ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

January, 1990
Vol. 4, No. 1

ACTS FACTS SOURCES

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MORE ASBESTOS-RELATED DISEASE SEEN IN SCHOOL CUSTODIANS

(Sources: Bureau of National Affairs (BNA), 10-25-89, pp. 920-921; 12-6-89, p. 1216; and Wall Street Journal 10-27-89)

Last month ACTS FACTS reported on a Massachusetts General Hospital study which showed that 35 percent of Boston school custodians who have worked more than 15 years have asbestos-related lung abnormalities. Only 1 or 2 percent of the general public is expected to have these abnormalities which.

A short time later, Mount Sinai Hospital's Medical Director, Steven Levin, announced that preliminary results of a similar study indicate that 40 percent of New York City school custodians with more than 30 years on the job show similar evidence of asbestos-related lung disease.

These lung abnormalities (including scarring of the lung lining or pleural plaque) are of concern because they are associated with an increased risk of cancer in heavily exposed asbestos and shipyard workers. But whether this will be true for custodians whose exposure is lighter and more intermitant is still being debated.

The answer may have to wait until these workers have been observed for many years. However, a recent New York Public Health Service Hospital study of merchant seamen gives reason for concern. These men worked on ships where asbestos insulation usually is present. The study showed that respiratory cancer accounted for one in five seamen deaths versus one in eleven for non-seamen.

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What ever the outcome for the custodians, it is clear now that asbestos effects workers whose exposure is considerably less that of asbestos and shipyard workers. Until more is known about even lower levels exposures, elimination of asbestos from schools and other environments also is prudent.

INDOOR AIR-POLLUTION STRIKES EPA HEADQUARTERS

(Sources: Bureau of National Affairs, 11-29-89, pp. 1183-4; 12-13-89, pp. 1260-1.

A air-quality survey of 3,955 Environmental Protection Agency (EPA) workers in three buildings in Washington, DC and Arlington, Virginia showed that over 60 percent reported frequent headaches, sinus congestion, unusual drowsiness, and eye irritation. Over 50 percent said they had difficulty concentrating and unusual fatique, and between 30 and 40 percent reported an increased number of respiratory infections, shortness of breath, aching joints, and difficulty remembering. The survey was prompted by an increase in complaints when 27,000 square yards of new carpeting were installed in the fall of 1987.

As the result of negotiations between management and the employees union, several strategies were developed, incuding the removal of some of the carpet, keeping ventilation systems running over the weekend (Monday morning air quality was reportedly the worst), and hiring a ventilation engineer to design corrective mechanisms to provide 20 cubic feet per minute per employee of outside air into the workplace--which is the new American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) standard for ventilation.

The EPA worker's union also petitioned its own employer (the EPA under the Toxic Substances Control Act) to regulate a particular chemical which is a byproduct in the manufacture of the adhesive used in most synthetic carpets made in the US. The chemical, called 4-PC (4-phenylcyclohexene) is alleged to cause symptoms in people in amounts as low as a few parts per trillion.

This story shows what can be done when workers have access to testing and data processing coupled with employers who understand air quality hazards. Millions of other workers plagued by poor workplace air quality do not fare as well.

PARADICHLOROBENZENE ON CANCER LIST

(Sources: BNA, 12-20-89, pp. 1287-88; and NTP 89-239.)

On September 6, 1989, a coalition of 2 industry trade groups and 3 chemical companies asked a federal appeals court to issue an injunction of keep five chemicals out of the National Toxicology Program's (NTP) Fifth Annual Report on Carcinogens. The chemicals are: paradichlorobenzene (PDB), perchloroethylene (perc), ethyl acrylate, methylene chloride, and chlorinated parafin.

The bitterist court battle was waged over PDBs inclusion in the list. The case, Synthetic Organic Chemical Manufacturers Association (SOCMA) v. Dept. of Health and Human Services, (DC WLa, No.89-0884LC), was withdrawn by SOCMA on December 5, the day after the Natural Resources Defense Council and the Department of Justice filed a motion for a summary judgement. The presumption is that SOCMA felt it would lose. By withdrawing without prejudice, SOCMA can bring the same suit again at another time.

As a result, the Fifth Annual Report on Carcinogens (Summary 1989, NTP 89-239) now contains all five chemicals. Single free copies of this report can be obtained without charge by writing the Public Information Office, National Toxicology Program (MD B2-04), PO Box 12233, Research Triangle Park, NC 27709.

The chemical industry probably sought to block PDB's inclusion this report because many products will be affected. PDB is found in a number of consumer products including moth repellants, room deodorizers, toilet bowl blocks, diaper pail deodorizers, insecticides for fruit borers and ants, and animal repellants. It also is used as an intermediate in the manufacturer of many yellow, red and orange pigments, resin-bonded abrasives and dyes.

PDB is also used in many museums and art conservation labs as an insect repellant (even though, PDB is not approved under the Federal Insecticide, Fungicide and Rodenticide Act for institutional use).

REVIEW: THE LOCATION PHOTOGRAPHER'S HANDBOOK

Photographer Ken Haas has written the first complete guide for photographers who travel to locations in this country and abroad. It take readers step by step from negotiating the assignment, through packing and and returning home safely. Of special interest to ACTS are useful sections on Health, Security and Other Emergency Preparations; Safety on the Set; and Health and Physical Fitness.

There are also files on 170 countries listing vital information such as embassy and tourist office addresses, transporation facilities, business hours, electricity voltage and plug size; vacination requirements, health suggestions, cultural mores and taboos, and much more.

ACTS recommends this book for photographers, from professionals to anyone traveling with a camera. It is also of great use to film and video makers. ACTS feels there is a great need for a similar book written specifically for other professional travelers, especially film, video, and theatrical technicians and actors. Meanwhile, there is enough applicable information in this book to make it useful.

The paperback book costs $ 44.95 and can be ordered from Van Nostrand Reinhold, Mail Order Department, PO Box 668, Florence, KY 41022-0668 or call: 606/525-6600.

DIOXINS NOT FOUND IN MUMMIES

(Chronicles of Higher Education, p. A5, Oct 25, 1989)

Scientists have been looking for the sources of toxic dioxins which modern humans accumulate in their body tissues. Some experts have held the view that dioxins always have been around and that they are formed as byproducts of fuel combustion including wood burning. This theory is not borne out by studies of some 2,800 year-old mummies.

The mummies were of ancient Chileans, who cooked over wood fires. They were found to be free of dioxins. This evidence supports the view that dioxins are new to our environment, arising from industrial processes such as production of industrial oils, printing inks, resins, paints and herbicides.

DON'T DUMP YOUR PARIS GREEN

(54 FR 53057-53065)

Even a one pound spill of Paris Green (or of other arsenic compounds) now must be reported to the Envirnomental Protection Agency and cleaned up properly. The cost can be phenomenal. Being caught disposing of the stuff illegally is even worse.

It a good thing artists rarely use these materials today.

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ACTS
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ACTS FACTS

February, 1990
Vol. 4, No. 2

REPORT TO READERS

ASTM D01 Subcommittee meeting, Jan 21-22, 1990

Once again, I represented ACTS at the American Society for Testing and Materials (ASTM) Subcommittee meeting on Paint and Related Coatings and Materials. The following is not a report on all the work done by the committee, but an update on the status of some aspects of art materials labeling and testing.

LABELING LAW ENFORCEMENT POSPONED

Charles Jacobsen, Compliance Officer for the Consumer Product Safety Commission (CPSC) was present at the meeting as an observer and to provide information about the federal art materials labeling law. Included among his remarks was an update on the CPSC's plans regarding the law.

Mr. Jacobsen said that the CPSC intends to begin by addressing the issue of cancer-causing substances in art materials in late February or early March. By the early summer they should be holding hearings on this subject. After this they will begin tackling other chronic hazards such as nervous system damage (neurotoxicity), allergy (sensitivity), etc.

However, the work will clearly not be done in time to begin enforcing the law on schedule (Nov 1990). This is because the CPSC did not have a Chair person for a year. Without a Chair they had no quorum, and couldn't begin to work on the law.

Mr. Jacobsen also noted that if anyone petitioned the CPSC for a postponement of enforcement, they would probably be sucesssful. It is reasonable to assume that someone will oblige.

The delay means that repsonsible manufacturers who already label chronically hazardous products will continue to be penalized by to having to compete with those who are not properly labeling their materials. And consumers still will not be able to tell whether a product whose label lists no chronic hazards is safe, or whether it contains substances with serious long term hazards which legally still do not have to be disclosed.

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CONFORMING TO THE FEDERAL LAW

Discussions were held on differences in wording and intent between the ASTM voluntary labeling standard (D-4236) and the new federal art materials labeling law (an ammendment to the Federal Hazardous Substances Act). Readers may have seen labels on some art materials which reference this standard (e.g. "health labeling comforms to ASTM D-4236").

The new law makes the voluntary ASTM D-4236 labeling standard mandatory. It incorporated the version of D-4236 which was in effect when the law was enacted (October 1988) and then added some requirements. The original intent of the subcommittee was to see if it could create a new version of the ASTM standard which would conform with the law's additional requirements.

If the ASTM Standard D-4236 does not conform it could not be used by manufacturers to meet the law's requirements. Referencing the standard on labels would then be confusing to consumers because it would be essentially meaningless.

For this reasons, I believe that the ASTM standard should 1) conform to the federal law, and 2) include additional provisions which are more stringent than the law. This would mean that companies meeting the ASTM standard would be demonstrating even greater responsibility than those merely meeting the law's minimum requirements. Then referencing D-4236 on a label would be both legal and meaningful.

This opinion places me in a decided minority (of one). The majority of the ASTM committee are people who earn all or part of their incomes selling or making art materials. They may find it difficult to impose restrictions on themselves.

AN APPROPRIATE TELEPHONE NUMBER

One example of a difference between D-4236 and the law provoked considerable discussion. The law states that labels on materials requiring a chronic hazard warning must inlcude an "appropriate telephone number" where consumers can obtain further information. D-4236, on the other hand, does not preclude using such a number, but also allows other options. In fact, the committee voted to include an option to instruct consumers to "call a poison control center" (PCC).

Some of the objections to providing an actual telephone number included the cost which could be a hardship, especially for small companies. And since medically unqualified employees cannot give medical advice, some members were concerned about the time the consumer would waste in calling first the company and then being referred to a PCC or other source. However, since the hazards addressed in this label requirement are chronic (long-term effects), the time involved in obtaining the information is not really a factor.

I reported to the committee that I had done some fast and dirty research on this subject. I held open discussions on this point toward the end of three of my lectures recently. The audiences, composed of mixtures of artists, teachers, and students, had many comments, but two dominent themes seemed to emerge. First, they felt they already knew that they could call a PCC and needed no label to tell them.

Second, they really wanted a number where they could reach someone "responsible" for the product. The word "responsible" seemed very significant. They did not seem to mean that this person should "have all the answers." Rather, they wanted to talk to someone who was very familiar with the product, could refer them to other sources of information, and who had more than an academic interest in their problem--someone with reasons to care.

As a result of these discussions, it is my opinion that companies who distribute materials with chronic hazards should spend the money to provide an actual number. Although medically unqualified employees cannot dispense medical advice, they should be equipped to direct consumers to sources that can. They also should be prepared to provide practical information that PCs would not have. For example, they could explain how to use the materials more safely, send additional product literature, provide information about protective equipment, and so on.

