

ACTS FACTS

THE MONTHLY NEWSLETTER FROM
ARTS, CRAFTS AND THEATER SAFETY (ACTS)

181 THOMPSON ST., # 23,

NEW YORK, NY 10012-2586

PHONE 212/777-0062

January 2002

Vol. 16, No. 01

ACTS wishes you a healthy, happy 2002

**BOARD of DIRECTORS: Monona Rossol, Susan Shaw, Eric Gertner,
Nina Yahr, Elizabeth Northrop, Diana Bryan, Tobi Zausner;
STAFF: John Fairlie, Sr.**

GRAVEYARD SHIFT WORKER'S BOSS FOUND NEGLIGENT IN VEHICLE ACCIDENT

BNA-OSHR, 31(46), 11/22/01, p. 1070

Statistics show that long hours and night work increase your risk of accidents. A Texas oil drilling contractor found out that juries also understand this fact. The contractor was held responsible for the off-duty negligence of an employee who fell asleep while driving home after working the graveyard shift. (*Escoto v. Nabors Drilling, Tex. Dist. Ct., No. 01-81, jury verdict 11/16/01*).

A jury for the 197th Texas District Court, ordered Nabors Drilling USA Inc., to pay \$5.95 million to the families of four people killed when a pickup truck driven by rig worker Roberto Ambriz, 19, collided with another vehicle on March 1998. Jurors found the defendant driver 57 percent responsible for the accident and the drilling company 43 percent responsible because it failed to adequately train workers about night work fatigue.

In the 24-hour period before the accident, the defendant driver had been awake for 20 hours, 12 of which were spent performing heavy labor to repair the rig. The drilling company provided sleeping quarters next to the rig, but fatigued workers usually are unable to sleep where there is loud noise from drilling operations.

This was the first trial of this kind to go to trial in Texas. It could have implications for other employers such as Film, TV and theater producers whose workers commonly work around the clock.

ADVICE ON HANDLING WTC DISASTER ARTIFACTS

A packet of information on how to handle materials contaminated with dust from the World Trade Center disaster was mailed to all New York area member of the American Institute for Conservation (AIC). The packet was a joint effort of the AIC Health and Safety Committee, ACTS, the Smithsonian Institution Office of Safety and Environmental Management and the Smithsonian Center for Materials Research and Education. For information on obtaining a copy of the packet, contact AIC at info@aic-faic.org.

DINOSAUR DIG WORKERS CATCH FUNGAL PNEUMONIA

MMWR, 50(45), 11/16/01, pp. 1011-13; 50(49), 12/14/01, pp. 1106-7; & 48(5), 2/12/99, pp. 98-100

The Centers for Disease Control and Prevention (CDC) reported a disease outbreak at Dinosaur National Monument in northeastern Utah. On June 18, 2001, under the direction of National Park Service (NPS) archaeologists, six student volunteers and two leaders began work at an archaeological site. Work included laying stone steps, building a retaining wall, and sifting dirt for artifacts. Peak dust exposure occurred on June 19, the day most sifting occurred. The workers did not wear masks.

Between June 29 and July 3, all eight team members and two NPS archaeologists who had worked at the site sought medical care at a local hospital emergency department for respiratory and systemic symptoms. All 10 persons showed diffuse pulmonary infiltrates by chest radiographs; eight were hospitalized with a pneumonia of unknown etiology which was later diagnosed as coccidioidomycosis.

A very high rate of infection was noted. All six students, both leaders and two archaeologists developed the disease. One ill person had only visited the worksite on June 19. Patients were treated with fluconazole and all recovered. NPS closed the site to all visitors and staff, and health officers alerted the public.

COCCIDIOIDOMYCOSIS is a fungal infection caused by inhalation of *Coccidioides immitis* fungus spores. *C. immitis* infections usually are asymptomatic and some resolve without antifungal treatment. However, severe lung disease or disseminated infection can develop in patients. Susceptibility is higher in immunocompromised persons, pregnant women, and persons of African or Asian descent.

C. immitis spores are known to be present in the arid soil of the southwestern United States, California, and parts of Central and South America. This was the first time coccidioidomycosis has been identified in northern Utah.

OTHER CASES. A similar point-source outbreak of coccidioidomycosis occurred in 1970 among archeology students in an area of northern California where *C. immitis* was not known to be endemic. This outbreak also caused a high rate of infection.

On December 4, 2001, CDC was notified by the United Kingdom Public Health Laboratory Service that a UK resident aged 72, who had attended a model airplane flying contest in Lost Hills, California, had contracted coccidioidomycosis.

OTHER FUNGI. There are many other soil-borne fungi which can cause disease. One such case (*ACTS FACTS*, March, 1999) involved two healthy adults who were working for the City of Boulder Open Space program on a prairie dog relocation. These workers developed blastomycosis, a fungal pneumonia, from inhaling spores from *B. Dermatitidis*, a fungus found in soil and rotting wood. Both workers survived after hospital treatment followed by six months of oral antifungal medication. After this, the employer instituted a respiratory protection program and training.

PRECAUTIONS. In August, state and local health departments recommended that workers water down soil and wear NIOSH-approved N95 respirators for any further work at the site. It is not clear from the CDC's report whether these precautions were followed since another worker contracted coccidioidomycosis during four days in September when four employees completed work on the wall and steps.

The site reopened on September 28. NPS guidelines advise visitors to stay on maintained trails to avoid raising dust or stepping on soil. Visitors' risk for infection should be minimal, however, precautions are being considered including warnings to avoid the site when wind conditions are conducive to dust exposure.

COMMENT. It is no secret: if you inhale dirt, you also inhale toxic minerals such as silica and microorganisms. Yet managers of many archeology, paleontology, and environmental projects still do not provide respiratory protection for workers. This is especially unfair if students and volunteers are put at risk.

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N-HEXANE, BACK AGAIN

MMWR, 50(45),11/16/01, pp. 1011-1013

The *Mortality and Morbidity Weekly Report* from the Centers for Disease Control and Prevention presented a case of peripheral neuropathy (nerve damage to the arms and legs) in a worker in an California automotive repair facility. The patient was a 24 year-old man who had been using a spray can brake cleaner for 22 months at his job. He used from one to nine cans per day.

The brake cleaner contained 50%-60% hexane which in turn was composed of 20%-80% n-hexane. The man ceased using the product, but three years later he continues to have numbness and tingling in the extremities. Follow up investigations found two other California brake technicians have this disease from similar products.

HISTORY. The April 2000 *ACTS FACTS* issue carried an obituary of Bill Bowerman who died at age 88. Bowerman, a co-founder of Nike®, developed peripheral neuropathy in the early 1970s by experimenting with a liquid rubber material which he poured onto his wife's waffle iron to make shoe soles. Throughout the rest of his long life, he walked with a limp and wore a leg brace.

Throughout the 1970s and 1980s there were a number of lawsuits against manufacturers of hexane-containing products. Two such suits brought by artists. As a result, we rarely saw hexane on product labels in the late 1980s and early 1990s.

In the middle 1990s, hexane began reappearing as an ingredient in many products. *ACTS* predicted there would be more cases of the disease it causes. Unfortunately, we were right. In response, *ACTS* has produced a data sheet on Hexane. Readers can send a self-addressed, stamped envelop for a free copy.

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MAN DIES FROM INHALING FUMES FROM ORANGE HAIR SPRAY

An exact quote from: *Winston-Salem Journal*, Tuesday, November 13, 2001, p A4
MORRISTOWN, Tenn. -- A man found spray-painted orange from head to knees died yesterday from inhaling paint fumes, and his death has been ruled a homicide, police said. Terry Pease, 45, was apparently disrobed and sprayed with "Halloween-type" hair coloring before collapsing at his cousin's house Nov. 2, Morristown detective Rick Harmon said. No one has been arrested. Pease left his cousin's house with two women and a man, then returned hours later intoxicated and painted orange, Harmon said.

