to use in antifraud investigations. Analysis can date and identify inks used in documents and letters.

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LEAD IN CERAMIC FOODWARE GUIDELINES REVISED

57 FR 29734-6, July 6, 1992

The Food and Drug Administration (FDA) announced the availability of a revised Compliance Policy Guide (CPG) 7117.07 for lead contamination from ceramic foodware. The revised guidelines add two new foodware categories (cups or mugs and pitchers) and reduce the amount of lead which should leach from ceramics on the standard leach test. The new guidelines are not as strict as those the FDA originally proposed in January 1989, and which were subsequently proposed by California's Health Department. These stricter guidelines and the previous and current levels are summarized in the following chart.

CURRENT & PREVIOUS FDA GUIDELINES FOR MAXIMUM LEAD/CADMIUM RELEASE FROM CERAMIC FOODWARE

Category	LEAD previous	LEAD 1989**	LEAD current	CADMIUM current
Flatware (≤ 25 mm deep)	7 ug/ml*	0.25	3 ug/ml*	0.5 ug/ml*
Small hollowware(<1.1L)	5 "	0.1	2 "	0.5 "
Large hollowware(>1.1L)	2.5 "	0.1	1.0 "	0.25 "
cups or mugs		0.1	0.5 "	0.5 "
pitchers		0.1	0.5 "	0.25 "
cookware	being studied by FDA			

* Ug/ml = micrograms/milliliter = milligrams/liter (mg/L) = parts per million (ppm).

** The 0.1 level was proposed for food service pitchers by FDA Jan. 1, 1989 (54 FR 23485-9). The other values were proposed by the State of California. Both were revised later to the current FDA levels.

The test referred to by these guidelines involves analysis of the amount of lead leached into a 4 % acetic acid solution at 22 ° C over a 24 hour period. The results of the test are only used as guides for possible action. In the FDA's words:

> *The lead release levels assigned to these categories of foodware are not substantive rules. Rather, they constitute guides that FDA will use in its discretion when considering whether the agency will regard the article as adulterated within the meaning of section 402(a)(2)(C) of the [Federal Food, Drug, and Cosmetic Act.] This CPG does not limit the agency's enforcement discretion on whether to initiate regulatory action after an evaluation of all the relevant facts.*
>
> *This notice does not constitute final action on FDA's proposal....to establish a legally binding regulatory limit for lead leaching from ceramic pitchers, nor does it preclude the agency from initiating any new rulemaking on ceramicware. The agency chose to revise CPG 7117.07 on ceramicware to reflect its concerns about the ongoing need to reduce human exposure to lead from foods. The agency is interested in receiving comments on the guidelines in revised CPG 7117.07.*

Written comments should be sent to the Dockets Management Branch (HFA-305), Food and Drug Administration, rm. 1-23, 12420 Parklawn Dr., Rockville, MD 20857. Refer to Docket No. 790-0183.

Single free copies of the CPG may be obtained by writing the Regulations and Industry Activities Branch, Industry Activities Section (HFF-326), Food and Drug Administration, rm. 5425B, 200 C Street, S.W., Washington, DC 20204. Ask for revised CPG 7117.07, "Pottery (Ceramics); Imported and Domestic--Lead Contamination" and enclose two self-addressed adhesive labels.

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PRODUCERS SET GUIDELINES ON THEATRICAL FOG

The Alliance of Motion Picture & Television Producers (AMPTP) has revised its "Safety Bulletin No. 10, Guidelines Regarding the Use of Artificially Created Smokes, Fogs and Lighting Effects." The bulletin was adopted by a unanimous vote of the Industry Wide Labor-Management Safety Committee on June 25, 1992.

Section 1 lists substances which should not be used.

A. Known human carcinogens including any particulates of combustion, including tobacco smoke (except where such smoke results from the smoking of tobacco by an actor in a scene).
B. Fumed and hydrolyzed chlorides.
C. Ethylene glycol and diethylene glycol.
D. Mineral oils.
E. Aliphatic and aromatic hydrocarbons including petroleum distillates.
F. Hexachloroethane and cyclohexylamine.

This eliminates many common products such as "bee smokers," "smoke cookies," Spectra Smoke and other chloride products, several popular ethylene and diethylene glycol fogs, "oil crackers," and several petroleum based fog products.

Section 2 lists substances which may be used.

A. Propylene glycol, butylene glycol, polyethylene glycol, and triethylene glycol. Other glycol products should not be used.
B. Glycerin products.
C. Cryogenic gases (e.g. carbon dioxide, liquid nitrogen) may be used but care must be exercised to avoid depleting oxygen levels, especially in confined areas. Use care also to avoid adverse effects of cooled air on exposed persons.

Other provisions include a "caution" not to heat glycerin and glycol products above the minimum temperature necessary (and in no event higher than 700 ° F), to use the minimum concentrations necessary to achieve the effect, to either exhaust sets periodically or give all personnel and animals a break away from the stage, to make appropriate respirators available on request, to exclude all non-essential personnel, to provide prior notification of the use and type of fog to all personnel, and designate the person responsible for providing respirators.

ACTS has some reservations about some of the terminology, two of the approved chemicals, and the 700 ° F limit on heating glycerine and glycols, but over all the AMPTP should be applauded for taking a stand against some of the more toxic fog chemicals. A copy may be obtained from ACTS. Send a self-addressed stamped envelope.

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FATAL ACCIDENT IN PARIS OPERA TRAVELING COMPANY

New York Times, Arts Section, Thursday, August 13, 1992, p. C17

On July 16, at the Teatro de la Maestranza in Seville, Spain during a Paris Opera piano rehearsal of Verdi's "Otello," a suspended platform that was part of the scenery collapsed. The platform fell on the chorus killing one singer and injuring at least 30 chorus members and technicians, 4 of them seriously.

Officials at the Maestranza reportedly had warned the French production team that the suspended scenery was not safely supported. A judicial inquiry into the accident is under way in Spain and an administrative inquiry had been demanded in Paris by the Minister of Culture. Performances were cancelled and a shake up in the Paris Opera's administration has occurred. Accidents like this remind us of the need to obtain expert technical and engineering advice when designing and building complex sets.

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BEWARE OF BOTH ENDS OF THE BRUSH

Consumer Reports, September 1992, p. 568

Recalled are 332,761 Grumbacher artist's paint brushes sold between January 1990 and January 1992 because their painted handles contain excessive lead. Included are brushes marked CAMEL HAIR KOREA from: set number 1140C Do-it-Yourself Utility Brush set of 5 listing for $ 7.95 (only the red-handled black-bristle brush and the yellow-handled ox-hair brush are recalled); number 1141C Artcraft Hobby and Ceramic Brush set of 3 sold for $ 7.75; countertop display 114D Hobby/Craft Brush Assortment sold for less than $ 1.00 (only No. 2 green, No. 3 blue, No. 4 Yellow, and No. 5 red brushes). Also recalled are various other brushes labeled "M. GRUMBACHER SABLE KOREA, M. GRUMBACHER CAMEL KOREA, AND M. GRUMBACHER OX KOREA."

People having any of these brushes may return them to the store for a refund. ACTS encourages readers to return them even if they personally are not at risk because their habits do not include chewing on brush handles. Like pencils, brushes tend to be used by others, or they may remain in homes or studios years after this recall is forgotten. For more information, call 1-800-346-3278.