It is also my opinion, that this service would be good for business. Companies will attract and keep customers by providing these services. They also will be getting feed back about their products, and will have an early opportunity to prevent more serious complaints or lawsuits.

After the vote, Charles Jacobsen of the Consumer Product Safety Commission noted (as CPSC representatives have noted in previous meetings) that Congress may have MEANT to require an actual telephone number, and ASTMs advice probably will not be heeded. He also noted that many PCCs provide a number to which manufacturers can refer customers for advice for a price. This cost may not be prohibitive for small companies.

STANDARDIZING TESTS FOR ART MATERIALS

The committee is also looking at tests which are necessary to evaluate the toxicity of art materials. Included are tests on bioavailability and respirability.

BIOAVAILABILITY TESTS. These tests determine how much of a toxic material will dissolve out of the material when ingested and thus be free to cause harm. Toxicologist Woodhall Stopford of the Arts and Crafts Materials Institute discussed a test already required for certain products sold in the European Eccomonic Community. This test may be acceptable for art materials. Dr. Stopford will obtain more information and make a more complete report on the test at the next meeting..

RESPIRABLE DUST TESTS. Respirable dust is composed of particles small enough to be inhaled deeply into the lungs where they may cause harm. At present, expensive microscopic size analysis methods usually are used to determine the respirable dust fraction. As a result, many art materials are not tested.

Validation of a relatively simple test to quantify the amount of respirable dust in powdered materials was planned by the committee. Such a test is an important step in providing artists with information needed to evaluate the relative toxicity of art materials such as ceramic glazes and pastels (see below).

REVIEW OF AN ARTICLE ON "PASTEL HAZARDS"

Art Hazards News, Vol. 12, No. 10, 1989

Artists frequently ask how to work with pastels safely and I have never found truly good answers for them. The reason is that many pastels, especially soft pastels, contain very large amounts (sometimes as high as 80 percent) of respirable dust. It is very difficult to avoid inhaling this dust while working. Artists may not even know they are breathing these tiny dust particles because they are invisible to the naked eye. These particles also comprise the most toxic part of the pastel dust because they can be inhaled deeply into the lungs. (See also RESPIRABLE DUST TESTS above.)

Angela Babin, in an article written for the Art Hazards News, should be complimented for providing some helpful suggestions to pastel artists. Included are precautions against eating, drinking, smoking, gum chewing or applying cosmetics in the studio, advice not to "blow off pastel residue from the paper," to practice good hygiene, and to wear a dust mask if needed.

However, I would council artists not to follow her suggestions to use a "mini-vacuum" to remove dust from the paper, and to vacuum the studio floor. Unless artists use very special and expensive (HEPA filtered) vacuums, or unless the vacuums are vented to the outside of the studio, respirable dust will exhaust from these vacuums.

Respirable dust can pass through the filters of ordinary vacuums and can concentrate in the studio environment. It is possible vacuuming pastel dusts could acutally increase the artist's exposure.

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ACTS FACTS

March, 1990
Vol. 4, No. 3

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NON-ASBESTIFORM MINERALS TO REMAIN UNREGULATED
(55 FR 4938-4954)

Potters, sculptors and other artists using talc, steatite, slip-casting clays and other materials containing tremolite, anthophylite and/or actinolite minerals may soon receive clarification of the status of these products as regards the OSHA (Occupational Safety and Health Administration) asbestos standard. These minerals each occur in two forms: fibrous (asbestiform) and non-fibrous (non-asbestiform). Now OSHA has proposed that the non-fibrous forms of these minerals be removed from the scope of its revised asbestos standard.

Their Proposed Rulemaking published on February 12, made it clear that the evidence that asbestiform tremolite, anthophyllite and actinolite can cause cancer in humans is not disputed. However, regarding the non-asbestiform minerals, OSHA states that "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."

This view is bolstered by the findings of an independent review panel from the National Institute for Occupational Safety and Health (NIOSH). This panel reviewed existng data including studies of the Vanderbilt talc miners (Vanderbilt is one of the largest suppliers of ceramic talc). The panel concluded that these talc miners have demonstrated asbestos-related diseases.

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OSHA concurs with this assessment, but states that because different mines in the same district have a variety of minerals that range from asbestiform to non-asbestiform, it is uncertain what part is played by the non-asbestiform minerals. Since a number of studies of other talc miners also report similar adverse health effects, OSHA suggests that "a separate rulemaking on industrial talc may be warrented...."

OSHA has extended the stay on enforcement of regulations regarding the non-asbestiform minerals until November 1990 to provide time to complete this rulemaking. NIOSH also published February 13, a request for comments and secondary data on animal and human studies on these and other fibrous natural and synthetic minerals (55 FR 5073).

As long as both NIOSH and OSHA believe that there are considerable risks from exposure to industrial talcs, ACTS recommends that these talcs be excluded from children's products and products used in the home. Professional ceramicists and other artists should weigh the evidence and make their own decisions.

LEAD STANDARD EXTENDED TO SMALL FOUNDRIES
(55 FR 3145-3167)

Non-ferrous foundries which cast lead, and lead-containing alloys such as bronze, have been included in the provisions of the OSHA Lead Standard. The new rule requires that engineering controls (ventilation systems) must be installed to keep the level of air borne lead to below 50 micrograms per cubic meter (ug/m3) for large foundries (20 or more employees), and to below 75 ug/m3 for small foundries (less than 20 employees). These small foundries will be allowed to use a combination of engineering controls, respiratory protection and other methods to reduce exposure from 75 to 50 ug/m3.

Of significance to art foundries is the fact that the rule also includes "very small" foundries which employ between one and nine employees. In these and other small foundries, airborne lead must be controlled during all phases of work including melting, pouring, shake out, and finishing operations. OSHA's cost analyses indicate that small and very small foundries will probably have to spend several thousands of dollars to comply. On the other hand, OSHA has given them five years to phase in all the lead standard provisions.

SCHOOL DISTRICT SUED FOR VIOLATING RIGHT-TO-KNOW
(BNA-OSHR, pp. 1686-7)

The State of New York filed suit January 18 in the state Supreme Court against the Board of Education of Central Islip Union Free School District. The State charges that the district failed to train custodial employees, and science, art, and industrial arts teachers about workplace chemicals, and failed to comply with recordkeeping, posting, and other provisions of the 1980 Right-to-Know law. The lawsuit resulted from a complaint filed by the Central Islip Teacher's Association.

The state is seeking $ 10,000 in penalties againt the district and an order forcing it to train employees at its high school, junior high school and four elementary schools. In announcing the suit, Attorney General Robert Abrams said, "It is the district's obligation to inform teachers about the dangerous substances they work with so they can minimize their own risk and pass that knowledge on to their students."

SCHOOLTEACHER COMPENSATED FOR PESTICIDE EXPOSURE
(BNA-OSHR, P. 1497)

The Arizona Court of Appeals, Division Two, ruled January 9 that a teacher's exposure to pesticides on the job is compensable. The teacher testified that she knew she was allergic to pesticides and did not accept her position until she was assured by the school district that she would not be re-exposed to the chemicals. Within a week of beginning work she began experiencing symptoms. Later she discovered that the school had been sprayed with pesticides. She eventually quit her job on the advice of her immunologist.

Her compensation claim was originally dismissed because her illness was not an occupational illness but an ordinary disease. The appeals court agreed, but held that this did not disqualify her from compensation for a personal injury by an accident arising out of and in the course of her employment. The court found that her exposure to the pesticides at work qualified as an "accident" because it was unexpected.

LAB WORKERS GET SPECIAL "RIGHT-TO-KNOW"
(55 FR 3300-3335)

Some conservation and academic laboratories have chosen not to comply with the Hazard Communication Standard (HAZCOM). Instead, they consider themselves "laboratories" which are exempt.

Chemical laboratories have lobbied for and obtained their own special rule: "Occupational Exposures to Hazardous Chemicals in Laboratories," published January 31, 1990. This rule supersedes other health standards with the exception of the Permissible Exposure Limits for approximately 600 chemicals and the individual standards for 23 substances (e.g. ethylene oxide, lead, benzene, etc.). The rule also does not supersede requirements for proper respirator protection, recordkeeping and other general industry rules.

Under the rule, employers must develop and implement a chemical hygiene plan (CHP). The written CHP must be readily available to employees, their representatives and, on request, to OSHA.

The plan must include all necessary practices, procedures and policies to ensure that employees are protected from "hazardous chemicals." The rule defines hazardous chemicals as those "for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees." (This definition is the same as the HAZCOM definition.)

The rule's detailed definition of the CHP is long, consisting of four and a half columns of text followed by five pages of non-mandatory guidelines. It requires measures taken to ensure lab employee protection be written out in detail including:

**standard operating procedures;
**criteria to determine and implement control procedures;
**steps to ensure that fume hoods and other equipment performs adequately;
**provisions for employee information and training,
**circumstances under which a particular lab procedure will require prior approval;
**provisions for medical consultations and examinations;
**designation of personnel responsible for implementation of the CHP including an Officer and, if appropriate, a Committee;
**provisions for additional employee protection for work with particularly hazardous substances.

A major difference between this rule and HAZCOM is that the rule gives employers some latitude in choosing the methods used to protect employees. However, when employers rely on their own methods, they can be called upon to defend these methods if accidents or illnesses occur (in this case, the written CHP may become evidence).

For this reason, and because routine protective measures are sufficient for procedures done in most academic and conservation laboratories, I would counsel them to adopt a HAZCOM plan.

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ACTS FACTS

April 1990
Vol. 4, No. 4

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CADMIUM REGULATIONS PROPOSED

By Monona Rossol

Cadmium has been in the regulatory news a great deal of late. Some of the proposals, if enacted, could result in the loss of cadmium as an art material. Art materials employ cadmium as a paint and ink pigment, an ingredient in many low temperature brazing metals and solders (especially silver), a colorant in some enamels, glazes and glass, an ingredient in some metal alloys used in jewelry and sculpture, and in some metal surface treatments including some types of electroplating and anodizing.

These uses of cadmium are threatened by two bills, one before the Senate and other before the House. The First bill is sponsored by Senator Chaffee and it would simply ban cadmium. This bill is not expected to pass. The second bill would require the EPA to propose regulations for two toxic metals each year. It is assumed that cadmium would be one of the first metals to be regulated.

In addition, the Occupational Safety and Health Administration (OSHA) has propose a rule (55 FR 4052-4147) to lower the workplace airborne limit (the Permissible Exposure Limit or PEL) by a factor of about 100.* This regulation would also require employers to do air sampling, prepare written emergency plans, provide free protective clothing and equipment, construct hygiene facilities such as changing rooms and showers, and arrange for free medical examinations for employees. These provisions would make the use of cadmium too costly for any ordinary artist.

* The previous eight-hour PEL was 100 micrograms per cubic meter (ug/m3) for cadmium fumes and 200 ug/m3 for dust. Now OSHA proposes to lower the PEL for all sources of cadmium to either 5 or 1 ug/m3.

CADMIUM HAZARDS

Regulation of cadmium is being proposed because it has been shown that the previous industrial limits were insufficient to prevent kidney damage and cancer in workers. In addition, people exposed to cadmium may have health problems for many years. It appears that cadmium may have a toxic half life as long as 30 years. (The toxic substance half life is the amount of time it takes the body to expel half of the total amount absorbed.)

Cadmium also is very damaging to the environment. Once in the waste stream, it never converts to a safe material. It pollutes water, makes landfill more toxic and creates a cadmium-containing ash when incinerated.