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DISASTER UPDATE

- On December 20, fire officials declared, that except for some "hot spots," the fires at ground zero are essentially out. Area residents say that air quality is better but they still smell the typical "ground zero" smoke. And dust continues to cause problems.

- Tenants in a disaster area building in which I consulted are demanding that the dust be cleaned up by asbestos abatement methods whether or not asbestos has been abated to nondetectable levels. They feel this is proper because fiber glass in the range of 10-20% have been found in the dust.

- Preliminary results from an ongoing medical survey indicate that at least 25 percent of the firefighters working in rescue and recovery at ground zero have shown early signs of asthma. The preliminary pulmonary test results were reported in the opening session of a NIOSH conference on December 10. The primary reason is assumed to be inadequate respiratory protection. (*Bureau of National Affairs-OSHR*, 31(36), 9/13/01, pp. 841-842.)

- In order to assess the precautions which should be taken in recovery of museum artifacts from the WTC wreckage, representative from various museums and I spent half a day observing procedures at Fresh Kills landfill where detectives are sifting WTC refuse for evidence. (See second story on Page 1.) The odorous emissions from the dump itself combined with the dust from the WTC material makes a very hazardous environment for the detectives working there.

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ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many technical, health, art, and theater publications. Call for information about sources.

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DISABLED DANCER GETS SETTLEMENT

The April, 2001 issue of *ACTS FACTS* reported that a 32 year-old dancer had suffered brain damage while dancing in a dress rehearsal for a 1998 Christmas Spectacular. This tragedy left the dancer permanently blind in the left halves of both eyes, with a lack of sensation in her left arm, leg, and side of her face, and permanent cognitive impairments.

The dancer alleges that the injuries that ended her career were caused by a stroke induced by inhalation of toxic solvent vapors from a glue called Barge Cement. The glue was applied inside the head portion of the animal costume she wore. Two days before the rehearsal, the costumer fitting the dancer determined that the helmet inside the head should be repositioned. This alteration was done by gluing strips of foam into the head with Barge Cement which contains toluene, petroleum distillates and ethyl acetate. At issue was how soon she donned the costume after the glue was applied.

Another concern was that the animal head had essentially no openings through which air could freely enter. Instead there was a muzzle area made of quarter inch foam through which air filtered.

The case has now been settled. Both the amounts and the names of the defendants contributing to the settlement are confidential. *ACTS* deplors gag-ordered settlements like this. Gag orders allow defendants to avoid publicly acknowledging any responsibility and the suit does not serve as a warning to others engaged in similar practices that their behavior can be costly.

ACTS was especially interested in this case because it raised a number of questions that performers, costumers, production companies, and manufacturers of toxic products should address:

- Are costume workers' employers providing the required OSHA hazard communication program and training to ensure that costumers and dressers understand the hazards of the materials they use in order to protect themselves and their clients?
- Are performers' employers providing the required OSHA hazard communication training to inform dancers, actors, and other performers about potential hazards from costumes, sets, and other production elements?
- How do we insure that glues and other products containing volatile components used in costuming have completely outgassed (released all their vapors) and are safe?

- How do costumers determine how much air an athletic performer like a dancer needs to function at their best and safely? Just as medical certification is required before workers can be fitted for respirators and there are restrictions on doing heavy labor while wearing a respirator, so should there be a method for assessing various performer's conditions and determining the degree to which costumes can safely restrict access to air.
- What written programs, directives, and enforcement policies should be drafted to ensure that safe practices are in place?

Groups like USITT (United States Institute for Theater Technology) and ESTA (Entertainment Services and Technology Association) should begin to address these questions and develop professional policies and standards of practice for costume safety.

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TEA KETTLE RECALL

CPSC Press Release # 02-046, November 27, 2001

The US Consumer Product Safety Commission (CPSC) and Ceraflame Incorporated of New York, NY, are recalling about 3,000 ceramic tea kettles. The kettles can break or burst during use, spilling hot water. Ceraflame has received six reports of tea kettles breaking, though no injuries have been reported.

The kettles are sold nationwide through Gourmet stores and speciality catalogs for between \$60 and \$70. They are glazed black with a wooden handle and have the words "Ceraflame" and "Made in Brazil" stamped on the bottom. Consumers can return the kettles to the store where purchased for a refund or free replacement. To be sure your kettle is one that has been recalled, you can contact Ceraflame at 888/679-5060 between 9am and 5pm.

This story is a "heads up" to potters who make flameware (for use on stove burners) or teapots (to be filled with boiling water). If these items fail, the customer can demand either replacement of the item or a refund. Potters also can be held liable if injuries or property damage are caused when the pot breaks. Potters making foodware need insurance to cover such accidents.

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THIRD EDITION OF THE ARTIST'S GUIDE OUT

The third edition of the *Artist's Complete Health and Safety Guide* by Monona Rossol is now available. The new edition is 60 pages longer (405 pages) than the second edition, but the price is the same. It can be ordered for \$19.95 plus \$5.00 for shipping from Allworth Press or by credit card at 800/491-2808.

The new, updated edition covers all the new applicable OSHA regulations, data on more chemicals including pigments and solvents, more information on ventilation, studio planning, respiratory protection, protective equipment, and individual media such as papermaking, smithing, certain printmaking techniques. There is also a new chapter on reproductive hazards.

ARSENIC IN WATER DEBATE: WILL IT EVER END?

Editorial

June, 2000. The Environmental Protection Agency (EPA) proposed lowering the maximum contaminant level (MCL) for arsenic in drinking water from 50 parts per billion (ppb) to 5 ppb. Research supporting the rule showed it would reduce skin and circulatory system damage and cancer. The rule was opened to public comment.

January, 2001. In response to public comment, EPA published the final rule lowering the MCL to only 10 ppb and set the date for compliance at the year 2006 in order to accommodate those communities who need time to develop systems to purify their water.

March, 2001. The Bush Administration used for the first time ever a little-known piece of 1996 legislation called the Congressional Review Act to overturn of a number of rules including the Arsenic in Water standard.

Bush claimed that the arsenic in drinking water rule was rushed through without scientific evidence. Yet the 10 ppb level is currently recommended by the World Health Organization, the European Union, and the National Research Council, a part of our own National Academy of Sciences. The standard was based on data from actual exposed human populations. There is more human data for this standard than for almost any other water quality standard. But Bush ordered yet another review of the data by the National Research Council.

October, 2001. The EPA's home page announced that the new arsenic standard for drinking water will indeed be 10 ppb. What had happened is that the National Research Council's additional review demanded by the administration indicated the level ought to be even lower than 10 ppb! The NRC reported that people consuming water with even 3 ppb arsenic have about a 1 in 1,000 risk of developing bladder or lung cancer during a lifetime of drinking about 1 liter of water per day. At 10 ppb, the risk is more than 3 in 1,000. This is an extraordinarily high and absolutely unacceptable level of risk for a water standard.

January, 2002. White House officials selected 23 final rules for review and possible change on the basis of industry and public complaints that they will cost too much. You guessed it: the Arsenic in Water Standard is one of these rules.

COMMENT: Large amounts of time and money are being expended to delay or rescind this rule. And there are similar scenarios for other rules including EPA's water quality standards for lakes and streams, EPA's requirements for old power plants to meet new air emissions standards, OSHA's Ergonomics Standard, and more. The next time you hear two-party wrangling blamed for holding up progress in Washington, you might consider that the administration is holding things up rather effectively all by itself.