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AFT PASSES HEALTH RESOLUTIONS

BNA-OSHR. Vol. 22, No. 12, August 19, 1992, p. 400-1

The American Federation of Teachers (AFT) passed a number health-related resolutions at their 72 biennial convention in August. Representing 796,000 teachers, professors, para-professionals and school-related personnel, nurses and health care professionals, and state and municipal employees, the AFT delegates:

* called for immediate implementation of OSHA's bloodborne disease standard in every school and health facility in the country to protect healthcare workers, students, teachers and others from diseases such as hepatitis B and AIDS;

* urged Congress to pass legislation to give public employees the same legal health and safety rights as guaranteed other workers;

* adopted measures supporting increased funding to the National Institute for Occupational Safety and Health for research and worker training and education;

* endorsed federal indoor air pollution legislation; and

* called for OSHA regulations on an ergonomic standard to cover the hazards posed by computers.

ACTS endorses these actions, but would have like to see the AFT resolve to press school administrators for better compliance with already existing OSHA regulations such as the Right-to-Know laws.

==========

GOOD HAND CLEANER FOR PHOTOGRAPHERS AVAILABLE

"Photosuds™" is a non-alkaline hand cleaner for photographers supplied by Envision Compliance Limited. It has a slightly acid pH of 6.5 and is free of oils to spoil negatives. This acid quality will help restore the skin's pH balance and counteract the effects of strongly alkaline photochemicals.

The major ingredient in Photosuds is sodium lauryl sulfate which is used in tooth pastes and foods. While this editor does not think this chemical is an appropriate food additive, it would be very safe for washing the hands. Like almost all detergents and soaps, it is an irritant and mild allergen. The other ingredients are detergents with similar properties.

The manufacturer's choice of some of the safer detergents, their willingness to both provide a Material Safety Data Sheet and to disclose other ingredients on inquiry, and the soap's slightly acidic properties makes it a product that ACTS can recommend. For further information, U.S. photographers may call 716/382-3256. Canadians may write or call Envision Compliance, Ltd., 150 Clark Boulevard, Unit 132, Bramalea, Ontario, L6T 4Y8. 416/453-2159.

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COURT VOIDS 428 OSHA WORKPLACE AIR QUALITY STANDARDS

On July 7, the U.S. Court of Appeals for the Eleventh Circuit vacated the OSHA 1989 air contaminants standard (see ACTS FACTS, February, 1989) which established new permissible exposure limits (PELs) for 428 chemicals. This standard brought most of OSHA's PELs in line with the more universally accepted American Conference of Governmental Industrial Hygiene's standards (ACGIH TLVs).

The Judge's decision states that 1) OSHA failed to establish that existing PELs present a significant risk of material health impairment or that the new standards eliminate or substantially reduce the risk; 2) OSHA did not meet its burden of establishing that its 428 new PELs were either economically or technologically feasible; and 3) there was insufficient explanation to support an across-the-broad four year delay in implementation of the rule.

If this decision stands, it would mean that the unprotective, 25-year-old PELs will be reinstated. And to change them, OSHA now would be required to make detailed risk assessments and economic impact statements for each chemical. ACTS would rather see the courts reverse this decision, allow the 1989 air quality limit to stand, and let OSHA to continue set PELs by relying heavily on the work of reputable standard setting organizations such as ACGIH as they did in the 1989 rule.

==========

POLYESTER RESIN CURING AGENT STUDIED

BNA-OSHR, Vol. 22, No. 6, July 8, 1992, p. 201

The National Toxicology Program's (NTP) peer review panel accepted a draft technical report on short-term toxicity studies of methyl ethyl ketone peroxide (MEKP). The report notes that MEKP applied to the skin of rats and mice resulted in tissue death, inflammation, and skin lesions (ulcers). Animals with ulcerative skin lesions also showed changes in the spleen and bone marrow.

The skin lesions occurred at doses as low as 1.07 milligrams per kilogram (mg/kg) of body weight for rats and 0.357 mg/kg for mice. This means that MEKP is acutely toxic by skin contact. The skin contact route of entry was chosen because this is the most likely way in which workers casting polyester resins would be exposed. Artists using MEKP curing agents should protect their skin.

==========

OSHA PROPOSES CHANGE IN ACCIDENT REPORTING

57 FR 21222, Tuesday, May 19, 1992

OSHA proposes to revise their accident reporting rules (29 CFR 1904.8). Currently only accidents resulting in one or more fatalities or hospitalizations of five or more employees must be reported within 48 hours. The proposed rule would require reporting of accidents resulting in fatalities or hospitalizations of three or more employees and reporting must be done within 8 hours by telephone or in person rather than in writing as is now allowed.

==========

NEW PEL FOR METHYLENEDIANILINE

57 FR 35630-35696, August 10, 1992

The Occupational Safety and Health Administration has promulgated a new standard for methylenedianiline (MDA). The eight hour permissible exposure limit (PEL) is 0.01 parts per million (ppm) and the 15 minute limit is 0.1 ppm. The standard also has provisions for special protective clothing, use of engineering controls, hazard communication, and recordkeeping.

MDA has been shown to be a carcinogen in both rats and mice. Moreover, the cancers can be induced through ingestion, inhalation, and dermal absorption of the substance. MDA is also extremely toxic to the liver of animals at very low doses.

MDA is used in the production of polyurethane monomer (methylenediphenylisocyanate or MDI), certain adhesives, and dyes and pigments. Artists may be exposed during use of certain epoxy resin systems, foam polyurethane products, and some dyes and pigments.

ACTS recommends that exposure to MDA be eliminated by artists whenever possible. Two-part polyurethane systems, dyes, and pigments, even without MDA, are significantly hazardous to warrant replacement or use in local exhaust ventilation. Epoxy systems containing MDA should be replaced with alternate epoxy systems which employ other hardeners. (Other epoxy chemicals which should not be used include 2-nitropropane and 4-vinyl-1-cyclohexane diepoxide. Epoxy system chemicals which should be avoided when possible are the glycidyl ethers and glycol ethers.)

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GLUE MAKER'S LEUKEMIA COMPENSATED

BNA-OSHR, Vol. 21, No. 43, April 1, 1992, p. 1465

An Illinois appeals court unanimously upheld an award of worker's compensation plus nearly $ 13,000 in medical expenses to a former glue maker who alleged that his occupational exposure to benzene caused leukemia (*Service Adhesive Co. v. Industrial Commissions [Hayward Rorie, claimant]*, Ill AppCt 1stDist IndComDiv, No. 1-91-0656WC, 2/28/92). According to the opinion, the worker made glue by hand-mixing various chemicals including benzene, ammonia, and formaldehyde. The work was done from 1979 to 1981 in a poorly ventilated room, using cotton gloves, and no respirator. In 1981 the worker was diagnosed with acute myelocytic leukemia, which is now in remission.

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ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

October, 1992
Vol. 6, No. 10

ACTS FACTS SOURCES

ACTS FACTS primary source is the Federal Register (FR), a compilation of all the regulations and public notices issued by all federal agencies. Other sources are the Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR), the Centers for Disease Control (CDC), HAZCHEM Alert, and many art & theater publications.