CADMIUM PIGMENTS

Recently, a representative of the Congressional Research Committee asked for my opinion about the proposed ban on cadmium. I told him that there are substitutes for most art-related uses of cadmium except for pigments. I suggested that these pigments should be exempted from any ban. However, I also feel artists and art material manufacturers should pay for this exemption. Perhaps a surcharge on cadmium could go to environmental programs or to research to find suitable substitutes. In any case, I think we must make some effort to justify our use of this material.

DO YOU USE CADMIUM PIGMENTS?

Many artists (even some "famous" ones) only THINK they buy cadmium paints. This is because consumer protection laws permit manufacturers to label paints as "cadmium" even if they do not actually contain cadmium or if they contain only a small amount of cadmium mixed with other pigments. This is especially true of some water colors, but it may be true of any paint. Better paint manufacturers will supply product literature which identifies their pigment compositions. There are three ways manufacturers should identify pigments: 1) Color Index names and numbers; 2) chemical name; and 3) CAS number.

COLOR INDEX (C.I.) NAMES AND NUMBERS. All professional artists and teachers should be familiar with this internationally accepted identification system. The Color Index is published jointly by The Society of Dyers and Colourists, West Yorkshire, England, and The American Association of Textile Chemists and Colorists, Research Triangle Part, NC.

Every good art school or university library should have the eight volume Color Index. If they do not have it (and many don't), ask them to get it. Instruction in using it should be part of every advanced curriculum. See the Table 1 for the C.I. names and numbers for cadmium pigments.

CHEMICAL NAMES. Although these names can be confusing to those not trained in chemistry, it certainly does not take much education to note that if the word "cadmium" is somewhere in the

chemical name it is a good bet that it contains cadmium. Spotting the difference between chemical names and common names is often equally simple. For example, "cadmium yellow" is a common name--obviously "yellow" is not a chemical. There are two chemicals which commonly are called cadmium yellow. Their chemical names are "cadmium sulfide" and "cadmium selenide".

CAS NUMBERS. These are Chemical Abstracts Service Registration Numbers (see Table 2). These numbers enable someone trained to read standard chemical sources to find information and research data easily. Although this may sound very esoteric, the US and Canadian Right-to-Know laws mandate that ALL workers potentially exposed to toxic substances should already have been told about CAS numbers (and a lot of other things). If your job involves professional art materials (teaching, working with, or selling them) and you have not been so instructed, your employer is probably in violation of the law.

TABLE 1. CADMIUM PIGMENTS

Key C.I. PIGMENT NAME C.I. Number(s)-see note some common names	Chemical composition
PIGMENT YELLOW 35 77117, 77205 cadmium yellow cadmium lithopone yel'w primrose cadmium yellow	cadmium sulfide, cadmium selenide, and/or cadmium sulfoselenide sometimes precipitated with barium sulfate or zinc sulfide
PIGMENT YELLOW 37 77199 aurora yellow cadmium yellow	cadmium salts: cadmium sulfide, cadmium selenide, and other cadmium salts. May vary in color from yellow to red, (see PR 108, PO 20)
PIGMENT ORANGE 20 77199 & 77202 cadmium orange cadmium yellow	cadmium sulfide, cadmium selenide, and other cadmium salts. May vary in color (see PR 108, PY 37)
PIGMENT ORANGE 20:1 77202:1 cadmium barium orange	cadmium sulfide and other salts (see above) and barium sulfate
PIGMENT ORANGE 23 77201 mercadmium colors	cadmium sulfide/mercuric sulfide complex (can be red or orange, see PR 113)
PIGMENT RED 108 77202 cadmium red cadmium scarlet selenium red	cadmium sulfoselenide (a red cadmium salt, see PO 20)
PIGMENT RED 113 77201 cadmium vermillion red	cadmium sulfide and mercuric sulfides (can be red or orange, see PO 23)

Note: Don't be confused by duplicate numbers. Many cadmium pigments can vary from yellow, to orange, and red with only subtle changes in composition. These are assigned the same numbers.

TABLE 2 SOME CHEMICALS USED IN CADMIUM PIGMENTS	CAS NUMBERS
CADMIUM SULFIDE	1306-23-6
CADMIUM SELENIDE	NONE FOUND
CADMIUM SELENIDE SULFIDE also called CADMIUM SULFOSELENIDE	12626-36-7
CADMIUM OXIDE	1306-19-0
MERCURIC SULFIDE	1344-48-5

WHAT WE CAN DO NOW.
Artists' paint constitutes only a small part of the total cadmium waste, but it is OUR contribution. Let's think about how much cadmium goes down the drain when we clean brushes and where our unsuccessful paintings, old tubes, dirty solvents, spattered smocks, paint rags and other waste end up. Can we find ways to reduce or reuse our waste? Can we substitute other pigments for some uses? And if we think of a new or creative way to reduce cadmium waste, let's share it with others.

Some painters may choose to give up cadmium for the sake of the environment. These painters will join forces with many potters and stained glass artists who have switched from lead to lead-free glazes and solders, many jewelers who have given up ivory, and woodworkers who do not use endangered species of exotic wood.

Sometimes we forget that art triumphs over and even makes virtues of limitations. Paintings are not just paint and the choice of materials may be part of the artist's statement.

SAFETY CONFERENCE/TRAINING COURSE OFFERED

Wayne State College is sponsoring a "Safety and Chemical Awareness Conference" June 13-15. Topics and presenters include: Legislation and Liability, Hazardous Materials and Precautions, Monona Rossol, Industrial Hygienist; Reproductive Hazards, Elizabeth Conover, Genetic Counselor/Genetic Nurse Specialist; Rural ad Environmental Health, Burton Kross, PhD; Environmental Health and Preventive Medicine, Agri-Chemicals and Cancer in Nebraska, Dennis Weisenberger, MD, Pathologist; Consumer Products and Home Environments, Pam Gilbert from Congress Watch, Washington, DC; Risk Prevention, Jess Bensen, MD, Toxicologist.

The Conference will be followed by a "Right-to-Know Training Course," June 18-22 taught by Monona Rossol. Participants will complete Right-to-Know training and develop a written RTK program and plan for implementation.

For information on either the Conference or the Course, contact: Dr. Pearl Hansen, Wayne State College, NE 68787. 402-375-2200.

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ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

May, 1990
Vol. 4, No. 5

ACTS FACTS SOURCES

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MERCURY-PRESERVED PAINT HAZARDS

55 FR 7557-8, Mar 2

The Environmental Protection Agency (EPA) published a notice asking permission from the Office of Management and Budget to collect data on mercury biocides used in paints and coatings. The EPA wants to use the data to assess human exposure and risk from products containing mercury biocides and to evaluate the possible economic impact of regulating these products.

This request may be bolstered by an account of mercury poisoning in a four year old boy in August, 1989 reported in the March 2nd Morbidity and Mortality Weekly Report from the Centers for Disease Control. The source of the poisoning was inhalation of mercury-containing vapors from the phenylmercuric acetate preservative in latex paint that had been applied indoors. The paint had higher levels of mercury than the EPA allows. In addition, the house was air-conditioned and the windows were not opened during the month following application of the paint.

The four year old boy has undergone four months of hospitalization, chelation therapy, and intensive rehabilitation. He still has abnormalities, but is now able to walk and continues to improve. Similarly elevated levels of mercury produced almost no symptoms in his parents, and two siblings.

The Paint that caused the poisoning contained between 930 and 955 parts per million (ppm) of mercury. The EPA allows only 300 ppm mercury in interior paint. Apparently the EPA feels that the potential hazards of this lower level should be reassessed.

==========

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

NIOSH CHANGES RESPIRATOR STANDARDS

55 FR 9506-7, Mar 14

The National Occupational Safety and Health Administration (NIOSH) will change the maximum use concentrations for respirators to reflect the new Permissible Exposure Standards (PELs) set by the Occupational Safety and Health Administration (OSHA). NIOSH is sending a letter to all respirator manufacturers directing them to change their labels to read: "Approved for respiratory protection against (substance). Do not exceed maximum use concentrations established by regulatory standards."

Artists who use respirators should understand this statement. It means that if OSHA recognizes an assigned protection factor (see table below) for a particular respirator, the maximum airborne concentration for which this mask should be used should not exceed that protection factor times the PEL.

For example, the protection factor for a dust mask is five. The old PEL for kaolin (clay) dust was 15 milligrams per cubic meter of air (mg/m3). In this case, dust mask could be used for levels up to 75 mg/m3. Now that the PEL for kaolin has been reduced to 10 mg/m3, the respirator should not be used in concentrations of 50 mg/m3 or greater.

SOME RESPIRATOR TYPES	PROTECTION FACTORS
single use dust mask	5
quarter face dust respirator	5
half-face respirator	10
full-face respirator	100

Air sampling is needed to establish precisely when the amounts of airborne clay dust or other contaminants exceed respirator specifications. While this may not be practical for most artists, understanding the protection factors will explain why some respirators should not be used in highly contaminated environments, and demonstrate that all air-purifying respirators are limited in the degree to which they can protect wearers.

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DIRECT BLACK 80 TO BE STUDIED

55 FR 9366, Mar 13/BNA-OSHR, p.1872

The Board of the National Toxicology Program approved recommendations to assign a high priority for dermal absorption tests for Color Index (C.I.) Direct Black 80. If these tests show that the dye is absorbed through the skin, cancer testing will follow.

C.I. Direct Black 80 (CAS No. 10169-02-5) is a triazo dye used to dye cellulose, silk, leather and paper. It is a common substitute for Direct Black 38 which is a cancer-causing benzidine dye. This information should remind dyers to obtain Color Index names and hazard data on all dye products from their suppliers, to avoid skin contact with dyes, and to practice good hygiene.

==========

MORE FREONS MAY BE RESTRICTED

55 FR 10473-4, Mar 21

On March 5, the EPA published a notice that it has received a petition from Governor Thomas Kean of New Jersey, Governor Mario Cuomo of New York, Governor Madeleine Kunin of Vermont, and the Natural Resources Defense Council. The petitioners asked the EPA to add seven more ozone depleting chemicals to the list of chemicals which come under the Community Right to Know (SARA). The EPA is reviewing and requesting comments on the petition.

General understanding of the need to restrict the release of Freons and other ozone depleting chemicals is growing. Those of us in the arts also should do our part. For example, we could refuse to purchase those few products which still contain fluorocarbon propellants, replace freon film cleaners with other products, and purchase fire extinguishers which do not employ halon when practical.

Theatrical special effects designers also could stop using it. It is sad to think, for instance, that Freon has been released unnecessarily during literally tens of thousands of performances of CATS worldwide. Freon is used on stage to make the tea kettle's steam, to operate the kettle's whistle, and to pump up "Growl Tiger's" inflatable costume. Freon could be replaced with other gases for these effects.

==========

DRINK UP YOUR URETHANE

55 FR 6839, Feb 27 & 10816-7, Mar 23

Urethane is a chemical used to make polyurethane plastics, varnishes and paints. It has been shown to cause cancer in animals and is considered a potential human carcinogen. Now urethane is slated for further long term (sub- chronic and chronic) toxicity studies by the National Toxicology Program (NTP). These studies are needed not only because many workers are exposed to urethane, but because you may be drinking it.

Urethane was found in some US beverages in November of 1985 by the Government of Canada. A month later, the Government set regulatory limits on the amount of urethane in table wines, ports, sherries, distilled spirits and brandies sold in Canada.