SOURCES: ACTS FACTS, July 2000, Mar 2001, Apr 2001, & Nov 2001; 65 FR 38887-38983, June 22, 2000; 66 FR 6975-7066, Jan 22, 2001; <http://www.epa.gov/>; C&EN, ACS, September 17, 2001, p. 12 & January 14, 2002, p. 7.
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JEWELERS: DON'T MAIL GEMS

C&EN, December 24, 2001, p. 64

According to the Gemological Institute of America (GIA), Carlsbad, CA, the irradiation process used by the U.S. Postal Service to kill anthrax spores produces "dramatic changes" in the color of gems. A GIA study showed that irradiation caused white cultured pearls to turn grey, pale blue sapphires to turn deep orange, and pink kunzites to turn green. Diamonds showed no obvious color change.

GIA studied the problem with SureBeam, a company that makes the type of equipment used by the Postal Service. The machines emit high-energy electron beams developed originally to kill micro-organisms in food. However, this same type of radiation has been used for years to intentionally change the color of certain gems.

Individuals and jewelers should discuss this problem with their post office before selecting a shipping method.

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DIOXIN IS "KNOWN" HUMAN CARCINOGEN

BNA-OSHR, 31(46), 11/22/01, p. 1070

In May, 2000, the US Department of Health and Human Service's National Toxicology Program upgraded dioxin from a "reasonably anticipated" human carcinogen to a "known" human carcinogen. In response, restaurant owner Jim J. Tozzi, other members of a restaurant association, and a manufacturer of medical products that release dioxins when incinerated, pooled their assets and sued HHS claiming that the listing of dioxin was arbitrary and capricious.

On November 23, 2001, the U.S. Court of Appeals for the District of Columbia Circuit affirmed a lower-court decision that the classification was not arbitrary or capricious (*Tozzi v. HHS*, D.C. Cir., No. 00-5364, 11/23/01). Although the petitioners failed to block the dioxin redesignation, the ruling was precedent-setting because it affirms that any entity can challenge government decisions on health issues. We can expect that various health agencies budgets will be sapped by more business and industrial legal challenges.

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ORCHESTRA PIT PITFALLS

NY Times, Anthony Tommiasini, "War and Peace" Opens: Mishap Raises Concerns, February 18, 2002 & letter to the Company, undated, Joseph Volpe, Metropolitan Opera General Manager

The Metropolitan Opera's premier production of Prokofiev's *War and Peace* opened February 16. Its huge cast includes 52 singers, 120 choristers, 41 dancers, 227 supernumeraries (Supers), a horse, a dog and a goat. *NY Times* critic, Anthony Tommiasini, noted in his review, "It was hard to watch the stage without worrying that someone was going to fall into the orchestra pit. Sure enough, with about six minutes left in the final scene, that's what happened."

One of the supers portraying a soldier fleeing Moscow disappeared into the pit. The conductor stopped the show so stage managers could make sure the actor was uninjured. The opera resumed. At curtain calls, the Met's General Manager, Joseph Volpe, appeared on stage with the super. He told the audience that "our retreating French grenadier lost his way in the snowstorm" but he is fine.

AFTER THE FALL. The *NY Times* account says that the super "was caught by a safety net erected for the production which most people in the audience could not see." Nevertheless, the critic asked:

How can you be swept away by the operatic drama when you are worried about the singers' safety? When Mr. Gergiev resumed the performance after the fall, those six or so minutes of music were nerve-wracking to watch. At one point when three little girls walked toward the stage rim and sat in a circle amid the celebrating Russian throngs, you sensed the whole audience getting fearful.

THE MET RESPONDS. The next day, General Manager Volpe wrote a letter to his Company which begins, "Some misinformed media reports have raised concerns about the safety of our *War & Peace* set." Volpe said that the Super lost sight of where he was going, veered downstage, turned as he was about to go off "the edge of the stage and jumped down into the pit. He landed on his feet and was uninjured." Volpe assures everyone that they have now "installed a broader net below the lip of the stage which will be present for all remaining performances." So it seems that a net suitable for catching actors was not in place until after the Super fell.

INHERENT HAZARDS. The General Manager's letter contains two other contradictory statements. These are:

- * *All of us who are involved in opera production know that a stage set is not inherently hazardous.*
- * *It [the accident] was something that could have occurred in any opera with any set to an inexperienced young actor....*

But a workforce of inexperienced young actors and children combined with orchestra pits deep enough to injure or kill those who fall into them is a perfect description of an "inherent hazard."

Even experienced adults are prohibited from approaching any potential fall of four feet or more under the Occupational Safety and Health Administration (OSHA) regulations unless they are wearing fall protection! OSHA grudgingly exempts the lip of a stage from guardrail requirements because it would interfere with sight lines,* but the potential fall into the pit is still a recognized hazard. This hazard is exacerbated by bright lights, blackouts for scene changes, special effect fogs that obscure vision, noise, confusion, opening night excitement, and more.

The OSHA rule also applies to other potential fall hazards on stages. Our October 2001 *ACTS FACTS* reported that the State of California, Division of Occupational Safety and Health (CalOSHA) cited the San Francisco Opera for having "failed to provide guardrails on the elevated platform located in the Zellerback Auditorium used by chorus employees during rehearsals of "Aida".

ACCIDENTS. Not only young actors are at risk. In 1995, a moment's lapse in concentration caused a union stage hand with 25 years experience to fall into a pit at Radio City Music Hall in New York. He is now a quadriplegic. Also in 1995, a worker at the Atlanta Civic Center Theater fell into the pit and died. I am currently retained as an expert in two lawsuits involving pit falls. In one of these cases, a nine year old boy was injured. He has been in a coma for over a year. In the other case, the father of a student who was helping to build scenery for a high school production was seriously injured.

RECOMMENDATIONS. As long as cast and crew are composed of fallible human beings, we must expect that there will be pit fall accidents. It is common sense to install nets during performances and to use temporary railing during rehearsals or whenever stages are used by children, students, or amateurs. Other safety measures include assigning upstage crossovers and positioning (blocking) action away from the lip of the stage, traps, or other hazards.

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* OSHA's view of theater fall protection requirements which can be seen in a January 28, 1997 letter of interpretation entitled "Fall protection for the entertainment industry under the OSHA Act of 1970." In this letter OSHA explains that the lip of the stage does not need to be guarded, but that the fall protection regulations apply to all other areas. See the full letter at:

http://www.osha-slc.gov/OshDoc/Interp_data/119970128.html

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OOPS: NEW ARTIST'S GUIDE PRICE ERROR

In last month's issue we announced that the third edition of the *Artist's Complete Health and Safety Guide* was out and that the catalog price was still \$19.95. Actually the price is \$24.95 plus \$5.00 postage. Allworth apologizes for having the wrong price in their catalog. And I apologize for not looking at the book's back page where the correct price is listed. Monona Rossol, Editor

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CHILDREN'S CANDLE KIT & BOTANICAL CANDLES RECALLED

CPSC Press Releases # 02-089 & # 02-090, January 24, 2002

In cooperation with the US Consumer Product Safety Commission (CPSC), Value City and Schottenstein stores, of Columbus, Ohio, are voluntarily recalling about 2,300 children's gel candle kits. When burned, the gel candle can melt the plastic candleholders included with the kit, posing a fire hazard to consumers.

CPSC has received two reports of consumers claiming the plastic candleholder melted and started a fire. One report involved substantial damage to the consumer's home, and a consumer reportedly suffered burns to his hands and feet. The other report involved minor damage to furniture.

The Gel Candles kit includes four bags of gel chips in bright colors, wicks, glitter, two glass holders, and two plastic candleholders. The candleholders are in the shapes of a bumblebee and a dragonfly, or a tulip and a daisy. The gel is scented in fruit flavors. The label says the kits are for "AGES 8 AND OLDER."