FINAL CADMIUM STANDARD PUBLISHED

57 FR 42101-42463, September 14, 1992

The Occupational Safety and Health Administration (OSHA) published its final rule on cadmium. To protect workers from kidney damage and cancer, all cadmium compounds, including cadmium pigments, now are regulated at 0.05 milligrams per cubic meter (mg/m^3).

The Dry Color Manufacturer's Association (DCMA) tried hard to convince OSHA to separate insoluble pigments such as cadmium sulfide (CdS) from the rule. DCMA argued that insoluble compounds are not biologically available and are not as toxic as soluble ones. OSHA refutes DCMA's position. Some reasons paraphrased from material in the standard's supplement include:

- Once in the body, insoluble compounds actually may be retained longer. This is especially true in the lungs where no dust should be considered insoluble. Cadmium dust is expected to be considerably more carcinogenic in human than in animal lungs. Cadmium may be a site-of-contact carcinogen. If so, the more insoluble the compound, longer it remains, and the more carcinogenic it is.

- Some long-term studies (18 months or more) showed greater accumulation of cadmium in animals exposed to insoluble cadmium compounds than in animals exposed to soluble ones. Theoretically the more soluble forms leave the body more quickly.

- The body can muster formidable chemistry against a foreign material and may solubilize CdS by many mechanisms which are not represented by acid and serum solubility tests. Factors other than solubility influence the systemic absorption and bioavailability of cadmium pigments.

- All cadmium pigments are actually mixtures of soluble and insoluble cadmium compounds. Even pure CdS will convert to soluble cadmium sulfate ($CdSO_4$) in the presence of light.

One study which OSHA discounts is that of the Arts, Crafts and Materials Institute's (ACMI) toxicologist, Woodhall Stopford. This study shows good correlation between the solubility of compounds in weak acid and serum extractions, and a positive relationship to body burdens in animals after ingestion. But OSHA noted (quote):

> ...that this feeding study lasted only one week. While the percent of cadmium absorbed from the pigments after one week's exposure is relatively low compared to $CdCl_2$ [a soluble cadmium compound], the total percentage absorbed after chronic exposure to cadmium pigments (e.g. 18 months) is not known and may be more substantial.

These same solubility tests are used by the ACMI to determine when cadmium paints and other materials containing toxic substances must carry warning labels. Currently ACMI labels cadmium paints with a warning not to spray or airbrush to preclude inhalation, but they do not require a cancer warning if the cadmium pigments are not soluble. Perhaps, this policy should be reconsidered.

The cadmium standard affects manufacturers of some art products such as paints, inks, glass, glazes, or enamels, and employed artists who solder, tin, braze, or weld with cadmium-containing metals. If cadmium is used more than 30 days per year, employers must do air sampling. If sampling shows exposures above the action level (0.025 mg/m^3), a formal program must be written which details how each of the standards many provisions will be met.

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LATEX ALLERGIES: AN UPDATE

FDA Consumer, September 1992, pp. 16-21

The Food and Drug Administration (FDA) published another article on latex allergy to follow up last year's article (ACTS FACTS October 1991 Vol 5 No. 10). In it, the FDA traces the history of latex allergies starting with about 50 reports in European medical literature from 1979 to 1988. Then in the fall of 1989, FDA began receiving reports of patients going into anaphylactic shock during radiologic examinations for lower gastrointestinal tract disorders from latex-cuffed enema tips. Sixteen of these patients died.

Next a Milwaukee hospital reported that from March 1990 to January 1991 nine children had anaphylactic reactions from latex anesthesia equipment and intravenous catheters. A subsequent survey of children's hospitals nationwide has turned up a total to 75 children who had similar reactions.

More common reactions to latex such as rashes, itching, hives, swelling, and red and burning eyes, are seen among health personnel. Estimates of latex sensitivity rates are adjacent. They show that the greater the exposure, the more likely people are to react. The FDA article surmises that latex allergy is relatively new and may be related to increased wearing of gloves as a precaution against the AIDS virus and other diseases. However, latex has been in wide use for 50 years and it is more likely to this editor that latex allergy was routinely misdiagnosed.

LATEX SENSITIVITY RATES	
Dentists	13.7 %
Operating room doctors	7.5 %
Operating room nurses	5.6 %
Other hospital employees	1.3 %
The general population	0.8 %

Latex gloves and condoms are still the best thin barrier for body fluids. They cannot be replaced with vinyl gloves, which lose their barrier effectiveness within 15 minute after they are put on, or with latex-free substitutes until the FDA can test them. Attempts also are being made to identify which of the dozen or more latex proteins cause the reactions and to find methods of removing them.

The FDA counsels people with severe allergies to carry an emergency epinephrine kit and wear a Medic Alert bracelet because latex can be encountered unexpectedly in products such as carpet backing, balls and other toys, underwear bands, and many products. Artists use rubber mold materials, rubber cement, some types of hard and kneadable erasers, rubber stamps, gloves, aprons, face masks, etc.

==========

NIOSH FOG REPORT MAY CONTAIN BOO-BOO

Correspondence with NIOSH, Cincinnati

An "apparent inconsistency" in the sampling data in Interim Report No. HETA 90-355 on theatrical fog was pointed out by Rosco Laboratories. It caused NIOSH to reinvestigate the analysis of glycols in the samples taken on stage. In particular dispute is the reported presence of ethylene glycol in samples from Les Miserables when the bulk fluid did not contain this chemical. NIOSH plans to do further laboratory tests to more clearly identify the problem(s) in the sample analyses. At this time, NIOSH investigators consider the glycol air-sampling results to be "suspect." Data reported for the other compounds, such as oil mist, acrolein, and formaldehyde are unchanged by these findings as are the symptoms reported by the casts. ACTS will keep readers abreast of any new developments.

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STAINED GLASS EXEMPTED FROM LEAD EXPOSURE REDUCTION ACT

Crafts Report, Sept., 1991, p. 15--ACTS EDITORIAL

Glass artists, glass business owners, their clients and customers, and religious groups all combined their efforts in a letter-writing campaign which resulted in an exemption for stained glass from House Bill 3554 and Senate Bill 391 which are referred to as "The Lead Exposure Reduction Act of 1992."

While ACTS applauds the stained glass industry for organizing and telling legislators about the special needs of stained glass artists, we ask the them to remember what they did not tell the legislators about the industry. They did not tell them that the largest volume of lead (solder/came) is not sold to artists, but to hobbyists to use at home in basements, kitchens, or other rooms where whole families are exposed to lead. Most hobbyists do not recycle or use lead safely. And consumer ignorance is encouraged by some suppliers in their promotional material and by craft books and articles which mislead, misinform, and make light of safety.[1]

The stained glass lobby also did not tell legislators that professional studios rarely comply with occupational health and safety regulations or use proper safety equipment. This editor only knows of one stained glass studio that is in OSHA compliance. My observation is confirmed by John S. Pindelski, a sales representative for a major solder supplier.[2] He noted, "The respirators and exhaust hoods you see advertised....are no doubt very effective in removing a great deal of lead dust and filtering from the air. [But] I have only seen one shop that actually uses th[ese] measures."

If the truth about flaunting OSHA regulations and about the large volume of lead sold to uninformed consumers were known, backlash from legislators would be considerable. I implore the stained glass industry to use this reprieve from further regulation to begin obeying the laws that already apply to them. Editor

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1. ACTS has a large collection of books and articles supporting this contention.
2. A transcribed CompuServ bulletin board conversation to be published in Professional Stained Glass.