The U.S. government's Food and Drug Administration (FDA) did not set urethane limits because they concluded that there was insufficient data to accurately assess the risk to drinkers. The FDA then asked the NTP to provide the needed data. Testing began in 1988. Some tests have been completed.

On March 16, five years after urethane was found in beverages, long term tests are about to begin and the FDA entered into agreements with the wine and distilled spirits industries to 1) reduce urethane in certain alcoholic beverages to the "lowest level technically feasible," and 2) to perform research to find out how the urethane gets into their products.

How urethane gets into alcoholic beverages is not known. The wine and distilled spirits industries recently presented studies indicating that it may be formed from urea which is a natural a byproduct of yeast metabolism. However, it is hard not to notice that urethane, also known as "ethyl carbamate," is in the same chemical family as the carbamate pesticides and is an ingredient (intermediate) in the manufacture of several pesticides and fungicides.

==========

WELDING,CUTTING & BRAZING STANDARDS CHANGE

55 FR 13694-13711, Apr. 11

Sculptors, theater production workers, teachers and others who weld, cut or braze metals will find that the OSHA standard that applies to their work has been reorganized. OSHA reorganized the standard 1) to make it easier for both OSHA and the public to use, and 2) to facilitate a planned revision of the standard.

Originally covered in only one section of the Code of Federal Regulations (29 CFR 1910.252), the standard has been renumbered and converted into four sections (29 CFR 1910.252-255). Other changes include the addition of metric units to various measurements in the text, correction of an error, updating of mailing addresses of organizations that publish the source standards, and other non-substantive changes. Copies are available from OSHA's Publications Office (202/523-9667).

More substantial changes in the regulations are planned for the near future to accommodate advances in welding technology and to provide consistency with current industry standards. Artists and teachers who weld can expect the new standard to affect some of their welding practices.

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TRUMP TRUMPED

55 FR 107-52, Mar 22

The Research and Special Programs Administration published among their rulings on Transportation of Dangerous Goods, a notice declining to reverse a prior denial to give the Trump Shuttle confidential treatment. This notice appears to indicate that the Trump Shuttle tried twice to block public access to information about any hazardous materials they might transport.

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ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

June, 1990
Vol. 4, No. 6

ACTS FACTS SOURCES

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LEAD PAINT REMOVAL GUIDELINES PUBLISHED
(55 FR 14556-14789, Apr. 18)

The Department of Housing and Urban Development published its guidelines for lead based paint abatement in public and Indian housing. The guidelines represent the first national compilation of technical protocols, practices, and procedures on testing, abatement, worker protection, clean-up, and disposal of lead-based paint in residential structures. Contributors to the guidelines include 32 individual, corporate and government experts on lead poisoning, public health, law, chemistry, and the environment.

It is very likely that these guidelines will find their way into state and federal laws in the near future. For now, the 233 page document is considered an interim guide pending review of the effectiveness of the suggested practices. It also is designed to be easily coordinated with federal, state and local regulations on lead exposure and waste disposal. They include provisions for:

* a written abatement plan for large projects;
* notifying and obtaining permits from of all appropriate agencies;
* notifying the public and all affected residents;
* removing residents to another location unless only single rooms or very small areas are abated;
* medical testing of abatement workers prior to work including work history, physical exam, pulmonary status (to determine if worker can wear a respirator), blood pressure, blood work including a lead test, urinalysis, and more;
* training of all abatement workers prior to work;
* lead testing the painted surfaces, the air, and the dust before, during and after abatement;
* providing workers with protective clothing as needed which may include gloves, hair covering, goggles, face shields, respirators and cartridges, protective coveralls, and shoe covers;
* provisions to provide workers with water and shower facilities, clean changing areas, laundering facilities, and enforcement of removal of protective clothing at the end of each day;

* containment of the abatement area with plastic barriers;
* periodic blood testing of abatement workers at intervals determined by a number of factors related to the work, and removal of workers from the job if blood lead is elevated;
* proper clean up and removal of lead-containing waste.

Also addressed are abatement methods including heat-based methods (torches are not approved), chemical methods, and encapsulation behind paneling, tile, wall board, siding, etc. Materials that are not approved for encapsulation include a new coat of paint or primer, paper wall coverings, or contact paper.

Engineers, architects, designers, and contractors should be especially concerned about two sections describing their duties. HUD makes it clear that these professionals must stay abreast of abatement standards. They must be familiar with the advantages, disadvantages and costs of each abatement strategy, consider them in planning, sequence the work so that other work such as modernization or restoration does not interfere, and ensure that the project will not endanger workers, the public, or the environment.

These comments put engineers, architects, designers, and contractors on notice that HUD (and perhaps others clients) will want to hold them liable for damages resulting from failing to properly consider abatement hazards in projects they undertake.

Copies of the guidelines can be obtained from the US Government Printing Office or by calling 202-783-3238 and ordering a copy of the Thursday April 26 Federal Register.

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NEW PAINT STRIPPING CHEMICAL TO BE TESTED
(55 FR 11398-11407, Mar. 28)

The Environmental Protection Agency (EPA) is proposing to study a chemical called n-methylpyrrolidone for its ability to cause cancer, mutations, developmental and reproductive harm, and other effects. One of the reasons the EPA wants to study this chemical is that it is used as a substitute for methylene chloride in an estimated ten per cent of paint strippers on the market.

EPA estimates that about 2.7 million consumers are currently exposed to this chemical. This number will increase as more manufacturers seek substitutes for methylene chloride which is now recognized as a carcinogen.

The limited data available on n-methylpyrrolidone suggests that it also may be very toxic. Since proposed tests will take years to complete, consumers should exercise caution when using this material. (See Rules for Using Paint Strippers, page 3.)

==========

RULES FOR USING PAINT STRIPPERS

1. Test the paint for lead.[1] If it is lead paint, try to have it professionally removed. If small lead painted objects must be stripped, remove the paint carefully with methods that create no dust (e.g. from sanding) or lead fume (from heat methods). If walls, window frames, moldings, or other large jobs are to be done, arrange for profession abatement or obtain HUD lead paint abatement guidelines (see above) and follow them.

2. If you are pregnant or have any serious health problems, consult your doctor before beginning the project.

3. Obtain Material Safety Data Sheets (MSDSs) on all strippers, cleaners and other products you will use. Follow all MSDS advice. If chemicals whose hazards are unknown are present in a product, treat the product as if it were highly toxic.

4. Choose the safest strippers. Use water-based products over solvent-containing ones when possible. Avoid strippers containing carcinogens such as methylene chloride.

5. Choose stripping methods which do not create toxic vapors, dust, or fumes when possible. Never sand paint from walls or use torches. Choose heat guns that do not operate above 700 degrees Fahrenheit.

6. Plan ventilation for the area if heat guns or volatile chemicals are used. For example, locate an exhaust fan in one window opposite an open door or window to provide efficient air flow across the work area. Move the fan and adjust the air flow pattern frequently as the work area changes.

7. If solvent products are used (both flammable and non-flammable[2]) be sure no sources of heat, sparks, static electricity or flame are present. Turn off all pilot lights in any area where vapors may conceivably drift. Never use torches or heat guns where solvent strippers are used.

8. Plan ahead for easy clean up. Cover floors with plastic tarps. Keep cleaning products and spill control materials (kitty litter, solvent sorbants, etc.) handy and clean up spills immediately. Keep debris organized and removed daily.

9. Choose safe cleaning materials. Avoid cleaners containing solvents such as the glycol ethers. Trisodium phosphate[3] is recommended in the HUD guidelines for cleaning stripped wood and for cleaning the work area.

10. Wear appropriate protective clothing as indicated by the MSDS. If gloves are recommended, check with your glove manufacturer to be sure the gloves are not quickly degraded or permeated by ingredients in the stripper or cleaners. Do not wear soiled clothing, shoes and other protective clothing out of the work area. Discard or wash these clothes separately from other laundry.

11. If respirators are needed in addition to ventilation, be sure that all OSHA respirator program rules have been followed.[4]

12. Dispose of all chemicals, paint waste, and debris in accordance with health, safety and environmental protection regulations.

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Footnotes

1. Varnish usually does not have to be tested as it rarely contains significant amounts of lead. Contact your local health department for information on local sources if lead testing.

2. Non-flammable solvents usually will dissociate into highly toxic chemicals in contact with heat.

3. Although TSP is a phosphate detergent, it can be purchased at hardware stores for this purpose.

4. Contact your local Department of Labor and ask for information on the OSHA Respiratory Protection Program. Especially be sure that a) your doctor approves of your wearing a respirator, b) you have been fit tested (to see if the respirator fits properly), c) you have selected the proper respirator, filters or cartridges for the job, and d) you have been trained to understand the use, limitations, cleaning, and maintenance of the equipment.

TWO SAFER STRIPPERS ON THE MARKET

Monona Rossol, Editor

3M "Safest Stripper" is a product whose active ingredients are dimethyl adipate and dimethyl glutarate. The standard sources of toxicological data indicate only a very few studies of dimethyl adipate and no data at all on dimethyl glutarate.

The absence of information prompted me to call Roger Perkins, 3M's toxicologist. He told me that the manufacturer of the chemicals did some animal tests by inhalation for acute effects, reproductive hazards and birth defects.

Dr. Perkins indicted that the tests show that there is a potential for nasal irritation when working closely with large amounts of the material. In addition, there may have been very minor, perhaps insignificant, effects on the test animal's reproductive abilities and fetuses. No cancer tests have been done to my knowledge.

All in all, it would appear that "Safest Stripper" is safer than the common solvent strippers on the market. The large amount of water in the product (68-75 per cent) also should limit exposure during normal use. Nevertheless, the product should be handled in accordance with the safety practices listed on page three.

Dumond Chemical makes 3 types of Peel Away Paint Removal Systems™. Two of them contain methylene chloride and are not recommended. The other contains a combination of caustics (hydroxides). The product is brushed on the painted surface, covered with a special cloth and hours later the cloth and the paint adhering to it are pulled away from the surface.

No cancer risk associated with the caustic ingredients, but good general ventilation should be provided and eyes and skin must be protected with gloves, goggles, and protective clothing. Water must be used to final wash the surface. Some users report this product darkens the wood and raises grain somewhat.

The caustic Peel Away method may be one way to remove lead paint without creating dust or fumes. However, users warn that the cloth must be peeled away when the paint is still damp or the lead paint will powder. For technical information on the product, call Dumond Chemicals, Inc., 212-869-6350.

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ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

July, 1990
Vol. 4, No. 7

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OSHA CITES ART DEPARTMENT

(BNA-OS&HR, May 2, p. 2139)

California University at Hayward was cited by OSHA on April 23. OSHA issued 19 citations for violations found in the Arts Education Building and gave the school 30 days to correct the simplest problems and 90 to complete more difficult tasks such as installing fans and hoods and developing a hazards communication training program. Some activities have been halted until a complete renovation of the building's ventilation system can be done.

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BORON WOOD PRESERVATIVES

Boron compounds often are being used to replace more toxic wood preservatives such as arsenic, pentachlorophenol and creosote. Boron compounds also function as fire retardants.