Also voluntarily recalled by Value City and Schottenstein stores, are about 6,400 botanical candles, which contain dried flowers. When burned, the dried flowers in the candle can catch on fire, posing fire and burn hazards to consumers. The candles are made of uncolored wax and have dried yellow, purple and brown flowers in the outer layer. The candles are either square or round, and are about 4-inches high by 4-inches wide. Further information on the recalled products is at:

<http://www.cpsc.gov/cpsc/pub/prerel/prhtml02/02089.html> and [02090.html](http://www.cpsc.gov/cpsc/pub/prerel/prhtml02/02090.html).

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PRESSURE WASHER RECALLED

CPSC Press Release # 02-086, January 23, 2002

In cooperation with the US Consumer Product Safety Commission (CPSC), MCM International of Eden Prairie, MN, is voluntarily recalling about 50,000 Black Cat™ electric pressure washers. MCM imported the washers from a manufacturer in China who installed counterfeit ground fault circuit interrupter (GFCI) plugs on some of the units. All of the plugs are labeled "WELLONG"; however, the pressure washers with counterfeit "WELLONG" GFCI plugs appear virtually identical to those with genuine "WELLONG" GFCIs. It requires professional inspection to identify the counterfeit GFCIs.

Pressure washers are commonly used by paint strippers and building restoration workers. Pressure washers were used to decontaminate the car I rode in as it left the Staten Island landfill where I helped local museums set protocol for removing World Trade Center dust from the twisted beams, plane parts and burned fire engines selected as artifacts. Further information on the recalled washers is at <http://www.cpsc.gov/cpsc/pub/prerel/prhtml02/02086.html>

This recall is disturbing since GFCIs are devices designed to protect consumers against shock or electrocution. The counterfeit GFCIs were only found on pressure washers, but it is likely that they will turn up on other items. ACTS also is concerned that so many of the recalled products are made in China.

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FAULTY FIGURING FOR FRAUDULENT FOG EFFECTS

SF Chronicle, 3/1/02, Foggy reasoning behind using fraudulent fog, Rob Morse
The *San Francisco Chronicle* reveals that the San Francisco Opera's management agreed to let union singers limit their exposure to fog chemicals but decided instead to expose children's choruses!

Coals to Newcastle, fog to San Francisco. The San Francisco Opera and the performers' union recently agreed to limit the use of artificial fog, which has been making many singers sick. They agreed to use it for only two productions next fall, including "Hansel and Gretel," which doesn't have a union chorus.

Instead, the fog-like clouds will be inhaled by the young throats of the San Francisco Boys Chorus and Girls Chorus. If the stuff is bad, why use it at all? You have to wonder why San Franciscans would be impressed by fake fog.

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FASHION DESIGNER DIES FROM LATEX ALLERGY

The Daily Telegraph, United Kingdom, Friday June 9, 2000 p. 5

A clipping from *The Daily Telegraph* was brought to our attention. It contains an item which should provide warning to users of natural rubber latex cosmetic products such as eye lash adhesive, rubber cements and glues, and latex special effects makeup.

A fashion designer died within an hour when she suffered an allergic reaction to glue that she had used to attach hair extensions, an inquest heard yesterday.

Within minutes of applying the American Super Hair bonding glue, Nicola Faulkner, 28, complained that her scalp was itching intensely. Her eyes, lips, tongue became swollen and a rash spread over her body as she reacted to the latex in the glue. By the time an ambulance arrived, her lungs had collapsed and pockets of air were bubbling under her skin.

Miss Faulkner...was pronounced dead at hospital an hour later on March 12. Southwark Coroner's Court heard she had used the glue once before without any problems. A pathologist from University Hospital Lewisham told the inquest that Miss Faulkner died from anaphylactic shock due to a latex reaction.

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April 2002

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Vol. 16, No. 04

PASTEL HAZARDS: AN INTERIM REPORT

SOURCES: *The Artist's Magazine*, 5/01, pp. 66-67; 8/01, pp. 6 & 10; 2/02, pp. 57-62; www.acminet.org (pastel report, Dr. Woodhall Stopford), "Critical Concerns about a Duke University Medical Center Risk Assessment of Respirable Dust from Pastels, Brian C. Lee, PhD DABT.

THE PROBLEM. In the May, 2001 issue of *The Artist's Magazine*, I answered a technical question about pastels. I explained that pastel dust contains: 1) respirable dust whose particles are small enough to get deep into the lungs' air sacs (alveoli) where they may remain indefinitely; and 2) inhalable dust which contains respirable dust plus larger dust particles which are deposited in the upper respiratory system where much of it is raised on the lungs' mucous and swallowed. Since pastels employ toxic pigments, I said that they should not be used in the home. I also discussed precautions for studio artists including using a HEPA vacuum.

The following August, the magazine published a rebuttal letter from Deborah Fanning of the Arts & Creative Materials Institute, a trade association whose consulting toxicologist certifies its members art products as either "nontoxic" or with warnings considered adequate. In her letter, Ms. Fanning claimed that a study done by their toxicologist, Dr. Woodhall Stopford from Duke Medical Center, showed that no significant amounts of respirable dust were produced during drawing activities for six chalks and soft pastels vacuumed with a non-HEPA vacuum cleaner. She said that this study "confirms the original toxicological evaluations of almost all of the pastels in its certification program as nontoxic."

Then in February, 2002, the magazine published a 6-page section on pastels. Safety was addressed only by two pictures: 1) one showing a slanted easel with a chalk tray into which dust can fall; and 2) a picture titled "Traditional Tools" which showed a nontoxic dust mask and a handheld Dustbuster® vacuum. Clearly, these precautions are not adequate and ACTS decided to take action. In fact, Dr. Stopford tested a similar vacuum and said it re-suspended 75% of respirable-sized particles as well as much of the large particles.

STUDY PEER REVIEWED. ACTS asked Dr. Brian C. Lee, a consulting toxicologist who worked many years for the Consumer Product Safety Commission, to review Dr. Stopford's study. In his review, Dr. Lee concluded that his critical concerns "cast uncertainty on the general applicability" of the study. And that "[f]urther data and evaluation are recommended before disregarding the need for safe practices and equipment for pastel drawing by consumer and professional artists." (Write to ACTS for a copy of the review.)

In an e-mail, Dr. Stopford now agrees that "...a more sophisticated model to represent exposures during pastel and chalk drawing is in order...." Such a study is being planned by Dr. Stopford.

THE NEW STUDY. In order to properly address the risks, any new study of pastels should consider a number of factors.

1. Exposure must be modeled to consider the individual and combined effects of the roughly 100 different pigments and the mediums (base substances) which are in most manufacturers' lines of pastels.
2. Cadmium exposure must be considered because there are still pastels available in the U.S. that contain cadmium.
3. Lead must be considered. Although lead pigments reportedly are not used in US pastels, risks from exposure to lead-contaminated pigments such as titanium and zinc whites should be assessed.
4. Unlike the first study, the new one should consider soft pastels separately from chalks since they generate more dust than chalks.
5. Unlike the first study, the new study must consider the contribution from both respirable and inhalable dust exposures.
6. The study should determine if exposures to any substances in pastels exceed the safety limits of California's Proposition 65. Dr. Stopford's study assures consumers that Prop 65 standards are not exceeded. But Dr. Lee's review recalculates exposures from Dr. Stopford's data and shows the limits may be exceeded in certain instances, especially if inhalable dust exposures are included.
7. The health effects from adding many small particles to the home environment should be considered since an association has been established between small particles (2.5 microns in diameter and smaller) and heart problems, strokes, and respiratory problems.
8. Exposures should be evaluated during traditional pastel methods such as smoothing with the fingers and palms of the hands, blowing off the dust, spraying with fixative while working, and the like.
9. The risks should be assessed for pregnant women and children living in homes where pastels are used for years.
10. Exposures should be evaluated during clean up with various vacuums including the Dustbuster.® The difficulty of cleaning methods on carpets in homes also should be considered.
11. The pastel study should be submitted to an industrial hygiene, environmental, or toxicology journal or some other peer review.