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POTTERS ORGANIZE TO OVERTURN TABLEWARE RULE

The Crafts Report. September 1992. p. 14

Various ceramic groups are planning to overturn the California Tableware Safety Law. This law applies to all ceramic distributors, retailers, importers, manufacturers, or to anyone who makes items used with food which contain lead or cadmium. Include are lead-based glazes, enamels, pewter, soldered items, and other metal products. Businesses or individuals making such ware must register with the California Health Department, pay a fee ($ 150 if gross sales are under $30,000, or $500 if above), sign or mark (registered trade mark) the ware, and allow the Health Department to perform lead and cadmium field tests on the products.

Potters making ware that exceeds FDA lead/cadmium release limits (see ACTS FACTS, Aug, 1992) can be fined and their ware seized and destroyed. Subsequent violations may result in imprisonment and/or more fines. To protect themselves, potters must test their ware. The cost can be as little as $ 30 or less for commercial field kits or hundreds of dollars for more accurate laboratory tests.

Pottery groups claim that the registration fee is excessive for small operators and that they are unable to pay for their own testing in addition. ACTS sympathizes with potters' concern about the fee, but the cost of testing should have been part of doing business for years. No matter how carefully lead glazes are made, mixed, or fired, improper lead release can occur. Ceramicists need regular testing programs to protect their customers.

ACTS applauds the California Department of Health Services for once again leading the country in consumer protection. ACTS hopes that when the potters organize, they will lobby for cheaper testing and more lead-free glazes, but will leave the law alone.

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HOUSEHOLD AIR CLEANERS EVALUATED

Consumer Reports. October 1992. pp. 657-662

An evaluation of various types of machines to reduce indoor air pollution in homes was done by *Consumer Reports*. Advantages and disadvantages of each type are detailed. Toxic ozone which is given off by some units is discussed and all ozone generators (negative ion generators) are found unacceptable. ACTS recommends the article for anyone planning such purchases and for those who want to understand how electrostatic precipitators and filter systems work. For $ 1.00 and a SASE, ACTS will send you a copy.

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ARTS, CRAFTS AND THEATER SAFETY

UNDERSTANDING THE MSDS

The following can be used to interpret step-by-step the information found on the average MSDS. The information may be in a different order on a specific MSDS, but each subject listed here should be covered if the MSDS is legally complete. Workers should also remember that blank spaces are not permitted. If items are not applicable, or no information is available, the company writing the MSDS must mark the space to indicate this.

SECTION I

IDENTITY OF THE PRODUCT. The identifying chemical name or product name should be the same as that on the container label.

EMERGENCY TELEPHONE NUMBER. Must be included, but it does not need to be toll-free.

TELEPHONE NUMBER FOR INFORMATION. May be the same as above for small companies.

NAME OF THE MANUFACTURER OR IMPORTER. Be sure that this name is exactly the same as the name of the manufacturer listed on the product label. Small manufacturers sometimes send out MSDS from the manufacturer of the raw materials they mixed to make the product or that they repackaged. This is improper.

ADDRESS OF THE MANUFACTURER. Be sure this address is complete: street or box, town, state, zip.

DATE PREPARED. MSDSs prepared more than three years ago are acceptable in the U.S., but an attempt should be made to get an updated version. Three year old MSDSs are invalid in Canada.

SIGNATURE OF THE PREPARER (OPTIONAL).

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

SPECIFIC CHEMICAL NAME/IDENTITY. Should be as listed above.

COMMON NAME(S) and synonyms.

CAS # (CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER, OPTIONAL) good MSDSs will provide this optional number. It is required label information under the NJS Right-to-Know law.

CHEMICALS IN PRODUCTS WHICH ARE MIXTURES. It used to be common for MSDSs to list only ingredients which had TLVs or PELs. Now any chemical for which there is even one study which shows it may be capable of causing harm should be listed. Toxic chemicals comprising more than 1 % of the product by weight must be listed. Cancer-causing chemicals which comprise 0.1 % of the product must be listed.

If use of amounts even smaller than the required 1.0 or 0.1 % is known to be hazardous, the manufacturer also must list them. In practice, however, such hazardous ingredients often go unlisted. For example, trace amounts of extremely toxic dioxins and PCBs in many pigments usually are not reported. Another example was seen recently when interior paint containing a mercury preservative off-gassed from walls and poisoned a young child and his family. Investigation revealed that it was common practice not to list mercury preservatives on MSDSs because they are present in amounts under 1 %.

TRADE SECRET EXEMPTIONS. Information on the identity of hazardous ingredients can be withheld by the manufacturer if they are trade secrets or proprietary. The MSDS should state by whose authority (usually the state health department) the product's identity can be withheld. Trade secret products should be avoided whenever possible since it is very difficult and time-consuming for medical personnel to get this data if there is an accident or illness. Even then, the medical person must withhold from the victim the name of the chemical that caused his/her problem.

OSHA PEL. Here the eight hour time weighted average (PEL-TWA) should be listed. The PEL-TWA is the amount of the substance in the air to which most healthy adult workers may be exposed each work day day after day without adverse effect. In general, the smaller the PEL, the more toxic the substance although other factors such as evaporation rate should be considered. PELs are enforced by OSHA.

ACGIH TLV. Here the eight hour time weighted average (TLV-TWA) should be listed. TLV-TWAs are standards for workplace air quality developed by the American Conference of Governmental Industrial Hygienists (ACGIH). In general, the smaller the TLV, the more toxic the substance although other factors such as evaporation rate should be considered. TLVs are standards and are not enforced by OSHA.

OTHER LIMITS (OPTIONAL). NIOSH RELs (Recommended Exposure Limits), MRLs (manufacturer's recommended limits), MAKs (Federal Republic of Germany Maximum Concentration Values in the Workplace), and others may be listed here.

181 THOMPSON STREET #23, NEW YORK, NY 10012 212 / 777 • 0062

ODOR THRESHOLD (OPTIONAL). The odor threshold (OT) is required on Canadian MSDSs and is sometimes included by U.S. manufacturers who sell to both countries. OTs are very useful. They are the concentrations in air at which most people can smell the chemicals. If the OT is smaller than the TLV, then the chemical provides warning before health effects are expected. If the OT is larger than the TLV, one is already at risk by the time the odor can be detected.

PERCENT (OPTIONAL). If the percentages are listed, check to see if they add up to 100 %. Check to see if toxic substances are a small or large proportion of the product.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

This section provides a physical profile of the chemical through its various characteristics. Some physical data may be omitted on the MSDSs when it is not applicable. For example, some chemicals have no boiling point because they do not boil. However, this same chemical may dissociate (break down) with heat, and this fact and the chemicals into which it dissociates should appear on a good MSDS. If data does not exist, the line on the MSDS where it ordinarily would appear must be filled in to indicate this. Blank spaces are not proper.

BOILING POINT (BP). The BP is the temperature at which the substance changes rapidly, usually with bubbling, from a liquid to a vapor. Sometimes called the "vaporization point," liquids with low BPs usually expose workers to large amounts of the vapor. If the vapor is also flammable, liquids with low BPs are also fire hazards. A common error is the assumption that no vapor is formed (e.g. from metals) until the BP is reached. However, vapor is formed at far lower temperatures, just as water which boils at 212 °F evaporates at room temperature.