In general, the borates are safer for the environment, but they still must be considered toxic. As proof of this contention, the EPA recently rejected a petition from the U.S. Borax Research Corporation (55 FR 10254-6, Mar. 20) to remove zinc borate from the list of toxic chemicals under EPCRA (the Emergency Planning and Community Right-to-Know Act). The EPA denied the petition based on evidence that the chemical is expected to be toxic to aquatic organisms and could cause adverse developmental and reproductive effects in humans who drink the water.

Care also must be taken when borates are used in the workplace. Exposure to the dust and fume of boron compounds causes eye and respiratory system irritation and shortness of breath. Many boron compounds also absorb through broken skin. Skin absorption or ingestion of even a gram or so of borax, boric acid, or other soluble compounds can cause severe gastrointestinal injury, kidney injury and even death from central nervous system depression or vascular collapse, especially in infants. A large clinical study of infants exposed to an over-the-counter diaper rash product indicates that skin rashes also may be associated with boric acid (55 FR 25240-4).

Even with these drawbacks, sufficient protection for woodworkers and the environment easily can be attained with good ventilation, dust control, and proper disposal of scraps and sawdust.

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

D-LIMONENE

Many paint solvents and strippers now contain d-limonene. This chemical is a major component of citrus rind oil. Trade names of products containing it include Citrus Turp, Grumtine, Citrus Clean, and many others.

Advertisements for these products often emphasize that the FDA allows small amounts of d-limonene in food as an additive and that it is present in some citrus fruit products naturally. Advertisements fail to mention that d-limonene is mother nature's own, very effective pesticide and an EPA Registered Pesticide Ingredient.

Whenever claims about food use are irrelevantly included in product advertising, it is ACTS' policy to point out the product's equally relevant status as a pesticide. The following is a more rational look at the toxicity of d-limonene.

ACUTE TOXICITY

Acute toxicity is measured by the Lethal Dose 50 (LD^{50}) test. This is a test which determines the dose at which 50 percent of the test animals will die. When administered orally, a chemical is considered acutely toxic if this dose is less than 5 grams per kilogram of body weight of the animal. Accordingly, d-limonene is acutely toxic by ingestion to rats (4.4 g/kg) and just misses being acutely toxic to mice (5.6 g/kg). Legally, this enables sellers to label their product as "non-toxic."

One manufacturer who failed to include acute warnings on their product was sued when it's fruity odor tempted a young boy to drink some. The boy was hospitalized. This manufacturer now includes a warning on the product's label.[1] Others should do likewise.

CHRONIC TOXICITY

Chronic toxicity is measured in long term tests for reproductive hazards, birth defects, neurotoxicity, other organ damage, and more. The only significant chronic tests I could find are cancer assays done by the National Toxicology Program in 1988.[2] The summary of their data indicates that d-limonene shows no evidence of carcinogenicity in female rats or in mice of both sexes. However, clear evidence of carcinogenicity is seen in male rats.

Mixed results like these usually indicate that further study is needed, but it is not likely that this research will be done in the near future. Meanwhile, sellers of d-limonene can legitimately tell customers that it is not considered a cancer agent.

WORKPLACE LIMITS

Advertising copy and/or the manufacturer's Material Safety Data Sheets may also state that d-limonene has no OSHA Permissible Exposure Limit (PEL) or other workplace limits. This is not an endorsement by OSHA. It merely means that not enough exposure data and other documentation is available to set limits.

OTHER HAZARDS
D-limonene is also a "skin absorber," meaning that significant amounts can be absorbed by skin contact. Many skin absorbing chemicals also permeate and/or degrade many types of chemical gloves. (I called two glove makers who recommend nitrile gloves.)

PRECAUTIONS FOR SAFE USE
Users of d-limonene can assume that its toxicity is somewhere between petroleum distillates and turpentine. Its slightly lower volatility will result in less exposure by inhalation. It should be used with the same precautions used with other solvents combined with strict avoidance of skin contact. Children should never use it or be left unattended where it is kept.

Footnote 1. "Grumtine Odor a Hazard?" Art Hazards News, Vol. 6, No. 6. July 1982.
Footnote 2. A draft document from the National Toxicology Program which cannot be cited.

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BOOK LINKS PAINTING AND CANCER

The world Health Organization (WHO) has published a 535-page book focusing on the cancer risk associated with occupational exposures in paint manufacturer and painting. Although there are literally thousands of chemical compounds in paint products used as pigments, binders, solvents, and additives. The book concentrates first on known carcinogenic effects of some organic solvents, plastic monomers, pigments and other chemicals used in paints.

The authors then use three large cohort studies and national statistics to assess the cancer risk. Of the studies of painters, eleven showed an increased risk of lung cancer, 15 showed excess risk of urinary tract cancer, and eight showed excess risk for bladder cancer. Two out of five studies of leukemia also mentioned that painters showed excess risk. Many smaller numbers of studies identified risks of other cancers including laryngeal cancer, mesothelioma, oesophageal and stomach cancer, gall-bladder and bile tract cancer, Hodgkin's disease, and multiple myeloma. A single study of pancreatic cancer reported a high risk for exposure to paint thinner and another study reported a high risk of testicular cancer among spray painters.

Especially noteworthy were twelve studies of childhood cancer which all mentioned paternal exposure to paint and related substances, and four studies which presented data on maternal exposure.

This book, Some Organic Solvents, Resin Monomers and Related Compounds, Pigments and Occupational Exposures in Paint Manufacture and Painting can be purchased for $ 68 (US money order) from WHO, Distribution and Sales, 1211 Geneva 27. Switzerland.

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WINSOR & NEWTON PRODUCT INFORMATION AVAILABLE

Winsor & Newton has produced a series of leaflets on the history, ingredients, proper use and health hazards of their paints and related products. Ingredient information about the pigments they use also includes their Color Index* and chemical names.

Each of the leaflets is devoted to one line of materials such as oils, alkyds, acrylics, gouache, graphic colors, ink, brushes, mediums, solvents and varnishes, and grounds. ACTS especially recommends leaflet No. 22 which is devoted to health and safety in painting.

The leaflets will assist professional artists, teachers and others, to become more acquainted with the technical aspects of painting and to better protect their health. Winsor & Newton are providing their distributors with displays of these materials. Consumers may pick them up from their distributors or they may request them in writing from Winsor & Newton, 11 Constitution Ave., PO Box 1396, Piscataway, NJ 08855-1396.

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* August 1, my new book, The Artists Complete Health and Safety Guide will be available. Included will be a list of about 140 pigments with their Color Index names and their hazards. Supplemental information about the Winsor & Newton pigments could easily be looked up in this list. -- Monona Rossol

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LEAD REGULATIONS CONTEMPLATED

An international effort to reduce the risks of lead exposure will be undertaken by the United States, with assistance from Denmark. The project is one of several environmental efforts of the Organization for Economic Cooperation and Development. The objective is to gather information on uses and sources of exposure, chemical fate in the environment, anticipated and existing substitutes, and regulatory and non-regulatory actions underway internationally to reduce the risk. (BNA, EW May 28, p. 4.)

In the United States, three bills which would ban or curtail the use of lead (S-1112, S-2637, and S-2593) are currently before the Senate. More about these bills in up-coming issues of ACTS FACTS.

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ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

August, 1990
Vol. 4, No. 8

ACTS FACTS SOURCES

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CERAMIC FIBERS PROPOSED FOR CANCER LIST

(55 FR 28942-3, July 16)

The National Toxicology Program (NTP) published a request for public comment on its proposed list of additions to the Seventh Annual Report on Carcinogens. Among those substances NTP proposes to designate as "Reasonably Anticipated to be Carcinogens" are ceramic fibers of respirable size and glass wool. The decision to list these chemicals has already undergone peer review by scientists of either the International Agency for Cancer Research or a subcommittee of NTP. Users of ceramic fiber kilns and insulation should consider the opinions of these experts when working with this material.

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PCBs APPROVED FOR USE IN ART CONSERVATION

(55 FR 21023-31, May 22)

EPA approval has been granted to McCrone Associates to continue distributing Arochlor, a mixture of polychlorinated biphenyls (PCBs), as a slide mounting medium in art and historical conservation laboratories. In order to distribute these highly toxic and environmentally damaging chemicals, McCrone successfully demonstrated to the EPA that there are no suitable substitutes for the material, that significant efforts have been made to find a substitute, and that very small amounts of the products are being used in ways which do not significantly damage the environment. Regarding the amounts used, the EPA document states that "...only 1 liter per year of Aroclor is used by all of the microscopists combined and just one ounce of Arochlor 5442 will produce at least 4,000 individual microscope slide preparations."

In addition, McCrone convinced the EPA that "...professionally trained personnel using Arochlor in the controlled laboratory conditions make every reasonable effort to ensure proper mounting of the slides and no environmental contamination of PCBs."

This editor hopes these statements are true and that practices I observed only a few years ago have been discontinued. At that time, I saw Arochlor used in poorly equipped laboratories by

students and others who were untrained in the hazards of the material. In one case I also saw excess Arochlor removed from the edges of slides with a wet grinding wheel by people using no personal protection. Splashes, mists, and contamination of hands and clothing with wet abrasive were observed. The grind wheel was left uncleaned until the PCB-contaminated grit dried and became a dust. As far as I could determine, no special care was taken in clean up and disposal of this PCB-contaminated dusty material.

Practices like these must not be allowed if conservators are to keep their exemption to use Arochlor. -Editor

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SILICOSIS IN CABINET SANDBLASTERS

(Centers for Disease Control-MMWR, June 29, p. 433-7)

In November 1988 a west Texas physician reported three cases of silicosis in sandblasters. One of the workers, a 34-year-old man, died. All three workers were employed at a facility that sandblasted oil-field drilling pipes.

The blasting mixture these workers used contained about 20.5 percent free silica. They worked in enclosed blasting cabinets which were connected to exhaust systems, but they were in poor repair. Clouds of dust were released into the work area. In addition, the workers manually shoveled used abrasive back into the machinery for reuse. Some workers reported using disposable respirators which are inadequate for this purpose. None of the affected workers had been fit tested for their respirators.

Following the physicians report in January of 1989, the Texas Health Department contacted local physicians and identified seven additional sandblasters who had contracted silicosis since 1985. This may only represent a fraction of affected workers since many doctors are not skilled at diagnosing silicosis. Even when workers die with silicosis, the diagnosis may not be listed on the death certificate.

As early as 1974, the National Institutes for Occupational Safety and Health (NIOSH) recommended that sand or other substances containing more than one per cent free silica be prohibited as abrasive blasting material. Artists surely should follow this advice in their studios.

Artists also should keep in mind that even when dust is not clearly visible, there may be hazardous quantities present in the air. For protection against all types of abrasives, they should purchase well-designed blasting cabinets which recycle in ways which preclude the need to be exposed to used material. The cabinets should be kept in excellent repair. Hand-held blasting equipment should only be used with training and an OSHA respiratory protection program.

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MERCURY PAINT PRESERVATIVES VOLUNTARILY RESTRICTED

(55 FR 26754-6, June 29)

A report of a 4-year old child who developed a rare form of mercury poisoning (acrodynia) after his house was painted with a paint containing mercury (reported also in ACTS FACTS, Vol. 4, No. 5) prompted EPA to investigate mercury levels in homes painted with similar paints. EPA concluded that this use of mercury presents an unreasonable risk of adverse health effects.

EPA then initiated discussions with the makers of the mercury preservatives to determine whether the removal of these chemicals from paint could be achieved by voluntary rather than regulatory actions. The manufacturers agreed to request a voluntary cancellation of their pesticide registrations for their mercury preservatives for use in interior paints.