IMMEDIATE ACTIONS. ACTS believes that ACMI and *The Artist's Magazine* should alert consumers to the fact that Dr. Stopford now agrees that a new study should be done and that the Dustbuster® should not be used with pastels. And until more is known, ACMI and *The Artist's Magazine* should encourage artists to use pastels only in appropriate studio environments with HEPA vacuums, ventilation, and other precautions appropriate for working with toxic dusts.

ACTS expects that the new study will make it clear that bringing pastels or any other products that release respirable and inhalable dusts containing toxic metals and organic pigments into a home with children and other high risk individuals violates both safety standards and plain old common sense.

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OPERA SINGER WINS BATTLE OVER FOG AND SMOKE ISSUES

Editorial

In an e-mail Arbitration Announcement on March 23, 2002, Officials of the American Guild of Musical Artists (AGMA) said:

In May 2001, SFO [San Francisco Opera] effectively terminated Pamela Dale after a 15-year career as a tenured chorister in retaliation for her tireless and ultimately effective advocacy for a safer workplace and against the harmful use of theatrical smoke and fog products in the War memorial Opera House. Incredibly SFO still refuses to compensate her for the tens of thousands of dollars in wages that have been wrongfully kept from her. For her efforts to expose the unsafe conditions at SFO related to the use of theatrical smoke and fog products, SFO has in effect destroyed her career and brought her to the brink of financial ruin, and attempted to silence other AGMA artists who share Pamela's concerns for a safe workplace.

BACKGROUND. Several years ago, Pamela Dale and her doctors agreed that exposure to fog, fire, and other special effects used at the Opera caused her to develop asthma. She fought to have special effects eliminated from productions. She also complained to the California Occupational Safety and Health Administration and they cited the Opera for several safety violations. She was terminated and her financial losses burgeoned, but she fought on. Then on March 26, AGMA announced:

Your union is extremely pleased to announce a very favorable resolution achieved at today's arbitration regarding SFO's effective termination of Pamela Dale. While the exact terms of the settlement remain confidential, please know Pamela will return to work in April 2002 with the rest of the SFO chorus and she will be compensated for her significant financial losses since last May when she was separated from employment.

As many of you know, Pamela's extraordinary advocacy for a safe and healthy workplace at SFO was often thankless and always at great personal sacrifice. We at AGMA extend our most sincere thanks to Pamela for the education she provided us on this important issue, and also for her example of dogged perseverance on behalf of a noble principle and on behalf of her fellow AGMA artists.

Without Pamela's unwavering dedication, any progress on the issue of smoke and fog effects at SFO would likely have been impossible. When you see Pamela back at work, please welcome her and thank her for always expecting and insisting SFO do the right thing by its AGMA artists, other employees and the public.

Pamela's example is one of great moral weight, and in the end we feel her personal integrity and the sincerity of her convictions are directly responsible for this great victory. If today SFO is a safer place, and we at AGMA believe it is, we all owe Pamela a debt of gratitude.

Sincerely yours,

Mark Mitchell, Western Executive Administrator
Nora Heiber, Area Representative
American Guild of Musical Artists, AFL-CIO

LESSONS. A full description of the details of this long and involved dispute is not possible in a short newsletter article. However, there are several points that stand out as especially important for those performers pursuing similar actions.

1. Good medical testimony is essential. Pamela Dale had two doctors reports stating clearly that her physical problems were related to the special effects.

2. Pamela Dale endured two respiratory challenge tests, one with a fog material. These tests are not without risk, but they demonstrate causality.

3. On her two challenge tests, Ms. Dale showed loss of vital lung capacities of 16% and 22%, yet her total lung capacity was still in the "normal" range. In this case, reduction in lung capacity was sufficient evidence because "normal" is not enough capacity for a trained opera singer to function at performance level.

4. The fact that there are a few studies of performers that did not find a clear association between asthma and theatrical fogs does not diminish the fact that individual performers may develop asthma. Cases of adult onset and/or worsening of asthma from fog have been established by this and several other legal actions.

5. The most important factor in winning these cases is the intelligence and perseverance of the complainant. Pamela Dale studied every medical and legal document until she understood it. She kept up dialogues with her peers and her union. She contacted governmental agencies and consulted health experts all over the country. And when attorneys did not live up to her standards, she learned how to file her own suits, including one in a federal court! In the process, she annoyed and dismayed those of her contacts who could not understand that she wanted nothing less than justice. Today I am proud to consider Pamela Dale a friend.

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ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many technical, health, art, and theater publications. Call for information about sources.
Editor: Monona Rossol; Research: Tobi Zausner, Nina Yahr, Diana Bryan, Sharon Campbell, Robert Pearl; Staff: John Fairlie, OFS.

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CINEMATOGRAPHER WINS WORKERS' COMP CASE

Camera operator Carol Wetovich, Cinematographers, Local 600, International Alliance of Theatrical Stage Employees, was exposed August 19, 1998, at the Chelsea Piers Studios in New York City during the filming of the sitcom, *Spin City*, to clouds of dust used as a special effect. The dust was called "fullers earth." Shortly after exposure, Ms. Wetovich was treated in an Emergency Room for chest pains and respiratory distress. A CAT scan done early in her treatment showed fibrotic lung damage. She also developed asthma. Ms. Wetovich filed for Workers' Compensation.(1)

WHAT IS FULLERS EARTH? Historically, a "fuller" was a man who filled oil tanks and "fullers earth" was any powdered mineral that could be used to absorb and dry up small oil spills. Some fullers earth minerals include bentonite, diatomite, and attapulgite. In Ms. Wetovich's case, the mineral was attapulgite. The material safety data sheet (MSDS) on this fullers earth lists two hazardous substances: silica and attapulgite itself.(2)

SILICA. The MSDS only provides an estimate of silica content ranging between 0 to 10%. This is due to the fact that attapulgite mineral deposits are not uniform in composition. The supplier actually does not know the silica content in a particular batch. Since any dust containing more than 1% free silica is considered highly toxic, this MSDS triggers the Occupational Safety and Health Administration (OSHA) requirement to monitor workers' exposures to ensure that either their exposure to airborne silica is below the permissible exposure limit or that respiratory protection suitable for the level of exposure is provided. Monitoring was reportedly not done on the *Spin City* site.

The MSDS lists the hazards of silica including acute and chronic silicosis. Both forms of silicosis cause a scarring or fibrosis of the lung and can even lead to death. The MSDS also says that the International Agency for Research on Cancer (IARC) reports sufficient evidence of carcinogenicity in experimental animals and limited evidence in humans. The MSDS, written in 1998, also should have reported that the National Toxicology Program (NTP) listed silica as "reasonably anticipated to be a human carcinogen." In 2000, NTP upgraded silica to a "known human carcinogen."(3)

ATTAPULGITE (or palygorskite) is a clay mineral, also found in some clays used by ceramic artists. It can occur as a fibrous chain-structure mineral. The MSDS says that massive fibrosis (scarring) of the lung has been documented in workers exposed to large amounts.

The MSDS states that IARC reports limited evidence that attapulgite causes cancer in experimental animals and inadequate evidence for the carcinogenicity in humans. Since very few workers are exposed exclusively to attapulgite, there may never be enough people exposed to provide definitive evidence. But this limited data is another good reason to keep exposure to humans as low as possible.

THE SETTLEMENT. Ms. Wetovich won her Workers' Compensation case in April, 2002. She was awarded back pay and expenses and granted reimbursement for further "medical treatment and care, as necessary, for established sites of injury and/or conditions." This should be interpreted to mean that additional treatment for asthma, lung fibrosis, and even lung cancer should it ever develop, is covered by this settlement.