VAPOR PRESSURE (mm Hg). VP is the pressure exerted by a saturated vapor above its own liquid in a closed container. VPs combined with evaporation rates are useful in determining how quickly a material becomes airborne, and thus how quickly a worker is exposed to it. They are usually reported in millimeters of mercury (mm Hg) at 68 ° F (20 ° C) unless otherwise stated. Substances with VPs above 20 mm Hg may present a hazard due to their extreme volatility.

VAPOR DENSITY (AIR = 1). VD is the weight of a vapor or gas compared to an equal volume of air. Materials with a VD less than 1.0 are lighter than air. Materials with a VD greater than 1.0 are heavier than air. While all vapors and gases will mix with air and disperse, large quantities of unmixed vapor or gas in locations without much air movement such as storage rooms will tend to rise or sink depending on their VD. Flammable vapors that are heavier than air can spread to sources of ignition and flash back to the source.

SOLUBILITY IN WATER. This term represents the amount by weight that will dissolve in water at ambient temperature. Solubility is important in determining suitable clean up and extinguishing methods. Solubility is usually reported in grams per liter (g/l) or general categories such as:

negligible or insoluble	= < 0.1 percent
slight	= 0.1 - 1.0 percent
moderate	= 1 - 10 percent
appreciable	= > 10 percent
complete	= soluble in all proportions

APPEARANCE AND ODOR. Comparing this description to the actual product is a way to be sure the right MSDSs has been obtained.

SPECIFIC GRAVITY (SG). The SG describes the heaviness of a material compared to a reference substance. When the reference substance is water (H_20 = 1), it indicates whether it will float or sink in water. SG for solids and liquids compared to water numerically equals density (see above). SG for gases does not equal density because the density of air is not 1.0, but 1.29.

MELTING POINT. This is only applicable to solid materials. The MP is the temperature at which a solid changes to a liquid.

EVAPORATION RATE. This is the rate at which a material will vaporize (volatilize, evaporate) from the liquid or solid state when compared to another material. The two common liquids used for comparison are butyl acetate and ethyl ether.

WHEN BUTYL ACETATE = 1.0	WHEN ETHYL ETHER = 1.0
> 3.0 = FAST	< 3.0 = FAST
0.8 - 3.0 = MEDIUM	3.0 - 9.0 = MEDIUM
< 0.8 = SLOW	> 9.0 = SLOW

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT. The lowest temperature at which a flammable liquid gives off sufficient vapor to form an ignitable mixture with air near its surface or within a vessel. Combustion does not continue. The METHOD USED should also be designated here. There are various tests for determining flash point and these should also be designated here for accuracy. The four test methods recognized by the National Fire Protection Association are: Tag Open Cup test, Tag Closed-Cup test, Cleveland Open Cup, and Pensky-Martens closed cup.

FLAMMABLE LIMITS. Only applicable to flammable liquids and gases, these are the minimum and maximum concentrations in air between which ignition can occur. Concentrations below the lower flammable limit (LFL) are too lean to burn, while concentrations above the upper flammable limit (UFL) are too rich. All concentrations in between can burn or explode. (Sometimes called lower and upper explosion limits--LEL and UEL.)

EXTINGUISHING MEDIA. The type of extinguisher or suppression system needed to put out a fire involving the substance.

SPECIAL FIRE FIGHTING PROCEDURES. Lists any special methods needed to fight fires involving the substance. Peroxides like those used to cure polyester resins, for example, supply oxygen when burned and cannot be extinguished by ordinary methods that smother or cut off air.

UNUSUAL FIRE AND EXPLOSION HAZARD. Unusual hazards such as those of some organic peroxides that ignite spontaneously under certain conditions or that become explosive when old.

SECTION V - REACTIVITY DATA

This section must be completely understood before doing any kind of experimenting with the material. Theater craftspeople also should be aware that the manufacturer usually has no liability for damages cause when their products not used as directed.

STABILITY: STABLE OR UNSTABLE. Stability is the ability of the material to remain unchanged under reasonable conditions of storage and use.

CONDITIONS TO AVOID. Conditions which will render a material more unstable. For example, storage at above normal temperatures causes some materials to change rapidly.

INCOMPATIBILITY. Here the MSDS should list substances which will react dangerously with the product. Workers should also use this to determine which substances also should not be stored in proximity to the product.

HAZARDOUS DECOMPOSITION PRODUCTS. This section should list any hazardous chemicals given off when the product burns or when it degrades or decomposes without burning. However, manufacturers often only report the results of high temperature incineration with all the oxygen necessary for complete combustion. Under these conditions, most organic chemicals will give off carbon dioxide, water, and a few other low molecular weight chemicals. Actual burning in open air, heating with torches, hot wire cutting, or other methods of rapid decomposition usually will product very different results. Workers should be aware that this section may not be relevant to the way in which the product is actually burned or decomposed.

HAZARDOUS POLYMERIZATION. Polymerization is the process by which the molecules of a chemical can combine to form larger molecules. Examples include the setting up of epoxy or polyester resins. Polymerization is hazardous if during the reaction excessive heat, gases, or some other byproduct is given off in amounts sufficient to cause fires, burst containers, or cause some other kind of harm.

CONDITIONS TO AVOID. Here should be listed conditions such as high temperatures which must be avoided to prevent hazardous polymerization from occurring.

SECTION VI - HEALTH HAZARD DATA

ROUTES OF ENTRY are the ways chemicals can enter the body.

INHALATION is the most common route. For example, vapors or dusts can be inhaled and absorbed by the body.

SKIN. If this route is checked, the material can be absorbed by the skin in significant amounts. Often it is also checked if it only damages the skin itself. Good MSDSs clarify whether skin damage and/or absorption can occur.

INGESTION. If this route is checked, the material can be eaten, drunk, or swallowed, or inhaled particles can be expelled from the lungs and swallowed.

HEALTH HAZARDS, ACUTE AND CHRONIC. This section usually varies greatly in quality. Some manufacturers supply detailed data on both chronic and acute health effects. Others provide very little. Workers should not consider this section sufficient and should supplement it from additional references.

ACUTE. Information about short term exposure hazards belong here. Many MSDSs report OSHA and ACGIH short term exposure limits (STELs) and Ceiling limits (CLs) here. The OSHA PEL-STEL and the ACGIH TLV-STEL usually are for 15 minute exposures, while the Ceiling limits (PEL-C and TLV-C) are instantaneous limits and not to be exceeded at any time.

Other data commonly found here are LD_{50}s and LC_{50}s. The LC_{50} is the concentration in the air that will kill 50 % of the test animals when administered in a single exposure in a specific time period, usually 1 hour. LD_{50} it the single dose that will kill 50 % of the test animals by any route other than inhalation such as by ingestion or skin contact. These tests establish the degree to which a chemical is acutely hazardous and determine if it will be designated "non-toxic," "toxic," or "highly toxic" (see table below).

LABEL DEFINITIONS OF TOXICITY IN THE U.S. AND CANADA

label term	LD_{50}	LC_{50}
Nontoxic	> 5.0 g/kg*	>20,000 ppm**
toxic	0.05-5.0 "	200-20,000 "
highly toxic	< 0.05 "	< 200 "

* grams per kilogram of body weight.