All containers of mercury-containing preservatives must be relabeled (stickered) by August 20, 1990 with language prohibiting their use in interior paints. (Mercury still can be used in exterior paints.) Existing stocks of these preservatives, properly labeled, may still be sold and used until June 27, 1991.

Consumers should be aware that these labels are to be affixed to stocks of the preservative, not to paints. They are intended to inform paint manufacturers that they are not approved for use in making interior paint formulations. This means that interior paints which already contain the preservatives will be on the shelves for some time to come.

Identifying those paints which contain mercury may not be easy. The preservatives are odorless, colorless, and will invisibly offgas over a number of days from freshly painted walls into room air. Reading paint can labels may not help. Labels often do not identify preservatives. When they do, they may refer to them by brand names which do not include the word "mercury."

ACTS suggests that consumers ask paint manufacturers to send them Material Safety Data Sheets on the paints they have in stock or intend to purchase. If these forms also are hard to understand, ACTS will be happy to review them for readers and others.

==========

ELEMENTAL MERCURY POISONS TWO

(MMWR, June 29, p. 424-5)

The Centers for Disease Control reported another household poisoning from mercury. The victims were a 15 year old boy and his 11 year old sister. Both patients were diagnosed as having acrodynia with neuropsychiatric impairment. They are recovering, but after three months of treatment, the female child was only able to walk short distances without assistance.

Neighbors reported that a previous tenant of the apartment in which the children resided had spilled a jar of mercury.

==========

ANOTHER ASBESTOS STUDY SHOWS SCHOOL WORKERS AT RISK

(BNA-OSHR, June 13, 1990, Vol. 20, No. 2, p. 36-37)

Previously, ACTS FACTS reported two studies of Massachusetts and New York City school custodians which showed that significant numbers of these workers developed asbestos-related lung disorders. (See Dec. 1989, Vol. 3, No. 12 and Jan. 1990, Vol. 4, No. 1.) Now similar results are seen in findings from Wisconsin.

The study was done by Henry Anderson, Wisconsin's chief state epidemiologist. Anderson used data from chest X-ray examinations to show that 43 percent of Wisconsin school maintenance workers with more than 30 years on the job have lung abnormalities indicating asbestos damage.

In addition to the X-ray study, Anderson used a state cancer registry to track down cases of mesothelioma, a rare, fatal cancer associated with asbestos exposure. Anderson found that in Wisconsin, there was a nearly three- to four-fold increase in risk from mesothelioma among fire fighters and police officers, school employees, postal workers, and janitors. When he tracked down specific cases of people who worked in buildings with in-place asbestos, the victims included two school maintenance workers, a teacher, a school cafeteria cook, a fire fighter and a police officer who worked in a court building that contained asbestos.

It is becoming clear that asbestos in schools is a very real hazard and the so-called "third wave" of diseases from deteriorating or disturbed in-place asbestos is here.

==========

D-LIMONENE UPDATE

The National Toxicology Program's (NTP) Draft study of d-limonene which was mentioned in ACTS FACTS last month has been peer reviewed and released in its final form. The conclusions regarding cancer tests of d-limonene from the draft document that the article cited were unchanged in the final document.

Readers interested in obtaining copies of the document may do so by requesting single free copies of "Toxicology and Carcinogenesis Studies of d-Limonene in F344/N Rats and B6C3F1 Mice (Gavage Studies) (TR 347) from: NTP Public Information Office, MD B2-04, P.O. Box 12233, Research Triangle Park, NC 27709.

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ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

September 1990
Vol. 4, No. 9

ACTS FACTS SOURCES

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URETHANE FOAM PRODUCTS MAY CAUSE CANCER

(BNA-OSHR, March 28, Vol. 19. No. 42, p. 1903)

One of the most hazardous materials used by artists are two-component urethane foams. They are hazardous because isocyanates, such as toluene diioscyanate (TDI) and methylene bisphenyl isocyanate (MDI), are released during foaming. These chemicals can cause serious toxic effects as well as severe allergic responses known to be responsible for sudden deaths of some workers.

Now the National Institutes for Occupational Health (NIOSH) have made available a bulletin* which concludes that commercial grade TDI and a related compound also are "potential occupational carcinogens." The bulletin presents evidence that commercial grade TDI is associated with liver and pancreatic cancer in rats and mice. TDI and many closely related chemicals (isomers) were also shown to be mutagens.

Artists may be exposed to TDI and other isocyanates during foaming of urethane or when melting or burning urethane foams or plastics. Air-purifying respirators are not approved for protection against isocyanates. Only excellent local exhaust ventilation and/or air-supplied (SCBA) systems can be used. Clearly replacing this material is advised.

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* Copies of the Bulletin can be obtained by requesting Current Intelligent Bulletin 53 (TDI and TDA, Evidence of Carcinogenicity) from Publications Dissemination, DSDTT NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226; 513/533-8287.

==========

MERCURY-PRESERVED PAINTS:UPDATE

Last month's article on mercury-preserved interior paints left us with the difficult problem of determining which paints contain mercury. Now EPA has contracted the National Pesticide Information Network to answer consumers inquiries at 1-800/858-7378.

==========

NIOSH RECOMMENDS REPLACEMENT OF FOAM PACKING
(NIOSH-HETA 90-011-2034)

Like many workers in museums, galleries, theater shops and sculpture studios, Xomox Corporation in Cincinnati used polyurethane foam. The particular product, Sealed Air Corporation's Instapak 40, was used to foam pack the space around their products in shipping containers. At the request of Xomox's Safety Coordinator, the National Institutes for Occupational Safety and Health (NIOSH) evaluated the hazards of this process on January 25, 1990.

Xomox's packing process involved only very short periods (5-10 minutes) of actual foaming. Nevertheless, air sampling showed workers were over-exposed to MDI (methylene bisphenyl diisocyanate). NIOSH recommended another method of packing be found. If foaming was to be continued, NIOSH recommended air-supplied respirators, special ventilation, medical surveillance, and many other expensive safeguards.

==========

HYDROQUINONE STUDY RELEASED
(NTP Technical Report, Series No. 366)

The National Toxicology Program (NTP) has released its study of Hydroquinone. The study has been anxiously awaited by many of us interested in the hazards of photographic chemicals.

Hydroquinone is a common photodeveloper. It is also is one of the major metabolites of benzene, that is, when benzene is inhaled or ingested, the body converts some of it to hydroquinone. Experts speculated that hydroquinone might be responsible for benzene's ability to cause leukemia and bone marrow problems in humans.

The good news is that the NTP study suggests that hydroquinone contributes little to the observed carcinogenicity of benzene. The bad news is, hydroquinone is probably a carcinogen, although not as potent as benzene.

Under the conditions of this two year study, there was some evidence* of carcinogenic activity for male rats (kidney cancers), some evidence* of carcinogenic activity in female rats (leukemias), no evidence* of carcinogenic activity for male mice, and some evidence* of carcinogenic activity for female mice (liver cancers).

Photographers should take great care when working with hydroquinone and all other photochemicals. Special ventilation or respiratory protection should be used if dry chemicals are mixed. Premixed developers are safer but still require good ventilation in the darkroom, and use of gloves and tongs to avoid skin contact.

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* The NTP uses five categories of evidence of carcinogenic activity to summarize the strength of the evidence observed in each experiment: 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 experiments that because of major flaws cannot be evaluated (inadequate study).

==========

DIARYLIDE PIGMENTS DANGEROUS WHEN HEATED

(Chemical Marketing Reporter, p. 19, May 21, 1990, reported in HazChem Alert 5(16) p. 144.)

An article in the Chemical Marketing Reporter warned manufacturers not to use diarylide pigments in polymers processed at temperatures exceeding 200°C (328°F). At or above this temperature, degradation occurs and toxic chemicals are produced, notably 3,3-dichlorobenzidine. This chemical is related to benzidine, a potent human bladder cancer agent. It also is an experimental animal carcinogen, and regulated by OSHA as a cancer agent.

Any possible cause for bladder cancer is particularly relevant to artists since three studies show an elevated incidence of this disease among painters. It is known that diarylide pigments are used in some artist's paints and inks. They also may be used in heat-setting and ultraviolet-setting textile paints and printing inks and in oven-cured plastic products for jewelry and other crafts.

Clearly artists should insist that manufacturers identify their pigments by Color Index name and number, and that products requiring heat be tested for toxic emissions before they are put on the market. Diarylide pigments are listed below.

DIARYLIDE PIGMENTS

also called disazo or diazo pigments

COLOR INDEX NAME, C.I. NUMBER	OTHER NAMES*
C.I. Pigment Yellow 12, 21090**	Arylamide Yellow, Disazo yellow, Benzidine Yellow, Lithol Yellow, Permanent Yellow
" " Orange 13, 21110	Arylamide Orange, Benzidine Orange, Lithol Orange, Permanent Orange, Plastol Orange, Pyrazolone Orange
" " Yellow 14, 21095	Aylamide Yellow, Benzidine Yellow, Permanent Yellow, Plastol Yellow, Roma Yellow
" " Yellow 17, 21105	Arylamide Yellow, Benzidine Yellow Light Fast, Permanent Yellow, Roma Yellow
" " Orange 34, 21115	
" " Yellow 81, 21127	
" " Yellow 83, 21108	Roma Yellow, Isol Diaryl Yellow

* There are almost one hundred names for some of these pigments. The plethora of common names assigned pigments is a good reason to identify them by Color Index names and numbers, or CAS numbers.

** C.I.PY 12 also has a CAS Registration Number, 6358-85-6

BOOK MOLD SYMPTOMS REPORTED 100 YEARS AGO

(Source: Scientific American, June, 1890)

"Visitors to the British Museum frequently have a hard time getting `acclimated' to the place. An hour spent in the rooms invariably gives the first-time visitor a headache. This curious malady is said to arise from the peculiar odor created by the storage of so many books. You can get some idea of what this odor is by going to your bookcase, that has been closed for twenty-four hours, and opening one of the doors; immediately your olfactories will be greeted by the mustiest fragrance imaginable."

note: 100 years ago, books often were transported in damp, moldy ships holds. Hopefully, your bookcase will not smell like this.

==========

METHYLENE CHLORIDE USERS MUST REPORT TO CPSC

(55 FR 32282-3, August, 8)

The Consumer Product Safety Commission (CPSC) issued an order requiring all manufacturers, importers, packagers and private labelers of consumer products containing one percent or more of methylene chloride (dichloromethane) to report on the characteristics, labeling and marketing of these products.

The purpose of this call for information is to see if the decision to allow industry to "voluntarily" label methylene chloride-containing products with cancer warnings has been working. Copies of labels for each product and the other required data is to be submitted by September 7, 1990. Knowing failure to submit the required information subjects a person to a civil penalty of up to $2000 for each violation.

Some products likely to contain methylene chloride include paint strippers, adhesive removers, spray shoe polish, adhesives and glues (especially plastic adhesives), paint and lacquer thinners, water repellents, wood stains, varnishes, spray paints, cleaning fluids and degreasers, and more.

ACTS is particularly interested to see how well art, craft and theater materials manufacturers and importers respond to this order. We are aware of a number of products which are not properly labeled and whose Material Safety Data Sheets still do not mention the cancer risk from methylene chloride. ACTS would also like to hear from readers who are aware of any improperly labeled products.