MORE SUITS? Fullers earth is often used for dust and explosion aftermath effects in the film industry. In January 2002, a personal injury lawsuit was filed by a background actor from *Planet of the Apes* who claimed he developed lingering eye irritation and respiratory problems from fullers earth exposure. The Press reports that other actors may join in this suit.(4)

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1. Personal correspondence and e-mails 10/28/99 to 4/3/02.
 2. MSDS from City Chemical Corporation on Fullers Earth, faxed October 26, 1998.
 3. 9th Edition of the Report on Carcinogens, National Toxicology Program, (2000).
 4. *Sacramento Bee*, Ver. 4, 1/31/2002, Anthony Breznican, AP Entertainment Writer.
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ROSE ART RECALLS CHILDREN'S SOAP MAKING KIT

CPSC Press Release # 02-121, 3/14/02

In cooperation with the U.S. Consumer Product Safety Commission (CPSC), Rose Art Industries Inc., of Livingston, NJ, is voluntarily recalling about 124,400 Soap Making Kits. CPSC and Rose Art have received 10 reports of children being burned by the hot soap while removing the plastic container from the microwave oven.

The soap making kit is sold in a cardboard box with model number 4054 or a plastic case with model number 4121 on the packaging. The model number is on the upper right hand corner on the front of the packaging. Each kit includes bars of soap, molds, and a plastic cup to melt soap chunks. Toy and discount stores, including Toys R Us, Wal Mart, Kaybee Toys, Target and Value City, sold these kits nationwide between August 1997 through December 2001 for about \$10.

Consumers should stop using these kits immediately and contact Rose Art at (800) 272-9667 between 9 a.m. and 5 p.m. ET Monday through Friday or visit the firm's web site at www.roseart.com for information on how to receive a full refund and an additional Rose Art product item at no charge.

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REMINDER: NEW POISON CONTROL NUMBER

The new number for poison control centers, (800) 222-1222, should be placed near your telephone. This number provides everyone in the U.S. with free 24/7 access to their regional poison center. ACTS recommends Poison Control Centers be relied on primarily for acute advice. Ask other experts about potential long term problems.

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OPERA AMERICA HOLDS SAFETY SEMINAR

Editorial

The Opera America Conference, held in Toronto, addressed safety in a day-long seminar on April 21 in which I participated. The panel members included John Seekings, Operations Director of the Royal Opera House in London, Paul Horpedahl, Technical & Production Director of the Santa Fe Opera in New Mexico, and Craig E. Litton, Safety Manager of the Houston Grand Opera.

This was a unique group of speakers, since worker fatalities have occurred at all three opera houses. In 1981, a young man fell into the shaft of a back stage elevator at the Santa Fe Opera. And two workers were crushed on stage trying to move scenery in 1989 at the Royal Opera and in 2001 at the Houston Grand Opera. These deaths spurred the development of better safety programs.

In the case of the Royal Opera House, their safety programs now conform to the British Health and Safety at Work regulations which require a risk assessment document be prepared and signed for all procedures. All potential risks such as falls, cuts, burns, and chemical exposures must be assessed with the use of a matrix which plots the severity of a potential accident against the probability. If the assessed risk is found unacceptable, then steps must be taken to reduce the hazards. (See article below for more details.)

The Santa Fe Opera has used the years since their fatal accident to develop a 60 page safety manual and procedures for worker training consistent with US regulations. For example, the whole first day at the beginning of their summer season is devoted to training in hazard communication, fire, and emergency evacuation, to respirator fit testing, and to inspection of each work area. In addition, many of the regular staff are certified in First Aid and CPR.

The Houston Grand Opera is just beginning its program development, but they have progressed far enough to greatly reduce accidents.

Many subjects were discussed with audience participation including nets and guards for orchestra pits, sets and scenery with built-in fall hazards, mold exposure from costumes and stored scenery, hearing damage from machine and orchestral sound levels, theatrical fog and pyrotechnics, fire safety, and the special needs of disabled workers and audience members.

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REVIEW OF BRITISH PYRO RULES

Journal of Pyrotechnics, review by M. Rossol, Issue 15, Summer 2002

The summer issue of the *Journal of Pyrotechnics* reviews a *Confederation of British Industries Guide for the Explosives Industry* which contains information vital to theatrical pyrotechnicians. ACTS encourages pyrotechnicians to subscribe to this journal and to read the whole review. However, British occupational risk assessment rules will be covered here. The Guide states that:

The first duty of the employer under the Management of Health and Safety at Work Regulations 1999 is to undertake a risk assessment to clearly define the source and nature of all potential hazards and people who may be affected by them. This assessment must be performed and significant findings recorded by a person or persons who are adequately trained and competent to perform such duties.

This is done by looking at all potential hazards. A matrix which plots the severity of an accident against its probability is set up. The six-by-six matrix has numbers from #1 to #36 representing conditions ranging from "Low Risk" (#1 to #4) to conditions under which the employer should "Stop Work Immediately" (#18 to #36).

One of the Guide's examples illustrating use of the matrix was a determination of the risk of using a theatrical pyrotechnic effect involving flash paper. This hypothetical assessment considered how many performers and crew would be exposed, the frequency and duration of the exposures when firing the effect at each show over the week, and the potential exposures to hazardous smoke and particulates, to burns and fire, and to electric shock. When the matrix was applied, the number generated was #16, which meant that the "Risk is high, [and] immediate corrective action is required."

In this hypothetical theater, there was an extraction fan system in the fly which could draw smoke away from the audience and stage through a roof exhaust. By using this fan, the risk was lowered to #8, a "Medium" risk. The effect could then be used provided that:

- * the extraction system is used at all times when the pyrotechnics products are used;
- * fire fighting measures are in place;
- * the electrical firing systems meet guidelines;
- * pyrotechnic storage is appropriate and limited to small quantities; and
- * all scenery on and around the area is treated with fire-resistant materials, and props (which do not come under the fire-retardant rules) are not positioned near the effects.

The Guide further recommended, "The effectiveness of the extraction system is to be tested before and during rehearsals, by test firing the effects that are to be used during the performances."

Many US Theaters do not have this kind of exhaust system. In these theaters, the risk of using pyrotechnic effects would be rated "high" under the UK system. And I wonder how many technicians would be willing to sign this risk assessment as required in the UK.

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PYROTECHNIC COMPANY'S OSHA CITATIONS UPHeld BY JUDGE

BNA-OSHR, 32(18), 5/2/02, p. 427

Luna Tech, Inc., a pyrotechnic manufacturer whose products are often used by theatrical and entertainment companies, contested a series of Occupational Safety and Health Administration (OSHA) violations before an Administrative Law Judge representing the Secretary of Labor. The decisions were published in part in April (*Luna Tech, Inc., v Secretary of Labor, 4/29/02*).

Luna Tech claimed the citations were invalid because the Bureau of Alcohol, Tobacco and Firearms (BATF), not OSHA, had jurisdiction over their workplace. This was rejected by the judge, since the BATF only regulates licensing, distribution and storage of explosives and pyrotechnics.

One OSHA citation for failure to make a hazard assessment ((1910.132(d)(2)) was vacated by the judge, because Luna Tech had made this assessment and the president was wearing personal protective equipment (coveralls, safety glasses and conductive shoes) at the time of the inspection.

However, the judge upheld a willful violation of 1910.132(a) and \$25,000 penalty because the personal protective equipment chosen by the president was inadequate. It did not cover the workers' faces and hands, which are the body parts most likely to be injured. The judge also did not agree with Luna Tech's defense that gloves or face shields would impede work or expose workers to greater danger.

The violation was affirmed as "willful" because Luna Tech's president, in the business for over 20 years, had a heightened awareness of the hazards from an incident six months earlier when half of their facility was destroyed and one employee was killed in a fire. This incident resulted in 25 safety violation citations.