** part per million: part of substance in 1 million parts of air.

As defined by the Federal Hazardous Substances Act (FHSA) in the U.S., and the Federal Hazardous Products Act in Canada, "non-toxic" means anything that passes the LD_{50} and LC_{50} animal tests. Workers need to know that long term damage such as cancer and birth defects are not detected by these tests. Since these tests reflect only acute hazards, powdered asbestos can legitimately be called "non-toxic" under these rules. In fact, even asbestos is "non-toxic" because it wont harm any animals in two weeks (the duration of the tests).

This is one reason that the FHSA has been amended to provide chronic hazard labeling for consumer product art materials. (This definition has now been extended to all U.S. consumer products, but as yet there is little or no compliance.) Art material labels must identify any known chronic hazards associated with the product. Unfortunately, ingredients that have never been studied, for which there is no data, can still be labeled "non-toxic" even if it is related to known toxic substances.

CHRONIC. This section should report any known chronic hazards such as cancer, reproductive or developmental damage, neurological or other organ damage to animals or humans related to repeated or long term exposure. Unfortunately, a great number of the chemicals used in paints, dyes, and other theater materials have never been studied for long term hazards. Failure to see data in this section should not be taken to mean that the material has no chronic hazards.

CARCINOGENICITY. There are three agencies whose opinions regarding carcinogenicity must be reported on MSDSs. These are:

* NTP (the National Toxicology Program);
* IARC (the International Agency for Research on Cancer); and
* OSHA.

The cancer ratings assigned by each agency are as follows:

AGENCY CATEGORY AND EXPLANATION

IARC: 1--Carcinogenic to humans: sufficient evidence of carcinogenicity.
2A-Probably carcinogenic to humans; limited human evidence; sufficient evidence in experimental animals.
2B-Possibly carcinogenic to humans; limited human evidence in the absence of sufficient evidence in experimental animals.
3--Not classifiable as to carcinogenicity to humans.
4--Probably not carcinogenic to humans.

AGENCY CATEGORY AND EXPLANATION continued

NTP: 1--Known to be carcinogenic, with evidence from human studies

2--Reasonably anticipated to be a carcinogen, with limited evidence in humans or sufficient evidence in experimental animals.

OSHA: X--Carcinogen defined with no further categorization.

Some MSDSs will state cancer data in words rather than simply listing categories. This practice should be suspect if statements are made such as "this chemical is not considered to be a carcinogen by NTP, IARC, or OSHA." This wording makes it appear that the chemical has been evaluated by these agencies and found safe. Unless the chemical has an IARC 4 rating, it is far more likely that the agencies have never evaluated the chemical because there is insufficient or no cancer data.

SIGNS AND SYMPTOMS OF EXPOSURE. These are usually acute or subacute manifestations of the chemical, since chronic exposure often produces no clear symptoms for years. If chronic symptoms are given they usually are identified as such.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE. Here the MSDS should list medical conditions which are known or suspected to be exacerbated by the chemical. For example, chemicals which are respiratory irritants may aggravate chronic lung conditions such as asthma or emphysema.

EMERGENCY AND FIRST AID PROCEDURES should be listed here.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED. The MSDS should list preferred methods for spill control (e.g. chemical sorbants, Fuller's earth, etc.) and protective equip-ment (respirators, gloves, emergency ventilation, etc.) needed to keep workers safe during clean up of large spills or accidents.

WASTE DISPOSAL METHOD. Unless the material can be rendered completely innocuous, the MSDSs can only tell users to dispose of the material in accordance with local, state, and federal regulations. Disposal has become an extraordinarily complex problem and cannot be addressed in a few lines on an MSDS. It is likely that substances which pose severe environmental threats or whose release (spills) must be reported to the EPA will soon have to be identified here. Some manufacturers have already begun including this information.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING. Here the MSDS should list safe storage conditions (e.g. cool, dry area).

OTHER PRECAUTIONS, if needed, should include any special equipment that would be needed or which is required to be in a storage area with the material.

SECTION VIII - CONTROL MEASURES

This section should provide information about protective equipment needed under normal use of the product. The manufacturer decides what constitutes this "normal use." If there is any doubt about what is normal, or if any unusual or experimental use is contemplated, the employer should contact the manufacturer first about additional protection. Manufacturers are usually not liable for damages if their products are used other than directed. For this reason, questions about the hazards of using the product in unusual circumstances should be answered in writing by the manufacturer or an industrial hygienist.

RESPIRATORY PROTECTION (SPECIFIC TYPE). If needed during normal use, a good MSDS explains precisely what type of respirator is proper. Even the type of cartridge type for air-purifying respirators should be specified.

VENTILATION. If needed during normal use, a good MSDS specifies the type of ventilation system that provides proper protection. This includes recommendations about the use of general (mechanical) ventilation, local exhaust (which captures the contaminants at their source), or any special ventilation system which might be needed.

PROTECTIVE GLOVES. Good MSDSs list the specific type of glove material needed (rubber, nitrile, etc.) and other glove attributes such as length and thickness. Workers should know that some solvents penetrate gloves without changing the glove's appearance. Often such solvents are perceived only as perspiration. Good MSDSs indicate which gloves will resist penetration by the product. When in doubt, contact the technical department of your glove supplier.

EYE PROTECTION. Good MSDSs list precisely what type of goggles or glasses are needed by their ANSI Z87.1 standard classification. The MSDS at least should indicate whether vented or unvented chemicals splash goggles, impact goggles, or other specific types are needed.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT, such as aprons, boots, face shields, or eye wash stations should be listed here if needed.

WORK/HYGIENIC PRACTICES. Practices such as proper daily clean up methods and equipment after normal use should be detailed here.

ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

November, 1992
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ACTS FACTS SOURCES

ACTS FACTS' primary source is the Federal Register (FR), a compilation of all the regulations and public notices issued by all federal agencies. Other sources are the Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR), the Centers for Disease Control (CDC), HAZCHEM Alert, and many art & theater publications.

REVISED NIOSH FOG REPORT AVAILABLE

Correspondence with NIOSH, Cincinnati

An error in air sampling data in the National Institutes for Occupational Safety and Health (NIOSH) Interim Report on health effects of theatrical fog was covered in last month's ACTS FACTS. Now this report has been revised. The new version is almost identical except that all sections pertaining to the sampling and analysis of glycols are highlighted, suspect data in the charts are crossed out, and the glycol analytical method's shortcomings are noted. Development of a new method for analyzing glycols is underway by NIOSH researchers. Other data on symptoms of exposure and analysis of other compounds, such as oil mist, acrolein, and formaldehyde is correct and unchanged. A copy of the **Revised** Interim Report No. HETA 90-355 is available from NIOSH, 4676 Columbia Parkway, Cincinnati OH 45226-1998.

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MISCARRIAGES AGAIN TIED TO SOLVENTS

New York Times, Metro, Monday, October 12, 1992, pp. A1, D2

I.B.M. warned its workers and other manufacturers that two solvents widely used in making semiconductor chips may significantly increase the risk of miscarriage. I.B.M. acted after a study it commissioned by health researchers at Johns Hopkins University showed that 10 of 30 pregnant women workers had miscarriages--a 33.3% rate. IBM workers who were not exposed (398 pregnant women) to the solvent had a 15.6 percent rate (62 miscarriages).