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ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

October, 1990
Vol. 4, No. 10

ACTS FACTS SOURCES

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==========

FUNDING FOR HEALTH AND SAFETY CONFERENCES AVAILABLE

(55 FR 35464-5)

The Centers for Disease Control made about $ 200,000 in grants available for non-federal conferences promoting health. Many art hazards and theater hazards conferences would be eligible. The deadline for application is November 1, 1990. Obtain procedures, application forms, and other materials from Carole J. Tully, Grants Management Specialist, (404)842-6630.

==========

INFRARED RADIATION IN GLASS WORK STUDIED

(HETA 88-299-2028)

Art glassblowers, foundry workers, potters, and others who work with hot processes may want to obtain a National Institute for Occupational and Environmental Health (NIOSH) study of a small glassblowing factory. Published in March, 1990, the study contains data demonstrating glassblowers are exposed to high levels of infrared radiation (IR). Exposure to occurs primarily during two procedures; 1) when working in front of the furnace, and 2) when shaping the hot glass. Some of the workers were unaware of the risk because they wore colored glasses which were not properly protective against IR.

IR causes a number of eye problems including retinal damage and a special kind of cataract. In fact, cataract was identified in three workers. Twenty-one per cent of the workers surveyed felt that the work had affected their vision in some way.

The study also found other potential hazards including heat stress, respiratory problems, and ergonomic hazards. To combat these hazards, NIOSH lists 13 recommendations, many of which also are applicable to other kiln and furnace operations. The study also includes questionnaires for surveying symptoms and medical and work histories. These can be used to identify workers who are developing adverse health effects from their work.

A free copy can be obtained by asking for the Louie Glass Factory report (HETA 88-299-2028) from the NIOSH Publications Office, 4676 Columbia Parkway, Cincinnati, OH 45226 (513) 533-8287

==========

MERCURY IN BUILDING MATERIALS

(55 FR 37541-2)

Mercury biocides are being eliminated from interior paint because they present an unreasonable risk of adverse health effects (ACTS FACTS May, August, and September issues). Now these biocides also will be disallowed in joint compounds, adhesives, texturing products, acoustical plasters, and related materials used for interior building. Use of mercury is still allowed in these products and in paint if they are marketed for outdoor use.

Pesticide registrations for mercury compounds used for indoor purposes has been voluntarily withdrawn by the company making them (Cosan Chemical Corporation). The company requested the cancelation after weighing the cost of the research EPA required them to do to study their product's safety (or lack of it).

Existing stocks of the biocides still may be sold until June 27, 1991 provided they are stickered with warnings. Consumers can find out if specific brands of interior building products contain mercury by calling 1-800-858-7378.

==========

HAZARDS OF LASER PRINTERS AND COPIERS

In a letter to The New England Journal of Medicine (May 3), a Dr. Michael Hodgson of the University of Pittsburgh School of Medicine and two colleagues discussed the case of a man who reacted to laser printer. The 51-year-old man had worked at the same company for 21 years. When a laser printer was installed at his work station the man developed symptoms of nasal congestion, a burning sensation on his skin, headache, and other symptoms. The man had no history of asthma, allergies, hay fever or eczema. Testing showed the man suffered symptoms only after exposure to laser-printer products.

Similar reactions to indoor air pollution produced by printers and copiers are becoming commonplace. Some of the airborne chemicals implicated include:

--ozone;
--the toner's particles of carbon black;
--the toner's carrier, which are usually microscopic beads of steel, glass or silica;
--cadmium sulfide;
--zinc oxide; and
--some organic polymers (e.g. styrene butadiene) and their combustion products.

These pollutants may cause allergies, irritation of the respiratory tract, and other effects. Except for ozone, the pollutants are usually produced in very small amounts.

OZONE is created when electricity or ultraviolet radiation converts oxygen (O_2) in the air to ozone (O_3). Laser printers as well as other types of dry copiers all produce ozone because they rely on

the same basic process. In this process, light is reflected onto an electrically charged drum. The surface of the drum is photoconductive and changes its electrostatic charge wherever the light hits it. This creates the image which will then either attract or repel the toner. Copiers which use drums that are negatively charged create more ozone pollution than those using positively charged ones.

Ozone is a potent respiratory irritant. It also causes mutation in bacteria and is therefore suspected of having other chronic effects. Ozone's toxicity is the reason a very low Threshold Limit (TLV)* for workers' exposure has been set for ozone. The table below compares ozone's TLV with those of some other gases.

GAS	**TLVs IN PARTS PER MILLION (ppm)**
carbon dioxide	5000 ppm Time Weighted Average *
freons (most types)	1000 " " " "
ammonia	25 " " " "
sulfur dioxide	2 " " " "
formaldehyde	1 " " " "
phosgene (warfare gas)	.1 " " " "
ozone	**.1 ppm Ceiling (which means even less exposure is allowed than for phosgene above)***

* Threshold Limit Values (TLVs) are workplace air quality standards set by the American Conference of Governmental Industrial Hygienists. TLVs are designed to protect the majority of healthy adult workers from adverse effects. There are three types:

1. TLV-Time Weighted Averages, which are airborne concentrations averaged over the eight hour working day.
2. TLV-Short Term Exposure Limits, which are 15 minute average concentrations that should not be exceeded.
3. TLV-Ceiling, which are concentrations that should not be exceeded even for an instant. Ozone can be detected by most people at or near this limit.

CONTROL OF COPIER POLLUTANTS. It is possible for most people to work safely around these machines if the new indoor ventilation standards of the American Society of Heating, Refrigerating, and Air-conditioning Engineers are met. These standards require 20 cubic feet per minute of outside air per person. Unfortunately, many enclosed air-conditioned buildings recycle much of their air, causing pollution levels to rise. Never locate copiers in closets or small unvented spaces.

Purchase copiers from sales people who are familiar with these negative aspects of their products. Try to purchase copiers that operate with a positively charged drum. Obtain MSDSs on the toner and any other chemicals used with your machine. Some machines can be factory equipped with ozone "traps" or "filters." These are very limited in their ability to remove ozone and detailed data on their performance and maintenance should be obtained. Keep the machines well serviced, since poorly maintained copiers produce more ozone. And if the sharp, "after a storm" odor of ozone is clearly detectible, take steps to reduce your exposure.

ANOTHER EPOXY CHEMICAL FOUND HAZARDOUS

(55 FR 32970-1)

The National Toxicology Program (NTP) of the Public Health Service announced August 7 the availability of a two year cancer study of glycidol (2,3-epoxypropanol). Glycidol is a viscous liquid used as an additive in hydraulic fluids and as a diluent in some epoxy resins. It is structurally similar to ethylene oxide, a potent carcinogen.

The study showed clear evidence* of carcinogenic activity in all categories: males and females of both rats and mice. The cancers were dose-related (the higher the does the greater the number of cancers), and occurred in numerous different tissues in both species. Many animals with cancer were killed during the study in a moribund condition and virtually all (196/200) exposed rats died before the end of the study. Cancer causing substances of this potency obviously should be avoided.

Always obtain Material Safety Data Sheets on epoxy products and reject products containing glycidol. Other epoxy chemicals to avoid include dimethylaniline (DMA), the gycidyl ethers, the glycol ethers, and 2-nitropropane. There are many epoxy products which contain none of these chemicals.

Single copies of the glycidol study are available free. Ask for NTP Technical Report Series No. 374 (Toxicology and Carcinogenesis Studies of Glycidol) from NTP Public Information Office, MD B2-04, P.O. Box 12233, Research Triangle Park, NC 27709.

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* The NTP uses five categories of evidence of carcinogenic activity to summarize the strength of the evidence in each experiment: 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 experiments that because of major flaws cannot be evaluated (inadequate study).

==========

PHOTO BOOK BEING REVISED

Susan Shaw and I are hard at work updating her classic book, Overexposure: Health Hazards in Photography. We are asking readers for comments and suggestions, especially on waste disposal, historic silver processes, non-silver processes, photoprinting, photolithography, photosilkscreen, photoceramics, and photo conservation and restoration. We will send original and revised copy to those who wish to comment. Comments will be gratefully received and credited in the Forward. Monona Rossol

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ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

November, 1990
Vol. 4, No. 11

ACTS FACTS SOURCES

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ART MATERIALS LABELING LAW TO TAKE EFFECT THIS MONTH?

(Public Law 100-695, 15 U.S.C. sec. 1277)

The Consumer Product Safety Commission (CPSC) is authorized to begin enforcement of the Labeling of Hazardous Art Materials amendment to the Federal Hazardous Substances Act on November 19, 1990. This law incorporates a toxicity standard developed by the American Society for Testing and Materials called "ASTM D-4236. Enforcement of the law and its standard at this time, however, is unlikely.

On August 24, The Arts and Crafts Materials Institute (ACMI), speaking for itself and for two other industry associations wrote the CPSC asking them to delay enforcement for another year. Chief among their reasons is that the CPSC has not held all the hearings and published all the chronic hazard guidelines it had scheduled prior to enforcement.

ACMI also asked that the "appropriate telephone number" phrase in the law (which is interpreted to mean the manufacturer's telephone number) to be changed to advice to call a poison control center. (Both of these actions were predicted in ACTS FACTS, February 1898.)

On the other side of the argument, the US Public Interest Research Group wrote CPSC on October 19, urging them to begin enforcement now. Their reasons include:

1) According to industry groups, about 85 percent of the art and craft products already comply with the voluntary standard ASTM D-4236 which CPSC would enforce. The recalcitrant 15 percent have had two years to prepare and respond.

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

2) Failure of CPSC to complete the chronic hazard guidelines should not delay enforcement since the manufacturer's can comply with the existing standard with which the approximate 85 percent of products comply.

3) Consumers should be assured that products they buy either carry appropriate hazard warnings or that they comply with the ASTM standard. In this later case, the statement "conforms to ASTM D-4236" must be on the label. (At present, consumers have no way of knowing if products without warnings are safe or if they one of the 15 per cent which have not been evaluated.)

4) Consumers should have easy access to additional chronic hazard and precaution information through an "appropriate telephone number" printed on the label.

ACTS is interested in readers opinions on enforcement and on whether they would like to have a number on their product's label which could be contacted for chronic health hazard information. We have prepared a questionnaire which we are enclosing for those who wish to make their opinions known.

==========

NEW URETHANE CHEMICALS TO BE STUDIED

(55 FR 39779-85, Sept. 28)

After reading last month's ACTS FACTS articles on two-component urethane products, several readers noted that some of these products do not contain the OSHA-regulated isocyanates (toluene diioscyanate [TDI] and methylene bisphenyl isocyanate [MDI]. These products employ other, often more complex isocyantes. Although it is suspected that all the isocyanates cause serious and life-threatening toxic and allergic responses and perhaps cancer (see ACTS FACTS, October 1990), the lack of regulation leads some users to assume these urethane products are safer.

Now, EPA is designating 43 of these other isocyanates for preliminary assessment, health and safety data reporting and study by the Interagency Testing Committee. It will be some time before these studies are complete. Until then, ACTS suggests all isocyanates be used with local ventilation and air-supplied respiratory protection. Two component urethanes are used in sculpture, theater-crafts, and as sealants in asbestos abatement projects in schools and other locations.

==========

KOHLER COMPANY CITED BY OSHA

(BNA-OSHR, October 10, 1990, p. 849)

Kohler Company, a leading maker of ceramic bathroom fixtures, is known to ceramicists as a company which allows selected artists to use its Wisconsin facility for production of ceramic artwork. At present, Kohler is contesting a serious citation and a $10,300 penalty for 17 OSHA violations. It is also contesting a repeat citation and $18,800 penalty for 20 items.