The judge also upheld an additional \$25,000 penalty and willful violation of 1910.307(b) for failing to provide a sieve shaker and electrical outlet that were safe for locations containing combustible dust. The judge declared the violation willful because the employer continued to use the unsafe sieve shaker despite the facts that in 1986 and again only two weeks earlier, Luna Tech was cited for violations of 1910.307(b).

The report of these citations is disturbing to theatrical users of Luna Tech products. It makes us wonder how we can rely on the material safety data sheets and other safety information from Luna Tech for protection of workers and performers when the president does not properly protect himself or his own workers.

EXPORT/IMPORT-PART I: A THREE PART SERIES

Brian C. Lee, PhD., DABT.

You plan to fly off to the coast of Spain to paint sandy beaches. Or you order a custom-blended resin remover from China. Maybe you are a theatrical scenic artist planning to ship mixed paints for touch up to a foreign location. Or perhaps you are an industrial hygienist considering taking a box of smoke tubes for testing ventilation systems with you on a business trip.

In the past, sending and receiving art materials and chemicals seemed as simple as mailing a birthday toy to your nephew in England. However, knowing the correct shipping, import and export regulations is recommended due to heightened security fallout from September 11 and the EPA's stricter enforcement policy on toxic substances. Most of the regulations apply to individuals as well as businesses.

The expense of non-compliance can be as small as the inconvenience of having to leave your favorite oil paints at the airport, to a fine of \$25,000 per occurrence (considered moderate) levied by the EPA, or to the gouging liability of a hazardous waste cleanup and disposal for an improperly packaged and undeclared substance.

In a series of articles exclusively written for ACTS FACTS, we'll look at the major considerations in complying with EPA export notification requirements, EPA import certifications, air travel with art supplies, and shipping of hazardous materials. The first two articles will be written by Dr. Brian C. Lee, and the third article will be written by Jim Redinger. We advise readers who carry or send materials over borders to clip all three articles.

PART I - EXPORT NOTIFICATION: EPA TSCA 12(b)

Section 12(b) of the Toxic Substances Control Act (TSCA) requires you to notify the EPA every time you are sending certain chemicals to another country for the first time. To see the regulations, go to <http://www.epa.gov/opptintr/chemtest/sect12b.htm>.

Single substances and even products that contain certain chemicals as part of a mixture or as a contaminant must be reported. The chemicals of concern are listed on the EPA's periodically issued Chemicals on Reporting Rules list (<http://www.epa.gov/docs/CORR/>).

Examples of 12(b) chemicals that may appear in art materials include some common solvents such as acetone, cyclohexane, and N-methylpyrrolidone, and a toxic insulation material, refractory ceramic fibers, used in kilns and glass furnaces.

COMPLICATIONS

1. You must know the formula or composition of the product you will export in great detail. TSCA 12(b) is blind to the quantity or concentration of regulated chemical substances. A truckload or a speck of a listed chemical triggers the notification requirement.
2. "Chemical substances" may include things not normally thought of as chemicals, such as asbestos. Some listings cover a group of chemicals, rather than a single chemical. A few examples include alkali metal nitrates, certain phthalate plasticizers, hexavalent

chromium compounds such as lead chromate pigments, commercial hexane solvent, and benzidine-based chemicals including dyes such as C.I. Direct Orange 43, and C.I. Direct Green 58.

3. Chemicals incorporated into an item, such as the ink on a paper or the finish on a chair are "articles" and are not subject to this export notification requirement. Sticks of drawing chalk and wax crayons also are articles. However, the contents of a container of ink or finish are not articles and the requirement would apply.

4. Most chemicals on the 12(b) list require notification only on the first export by a specific person or company to a specific country. However, some substances on the list require notification on the first export of each calendar year.

5. The EPA CORR list has been notably misleading beyond the usual typos to the extent that a disclaimer is included by EPA about its accuracy. Searching for and then reading through the relevant Federal Register notices can be tedious and confusing. You may need to contact EPA or a consultant for help.

BENEFITS

1. When in doubt about whether a chemical requires reporting or not, report it. There is no penalty or disadvantage associated with unintentional over reporting. No penalty or prejudice results from submitting a notification on a substance that is later found to be expired off the list or not present.

2. Testing for the presence of listed substances is not required by TSCA 12(b).

3. US possessions, such as Puerto Rico, are not considered foreign countries and 12(b) would not be applicable for shipments to these destinations.

Brian Lee, PhD, DABT, a regulatory toxicologist with corporate experience in TSCA 12(b) compliance, is available on a consulting basis to assist you in determining your needs and submitting export notifications. Dr. Lee can be contacted at Good Afternoon Toxicology Consulting, LLC, bcleee@peak.org, ph.541-758-4697.
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POSTSCRIPT TO PAMELA DALE STORY

Readers can add a postscript to the April, 2002 *ACTS FACTS* story on the perils of Pamela who developed asthma from theatrical special effects at the San Francisco Opera, complained, was terminated, and eventually won an arbitration decision reinstating her with back pay. Now Pamela's union sisters and brothers voted to make her spokesperson and chair of their health and safety committee.

If this were not enough, when the San Francisco Opera Association appealed a ruling allowing Pamela to be privy to the hearings at which the Opera would contest their CalOSHA citations for guardrail violations, the judge granted Pamela "party status." This means that she will be served with copies of all documents past and present and be able to attend hearings as an affected party. It warms the heart.

ACTS FACTS MAKES BOOBOO

A "fuller" is not, as stated in last month's issue, a person who fills oil tanks. Instead, it is a person who fulls cloth--that is, applies clay-like substances to make cloth fuller or thicker and to absorb grease and dirt. A number of mineral powders can be used to full cloth and they are all called "fullers earth." Today, fullers earth is used to absorb oil spills, to deodorize oils and other liquids, as oil drilling mud, insecticide carrier, floor sweeping compound, in cosmetics, rubber filler, filtering medium, and more.

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MESSY LAB LEADS TO LOSS OF TENURE

C&EN, March 18, 2002, pp. 39-40

During his 28 years as an organic chemistry professor at the University of Texas, San Antonio, Philip L. Stotter, accumulated thousands of chemicals and enough books and journals to fill hundreds of boxes in his lab and office. Stotter, 60, says his problem was typical of long term chemistry faculty who have no safe space to put the compounds and he'd been actively involved in trying to create a new chemical storage facility at the university.

But university officials saw it differently. They maintained that the office was a serious fire hazard, the lab was extremely dangerous, and Stotter wouldn't cooperate. Last month, after what it says was two years of trying to get him to clean up the mess, the university terminated him, stripping him of tenure. Stotter's gone, the lab is locked, and the chemicals were carted away by hazardous materials team at a cost of \$33,000.

COMMENT: The cost of disposal was small compared to Environmental Protection Agency (EPA) fines for improper chemical storage. **ACTS FACTS** (12/1994 and 12/1995 issues) reported on fines paid by Stanford (\$995,000) and Yale (\$70,000 plus \$280,000 for mandated training). And the University of Hawaii was fined over \$1 million for improper chemical storage. The EPA has been focusing on enforcement at institutions of higher education. This editor hopes many college art and theater departments will clean up before EPA sees their large stores of toxic and flammable paints, plastics and solvents, their floor to ceiling stacks of combustibles, and their improperly stored and often expired pyrotechnic chemicals.

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ACTS FACTS

THE MONTHLY NEWSLETTER FROM
ARTS, CRAFTS AND THEATER SAFETY (ACTS)

181 THOMPSON ST., # 23,

NEW YORK, NY 10012-2586

PHONE 212/777-0062

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July 2002

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Vol. 16, No. 07

INDOOR ENVIRONMENT STUDIED AT ART SCHOOL

BNA-OSHR, (32(21), 5/23/02, pp. 499-500, NIOSH, HETA 2001-0533, *BNA-OSHR*, Vol. 22, No. 38, Feb., 24, 1993, p. 1662, *ACTS FACTS*, April, 1993.