Implicated as the cause were 1) ethylene glycol ethyl ether acetate and 2) diethylene glycol dimethyl ether. The first is a glycol ether acetate which is known to be a skin-absorbing reproductive hazard with a Threshold Limit Value (TLV) of 5 parts per million (ppm). The second chemical related to the glycol ethers, has no TLV, but demonstrates birth defects and reproductive harm in animals. Now those same effects have been seen in humans.

ACTS believes employers should not expose pregnant women to chemicals which are either known or suspected reproductive toxicants such as the glycol ethers--even if OSHA rules allow it. The glycol ethers are also used in many art, theater, and consumer products. Women and the unborn deserve better protection from manufacturers.

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LEAD GLAZE INGESTION CASES DISCUSSED

MMWR, Centers for Disease Control, Vol. 41, No. 42, October 23, 1991, pp. 781-3

The Centers for Disease Control (CDC) reported that in August 1992, a physician notified the Alaska Division of Public Health (ADPH) that three patients at a psychiatric hospital had consumed ceramic glaze during ceramic recreation therapy. Two of these patients developed elevated blood lead levels. The third patient had consumed a lead-free glaze.

At the time of these episodes, two large facilities in Alaska offered ceramic programs using lead-based glazes. Approximately 1400 patients participated. In addition, four nursing homes had used lead glazes. Following these ingestions, the ADPH requested that psychiatric facilities and nursing homes discontinue use of lead-based glaze in ceramic therapy.

The CDC also reported that in 1991, the American Association of Poison Control Centers received reports of 318 incidents of ceramic glaze ingestion in the U.S. of which nine (2.8 %) were intentional, 307 (96.5 %) were unintentional, and two (0.6%) were of unknown intent. From 1984 to 1990, the Fresno County (California) Regional Poison Control Center received reports of 75 persons who ingested lead-based ceramic glaze. Of these, 34 occurred in extended-care facilities and for 32 persons, impaired mental status was known before ingestion. Nursing home patients who developed lead poisoning after ingestion include one person in Maryland and four persons in Pennsylvania, one of whom died of lead encephalopathy. In 1988, following a series of lead poisonings among patients, Arizona banned the use of lead-based glaze in nursing homes.

Also discussed was the Arts and Crafts Materials Institute (ACMI) labeling program and their recommendation that only "lead-free" glazes be used in institutions where supervision is required (e.g. elementary schools, hospitals, nursing homes, and psychiatric institutions). Labeling such as "safe for food containers" or "food safe" indicates that lead from correctly fired pottery will not leach lead into food, but the unfired glaze may contain lead that can be absorbed if ingested. ACTS would also like to see special labeling for glazes from which even small amounts of lithium could be absorbed for the protection of patients and consumers who take lithium carbonate as a drug.

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SUPREME COURT VOIDS MANY STATE WORKER PROTECTION LAWS

Gade v. National Solid Wastes Management Association, US SupCt, No. 90-1676, 6/18/92

A U.S. Supreme Court decision apparently strikes down all state Right-to-Know and other worker protection laws except those which are part of a plan approved by the U.S. Secretary of Labor. Only federal OSHA-approved state laws will stand. This ruling would make more uniformity in the laws, but some very fine experiments in better regulation such as those of New Jersey's Public Employee's OSHA rules are probably defunct.

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CPSC ISSUES FINAL ART MATERIAL RULES AND GUIDELINES

57 FR 46626-46674, October 9, 1992

On October 9, the Consumer Product Safety Commission (CPSC) finalized the following three long-awaited art material rule actions.

1. Final codification of ASTM D-4236. When the Labeling of Hazardous Art Materials Act (LHAMA) was passed in November, 1988, the voluntary American Society of Testing and Materials (ASTM) chronic toxicity labeling standard (D-4236) was made mandatory under the Federal Hazardous Substances Act (FHSA). Now, a few editorial changes were made in ASTM D-4236 to make it more consistent with the Code of Federal Regulations and to make the CPSC's interpretation of the standard more understandable.

2. Final non-mandatory guidelines for determining chronic toxicity as requires by LHAMA. These guidelines specify conditions under which an art material would be considered to contain a carcinogen, neurotoxin, or a developmental or reproductive toxicant. The CPSC believes that the guidelines are applicable to all consumer products, not just art materials. However, the rules for art materials are very different from those for general consumer products:

Art product manufacturers and repackagers must 1) submit their products formulations to a toxicologist, 2) supply the CPSC with their criteria for determining chronic toxicity, and 3) provide the CPSC with a list of their materials requiring chronic hazard labeling. The criteria used to determine chronic toxicity can differ from the CPSC's non-mandatory guidelines, but they must be acceptable to the CPSC.

Non-art material manufacturers and repackagers also are supposed to label chronically toxic products, but they are not required to 1) submit their formulas to a toxicologist, 2) supply criteria for determining chronic toxicity to the CPSC, or 3) prepare a list of chronically toxic products.

The CPSC says that all consumer products now must be appropriately labeled or the CPSC can bring enforcement actions against each misbranded product. However, since manufacturers do not readily provide ingredient information, how can a misbranded non-art product be identified? Certainly not through the development of chronic diseases in users. Cancer and birth defects are almost impossible to attribute to a specific exposure.

ACTS believes that some manufacturers of obviously toxic products which already carry acute warnings will add chronic warnings to their labels if needed. But without enforcement, consumers should not rely on chronic hazard labeling of non-art consumer products.

3. A final rule to supplement the current FHSA definition of "toxic." The old FHSA definition specifies short-term (two-week) acute animal tests (LD_{50} and LC_{50}). ACTS often points out that this definition allows asbestos to be labeled "non-toxic" because it doesn't harm animals in two weeks. The new definition reads:

1500.3(c)(2)(ii) *Chronic toxicity.* A substance is toxic because it presents a chronic hazard if it falls into one of the following categories.

(A) *For Carcinogens.* A substance is toxic if it is or contains a known or probable human carcinogen.

(B) *For Neurotoxicological Toxicants.* A substance is toxic if it is or contains a known or probable human neurotoxic.

(C) *For Developmental or Reproductive Toxicants.* A substance is toxic if it is or contains a known or probable human developmental or reproductive toxicant.

The CPSC says that these categories are not inclusive. We can expect to see (D), (E), and many more letters of the alphabet as guidelines are developed for other chronic toxicants of the kidneys, lungs, liver, immune systems, and other organs.

Readers should also keep in mind that chemicals which have never been tested for chronic toxicity--even chemicals which are related to known chronic toxicants--can still be labeled "non-toxic." This covers many art materials ingredients as well as most of the organic chemical dyes and pigments used by artists.

THE GUIDELINES. The guidelines for the three chronic toxicities are drawn from the work of many other agencies and are basically grounded in good toxicology and risk assessment. The problem, however, is that the CPSC doesn't keep a clear vision of who they are protecting. On one hand, they wisely decided that risks to children should be considered for all art materials because so many hobbyists and professional artists work at home.

On the other hand, CPSC says "it is possible that a product could require a warning in the workplace, but not require a label when sold as a consumer product. Occupational exposures are typically greater than consumer exposures..." ACTS asserts that artists working at home typically have greater than occupational exposures. They often work longer hours, use materials more intimately, and contaminate their home's eating, hygiene, and sleeping areas which can result in continuous exposure day and night for both artists and their families.