==========

OSHA REOPENS HEARINGS ON TALC

(BNA-OSHR, October 10, 1990, p. 832)

Debate regarding the hazards of ceramic and industrial talc containing tremolite continues. Tremolite comes in two varieties: fibrous and non-fibrous (non-asbestiform). Although fibrous tremolite hazards are clearly comparable to those of other forms of fibrous asbestos, OSHA proposed to remove the non-asbestiform variety from regulation under the asbestos standard.

Now OSHA reopened hearings to accommodate testimony from the American Thoracic Society (ATS). The ATS report on tremolite concludes that non-asbestiform tremolite poses essentially the same health threat as asbestos. The hearings will be held on November 9, 1990 and will be open to the public.

==========

CARPET LAWSUIT DROPPED

(BNA-OSHR October 10, 1990 pp. 839,
and Special Supplement, p. S-5)

The Environmental Protection Agency (EPA) employee's union dropped their claim for injuries due to exposure to new carpet because, according to the court document, "Timely control of risk associated with certain carpeting and glues can be reached through the negotiation process now under way." The union had filed suit and initiated a petition to regulate some carpet emissions after workers in the EPA's headquarters in Washington complained of illnesses after new carpeting was installed.

The union's president, William Hirzy, also cited a study of carpet and textile workers showing excess deaths from cancer. Some of these cancer deaths were associated with a breakdown of workers' immune systems. This finding is of interest because dysfunctional immune systems are associated with several hypotheses about the causes of multiple chemical sensitivities.

The EPA is setting up special work spaces free of furnishings which "off-gas" chemicals for those agency employees who suffer health disorders that they believe are caused by contaminants from the Washington headquarters. These office spaces feature:

* work areas free of carpeting, drapery and wall coverings.
* metal or "old wooden" desks instead of desks made of composite materials.
* photocopying equipment located in a separate room vented to the outside of the building.
* fresh air ventilation provided at a rate of 20 cubic feet per minute per person.

Workspaces set up this way would be desirable for many workers.

==========

BOOK REVIEW: A SURVIVAL KIT FOR THE SECONDARY SCHOOL ART TEACHER

ACTS is always looking for books with good safe art projects to recommend. A Survival Kit for the Secondary School Art Teacher, by Helen D. Hume, published by the Center for Applied Research in Education, West Nyack, NY, sounded like just the thing. Its advertizing even mentioned "safety tips."

The Safety Tips section, however, turned out to be one short paragraph and a list of eight one-sentence suggestions. On the plus side, the section directs readers to Charles Qualley's fine book, "Safety in the Artroom" for additional information.

This might have been sufficient if the advice in the rest of the text was consistent with Qualley's book. For example, in her section on photography, the author suggests that teachers make darkrooms from closets, small storage rooms, or the art classroom itself. The only mention of ventilation for these locations consists of the phrase: "adequate ventilation will make the darkroom comfortable."

Qualley's book, on the other hand, makes it clear that special ventilation is necessary to protect students from the toxic gases and vapors released from photochemical baths. This special ventilation is not present in closets, storage rooms, and only rarely in art classrooms. And, as Qualley points out, designing and installing darkroom ventilation is not a job for the teacher, but requires experts.

Even Hume's "General Materials List" for photography fails to include splash goggles, gloves, and eye wash facilities--all of which Qualley, and the manufacturers of the photochemicals on Hume's supply list, consider essential.

There are many other examples of inadequate safety information or use of unnecessarily toxic chemicals especially in the sections on ceramics, oil painting, papier-mache, silkscreen, and intaglio. Many good projects are also in the book, but to identify them, readers will have to take the time to research the suggested processes and materials. - Editor

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ART MATERIALS LABELING QUESTIONNAIRE

Currently, labels on artist's materials legally must only warn users about products with "acute hazards" such as those which can burn the skin or eyes, or can poison people at low doses. Soon a new federal law will require labels to list a product's "chronic hazards." For example, chronic hazard labels will warn consumers about products that can cause cancer, have toxic effects on specific organ systems such as the heart or lungs, or can cause reproductive system damage.

Consumers naturally may have specific questions about these brief label warnings. In recognition of this need, the new law states that products bearing chronic hazard warnings also should include "the name and address of the producer or repackager of the art materials and an appropriate telephone number...." This form solicits your opinions about this "appropriate telephone number."

1. Are you in favor of having a number on the label that you could call for information about the product's chronic toxicity?
_____yes _____no _____no opinion

2. It would be acceptable to you if this number provides access to:
_____the producer (manufacturer) of your material
_____the seller or distributor of your material
_____a service that answers questions for the manufacturer/distributor
(choose one or more)

3. If the producer or repackager passes the cost of this service on to you, how much extra would you be willing to pay per $5.00 item purchased:

_____zero
_____ 1 - 2 cents
_____ 2 - 5 cents
_____ 5 - 10 cents
_____10 - 20 cents
_____more

4. Would you be willing to substitute the phrase "call your local poison control center" for an actual telephone number?
_____yes _____no _____no opinion.

5. I am one or more of the following:
_____ a consumer of art materials
_____ a repackager or importer of art materials
_____ a manufacturer of art materials
_____ a teacher who uses art materials
_____ other, please explain_____

Please return to: ACTS, 181 THOMPSON ST., #23, NEW YORK, NY 10012

ACTS

ARTS, CRAFTS AND THEATER SAFETY

ACTS FACTS

December, 1990
Vol. 4, No. 12

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.

ART MATERIALS LABELING LAW: UPDATE

Last month ACTS FACTS questioned whether enforcement of the Labeling of Hazardous Art Materials amendment to the Federal Hazardous Substances Act would begin on November 18th as mandated. We also reported on the Arts and Crafts Materials Institute's (ACMI) petition for a one year delay in enforcement.

On December 7, I discussed the matter with Charles Jacobsen, a Compliance Officer with the Consumer Product Safety Commission (CPSC). It seems that the decision to enforce is not their's to make, since the November deadline was imposed by Congress when the bill was signed. However, the CPSC will exercise options on enforcement procedures.

Jacobsen said they probably will advise the ACMI that a waiver of enforcement cannot be granted, but that the CPSC recognizes the difficulty some manufacturers may have had in obtaining information about the law or in getting their products assessed by a toxicologist in time. Jacobsen says that the CPSC intends to work with these manufacturers to help them to comply, rather than using enforcement options such as injunctions or seizing improperly labeled materials. They also are trying to locate sources of toxicological services other than those of the ACMI for smaller companies who cannot afford ACMI's program.

This would be an excellent time for art materials manufacturers who do not yet comply with American Society of Testing and Materials Standard D-4236 to get in touch with the CPSC in Washington, DC (301-492-6400), or the regional offices in San Francisco, Chicago or New York City to obtain help and information. The CPSC's press release and briefing package are already published and the toxicological guidelines will be available soon.

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EPA RESPONDS TO ACTS FACTS ARTICLE ON PCBs

(55 FR 21023-31, ACTS FACTS Vol 4, No, 7.)

The August issue of ACTS FACTS ran an item on McCrone Associate's authorization to continue to distribute Arochlor, a mixture of polychlorinated biphenyls (PCBs), to be used as a slide mounting medium in art and historical conservation laboratories. The article raised the issue of proper disposal of PCB-contaminated waste such as cotton wipes, solvent cleaning solutions, abrasive powder and wheels, or contaminated gloves and clothing.

The article and a letter were sent to EPA soliciting their opinion about disposal. On November 1, 1990, Tony Baney, Chief of EPA's Chemical Regulation Branch responded. Two paragraphs of his letter follow:

"The use authorization granted to McCrone pertains only to the use of PCBs as a microscopy mounting medium. PCBs that are not used in the actual mounting of the slides, such as excess PCBs or PCBs removed when preparing a microscope slide for preservation, are regulated for disposal. Therefore, items that come in contact with the PCB mounting medium, such as solvent wipes or abrasive wheels, must be disposed of in accordance with the PCB disposal regulations at Title 40 of the Code of Federal Regulations, Part 761.60 (generally a TSCA approved PCB incinerator or permitted chemical waste landfill). Under no circumstances should such PCBs, solvent wipes or materials in contact with PCBs from microscopy mounting medium, be disposed of in an unregulated fashion such as trash. Improper disposal of PCBs can result in penalties of up to $25,000 per day.

Facilities using PCBs as a microscopy mounting medium should establish procedures for capturing and controlling any excess PCBs used in mounting microscope slides. Such facilities should also maintain records detailing where and how the PCBs were used and disposed of. The PCB regulations specify recordkeeping in 40 CFR 761.180 which must be maintained for users and generators of PCB waste. Copies of the PCB regulations can be obtained from the TSCA Assistance Office (202-554-1404)."

Any facilities using Arochlor who are not already in compliance with these regulations should get in contact the TSCA Assistance Office as soon as possible.

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OSHA'S FINES TO RISE

One provision of the five-year deficit reduction package signed recently by President Bush provides for a sevenfold increase in the schedule of some OSHA penalties. For example, the maximum penalties for safety and health violations is raised from $1,000 to $7,000 per violation. In addition, the measure establishes a new minimum penalty of $5,000 for each willful violation and raises the allowable civil penalty for each willful or repeat violation from $10,000 to $70,000.

Within six months, the 23 states and two territories with comprehensive state OSHA plans also will be in a position to assess similar fines.

Among the other bills signed by the President is one which will increase OSHA's appropriation $19.6 million over fiscal 1990 appropriations.

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ETO TO REMAIN IN SPICES

(55 FR 35347-52)

The EPA denied a petition to revoke food additive tolerances for ethylene oxide (EtO). EtO will continue to be used as a fumigant to control microorganisms and insects in ground spices and other natural seasoning materials. The EPA considers EtO a carcinogen (class B_2-a probable human carcinogen), but considers the amount allowable in spices, 50 parts per million (ppm), negligible in terms of its health effects. The 50 ppm tolerance also applies to whole spices, black walnut meats and coconut meat.

In defense of its position, the EPA notes that the data demonstrating carcinogenicity in animals and humans is from exposure by inhalation, not by ingestion. They think EtO may be much less hazardous by this route.

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METHYL BROMIDE STUDY COMPLETE

The National Toxicology Program's (NTP) two-year study of methyl bromide showed it caused neurotoxic effects, but no cancer in mice by inhalation. The report also noted that the chemical is associated with 115 deaths and more than 800 systemic, skin, eye, and other injuries in exposed workers. Methyl bromide is widely used as a pesticide and fumigant. Some museum conservators also use it as a substitute for ethylene oxide (see above).

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C.I. DIRECT BLUE 15 STUDIED

The National Toxicology Program found clear evidence of carcinogenicity in a two-year study of Color Index (C.I.) Direct Blue 15 in mice. This dye was chosen because it is representative of a group of benzidine dyes derived from 3,3'-dimethoxybenzidine. Representatives of four other benzidine dye groups are also being studied. It is suspected that all will cause cancer.

C.I. Direct Blue 15 is used for silk, wool and other textiles, paper, leather, plastics, rubber, and biological staining. The color index lists 35 different names for the dye, many of which incorporate the words "sky blue." Dyers should always ask suppliers for the Color Index (C.I.) names of their dyes in order to identify and avoid all benzidine dyes. ACTS has a list of benzidine dyes available (send SASE).

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