IN SUMMARY, the final rules have been a long time in coming, they are a great improvement, but there is a very long way to go.

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ACTS

ARTS, CRAFTS AND THEATER SAFETY

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ACTS FACTS SOURCES

ACTS FACTS' primary source is the Federal Register (FR), a compilation of all the regulations and public notices issued by all federal agencies. Other sources are the Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR), the Centers for Disease Control (CDC), HAZCHEM Alert, and many art & theater publications.

CPSC ISSUES ART SAFETY ALERT

A Consumer Product Safety Alert received last month states: "The U.S. Consumer Product Safety Commission (CPSC) and the Art and Craft Materials Institute (ACMI) warn that 'hazard' labeled art materials should not be used in elementary schools, nursing homes, or hospitals." "Hazard" labels include both acute warnings which are usually preceded by the signal words DANGER, WARNING, or CAUTION, and chronic warnings which alert users to long-term hazards such as cancer, nervous system and other organ damage.

Rubber cement and lead glazes are given as examples of hazard-labeled items. The Alert suggests replacing them with water-based adhesives and non-lead glazes. ACTS, however, does not recommend non-lead glazes for children. These glazes usually contain other toxic metals and we believe the bioavailability tests currently used to assess glaze safety are not protective enough. The Alert also mentions cases of accidental ingestion of glazes by nursing home and psychiatric patients (see ACTS FACTS, November 1992) caused by putting glazes into small medicine cups for use.

Teachers, art therapists, elementary schools, nursing homes, hospitals, and all users of art materials who work with children and special populations should follow label advice precisely and:

1) only use products which are labeled "Conforms to ASTM D-4236;"

2) only use products with no hazards warnings of any kind (acute or chronic) on the label; and

3) never transfer an art material "from its original container to an unmarked container such as a medicine or beverage cup."

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TB: AN OCCUPATIONAL HAZARD

BNA-OSHR, Vol. 22, No. 23, November 4, 1992, pp. 1152-3

One Maine shipyard worker with active tuberculosis infected 417 of his co-workers. In contrast to the usual minority victims of TB, most of the infected workers were young, white, and middle class. Crowded working conditions, poor ventilation, dust, and aerosolized grinding particles were thought to increase the risk of infection.

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PLAGUE THREATENS MUSEUM WORKERS

Collection Forum, SPNHC, Vol. 8, No. 1, Spring 1992, p. 1-8

MMWR, CDC, Vol. 41, No. 40, pp. 737-9 & Vol. 41, No. 42, pp. 787-790

In February 1989, a mammalogist at the Royal British Columbia Museum (RBCM) received an autopsy on two specimens of bushy-tailed woodrat intended for the collection. The cause of death was *Yersinia pestis* which causes plague. The incident led to the development of laboratory health and safety guidelines for all personnel working in the Museum's specimen preparation laboratory and in field collecting.

RBCM safety measures include: using biological safety cabinets for procedures such as evisceration; use of gloves, goggles and face masks; daily disinfecting of the laboratory floor; freezing of nesting materials before examination and handling with gloves; and dilution of waste liquids with bleach.

This year, the Centers for Disease Control have reported 11 cases of plague in humans in the U.S. including a death in Arizona on August 26. The increased likelihood of exposure to plague and many other zoonoses (diseases which can be passed from animals to humans) should prompt all natural history museums to tighten health and safety procedures.

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PEWTER CUPS RECALLED

FDA Consumer, November 1992, p. 3

A Williamsburg, VA pewter shop recalled two styles of pewter baby cups in August after FDA tests found leachable lead levels exceeding the agency's safety guidelines. According to Shirley Robertson, president of the Shirley Pewter Shop, approximately 650 of the 4-ounce cups were sold. Both styles of the cup have a fluted shape and hand-hammered interior. The style for boys has a smooth scroll handle while the handle on the girl's cup is more elaborate. The catalog numbers are 218 and 219 respectively.

The FDA says a child drinking regularly from these cups could suffer impaired intellectual development. If the child uses the cup several times a day for several weeks or months, symptoms such as headaches and seizures could result. For a full refund, including postage, consumers should mail the cups to Shirley Pewter, 1205 Jamestown Road, Williamsburg, VA 23185 or call 804/229-1378.

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LEAD PAINT BILL DIES

House bill H.R.5730 died October 6. The bill would have called for an industrial coatings limit of 0.06 % lead. It also provided for a 5 year period to allow substitutes to be developed for mirror back coatings, lead frit (automotive and architectural), automotive agricultural coatings, marine refinish coatings, and industrial special purpose coatings. Artists' paints would have been exempt. Similar legislation is likely to be reintroduced.

==========

EXCESSIVE LEAD AND CADMIUM IN BRAZILIAN ART MATERIALS

Rev. Inst Adolfo Lutz, 50(1-2, 1990, pp. 291-296

In 1990, a number of Brazilian school materials including inks, rubber erasers, pencils, crayons, chalk, glues, and pastes were analyzed for lead and cadmium. The researchers compared the levels of metals found with the amounts allowed in food. Brazil restricts lead to between 0.05 and 2.00 milligrams per kilogram (mg/kg) and from 0.20 to 1.00 mg/kg for cadmium in various types of food. In comparison, 45 percent of the art material samples contained lead in amounts above the allowed food levels and 9 percent of the samples contained cadmium at high levels. The researchers called for regulatory standards for school articles.

Note: This article is in Portuguese. While the abstract and charts are easy to understand, we hope there is a subscriber who would be willing to provide a more complete translation of the text. If you can help, please call us at 212/777-0062.

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SMITHSONIAN HAS HIGH ACCIDENT RATE

Improvements Needed in OSHA's Monitoring..., GAO/HRD-92-97, August 1992, p.7

A report by the General Accounting Office (GAO) criticized OSHA for failing to investigate federal agencies with high accident rates. The report contained a fact of interest to museum workers:

> ...OSHA did not evaluate the Smithsonian Institution or the National Archives and Records Administration, even though their [accident] rates were higher than the average for all federal agencies for every fiscal year from 1984 to 1989. In fiscal year 1989, the Smithsonian's rate was higher than the rates of 12 of the 15 targeted agencies [highly hazardous agencies such as the Defense and Energy Departments].

ACTS is not singling out these agencies for criticism. Rather, we believe that accident rates at many museums and archives are high, but they are not as well-reported. OSHA requires all institutions and businesses to report every accident on the OSHA 200 form.

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RIGHT-TO-KNOW VIOLATIONS STILL TOP OSHA'S LIST

Environmental Protection, Vol. 3, No. 5, 1992, pp. 48-50, & 53

The OSHA rules most often violated and cited are: failure to have a written hazard communication program; to post an OSHA poster; to maintain an OSHA Form 200 accident reporting log; to have a proper hazard communication training program; and to have material safety data sheets on each hazardous chemical.

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SOME INQUIRIES MAKE MY DAY

When referring a caller to his local Committee on Occupational Safety and Health or "COSH," I explained that there is MassCOSH in Boston, ROCOSH in Rochester, New York, and so on. The caller paused a moment and asked: "Is there an OSHKOSH COSH?"

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