The National Institute for Occupational Safety and Health (NIOSH) conducted a health hazard evaluation at the Savannah College of Art and Design in Georgia. NIOSH investigated health complaints among employees. Although NIOSH could not tie the complaints conclusively to the work environment, researchers noted that it is "not an unusual finding" in an indoor air quality investigation to find no obvious explanation for reported chronic symptoms.

According to NIOSH, the factors suspected of causing the symptoms included 1) exposure to particulates and vapors generated during previous and recent renovation activities; 2) ongoing exposures to emissions from printing press inks and cleaners; and 3) insufficient outside air which can be "a contributing factor to temperature variations, humidity problems, and nuisance odors."

IEQ PLAN. NIOSH recommended setting up an indoor environmental quality (IEQ) plan to prevent indoor air quality problems at the school. Elements of an IEQ plan include proper operation and maintenance of heating, ventilating, and air conditioning systems; effective and timely communication with employees about indoor air quality; and education of employees and contractors about their responsibilities. NIOSH also recommends that the school:

- * Engage a qualified ventilation engineering firm to conduct a comprehensive review of the heating, ventilating, and air conditioning systems and implement upgrades;
- * Provide a dedicated exhaust system to minimize solvent exposures in the printing press area and to keep vapors out of other areas;
- * Provide employees with material safety data sheets for products used before the printing press changed to water-based inks; and
- * Improve housekeeping in the basement and clean all dirty air supply grills throughout the building.

COMMENT. NIOSH's recommendations for providing better communication and MSDSs are interesting since *ACTS FACTS* reported on OSHA citations for these same shortcomings at this school in 1993. At that time, the College contested citations for alleged failures to develop, implement, and/or maintain a written hazard communication program (1910.1200(e)(1)); to ensure that MSDSs were readily accessible to employees (1910.1200(g)(8)); and to establish a written respirator protection program (1910.134(b)(1)).

WORKERS LOSE DAMAGE SUIT FOR ASBESTOS EXPOSURE

BNA-OSHR, 32(15), 4-11-02, p. 331 & *Upsher v. Grosse Pointe Public School System*, 6th Cir., Nos. 00-1763, 00-1764, and 00-1765, 4/4/02

Early in 1995, administrators at South High School in Grosse Pointe, Michigan, decided to replace the carpeting located in the main office area. Assistant principal Paul Pagel selected New York Carpet World to do the job. After testing the vinyl floor tile beneath the carpeting, New York Carpet World refused to complete the project, informing Pagel that the machine scrapers it used might disturb the underlying asbestos-containing tiles. Instead of hiring an asbestos abatement contractor, Pagel then instructed the school's custodial staff to remove the carpet.

Beginning in July, 1995, the custodians chipped, pounded, pulverized, and jackhammered the tiles stuck to the back of the old carpeting, resulting in flying dust. The custodians were not given HEPA vacuums, protective clothing or respirators.

According to court records, all of the plaintiffs, except two high school students who worked as temporary custodians, had received asbestos awareness training. None of the custodians had received the additional training required by the federal Asbestos Hazard Emergency Response Act of 1986 for asbestos removal work.

Alleging that they suffered from respiratory irritation and other physical and psychological problems resulting from exposure to friable asbestos, the custodians filed a complaint with the Michigan Department of Public Health. The agency cited the school system for failure to perform exposure monitoring to determine airborne concentrations of asbestos, as required by the Occupational Safety and Health Administration, and failure to instruct employees in the recognition and avoidance of unsafe conditions involving asbestos.

Then custodians sued the Grosse Pointe Public School System, the board of education, and several school officials, claiming, among other things, that the school system had committed an intentional tort by assigning them to the carpet removal work.

A district court ruled that school officials had not specifically intended to injure the custodians and dismissed their claims. The custodians appealed. The appeals court noted that although some school officials knew the general dangers associated with asbestos exposure, and that the school did not provide adequate training or protection, the officials did not know for certain that the asbestos would cause injury and did not wilfully refrain from informing them of that fact. The court therefore found that there was no intentional tort.

COMMENT. Now the custodians can only wait to see if they develop asbestos-related diseases and then apply for workers' compensation. It is obscene for school officials to order workers to risk death to install their office carpet. Were it up to this editor, I'd jail Paul Pagel and every administrator involved.

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EXPORT/IMPORT: PART II

Brian C. Lee, PhD, DABT

Our series of articles on shipping art and theater products continues with a section on import certification.

IMPORT CERTIFICATION: EPA TSCA 13

When bringing chemical substances into the US, you must certify to the EPA that the shipment is in compliance with the Toxic Substances Control Act (TSCA) regulations with a "positive certification", or that the shipment (or specific parts) is exempt from TSCA for a "negative certification." Further information on this rule is at <http://www.epa.gov/opptintr/chemtest/sect13.htm>.

Importation also includes shipments arriving by delivery services and mail. For larger companies, the certifications are usually presented to US Customs by a customs broker acting for the company. However, unless prior arrangements are made, it is faulty to assume the sender will provide the necessary certification or that the delivery service is acting as a customs broker.

Chemical substances requiring certification may be single components or mixtures. A few examples are paint, glue, cleaning agents, oils, pigments, and solvents. US Customs has been known to refuse entry of inkjet printers carried by travelers returning from a business trip until certification for the ink could be obtained.

Some items that do not require any TSCA 13 certification are food, drugs, cosmetics, and tobacco. Chemical substances that are part of an article such as the finish on a wood chair or paint on a canvas are not subject to this requirement.

COMPLICATIONS

1. Unsolicited chemical substances received from other countries must be certified directly to EPA. This also applies in situations where the sender does not advise the importer when a shipment can be expected and the shipment suddenly arrives.
2. Very specific wording must be used. This can confuse inexperienced importers causing them to use the wrong certification or none at all. This occurs especially with research and development chemicals, pesticides, radioactive materials, firearms, and ammunition.
3. The importer of record, that is, the company that ordered the product from the US distributor, is responsible for certification.

BENEFITS

1. If you are not sure whether you need to report or not, it is better to report. There is no disadvantage for overreporting. No penalty or prejudice results from certifying TSCA compliance if it is later found that the shipment did not contain a regulated chemical.
2. No analysis to identify chemicals is required by TSCA 13.
3. If the substance is first imported by a distributor in the US who then sends the substance to you, the responsibility for import certification lies with the distributor.

4. The substances in the shipment do not need to be individually identified or certified unless there are items in the shipment that require different certifications. A shipment may consist of several packages traveling together.

Brian Lee, PhD, DABT, a regulatory toxicologist with corporate experience in TSCA 12(b) compliance, is available on a consulting basis to assist you in determining your needs and submitting export notifications. Dr. Lee can be contacted at Good Afternoon Toxicology Consulting, LLC, bcleee@peak.org, ph.541-758-4697.
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OZONE GENERATOR SELLERS FINED AGAIN AND AGAIN

Mold Reports, Vol.1 #5, Abbey Pub., Sept. 2001, pp. 2-1, ACTS FACTS, Jan. 1993, Consumer Reports, Oct 1992 p. 661, & FDA Consumer, Nov/Dec, 1999, p. 36-37
Alpine Industries, Inc., has been claiming that its ozone generators relieved allergies and other breathing problems, even though it was ordered by the Federal Trade Commission in 1995 to stop making such claims without "competent and reliable scientific evidence."

In April 2001, the company and its president, William J. Converse, were ordered by a federal judge to pay a civil penalty of 1.49 million dollars, plus interest and costs. The judge also issued an injunction barring Alpine and Converse from making any claims that the "air purifiers" sold by the company are able to remove any indoor air pollutant except for visible tobacco smoke and some odors, making any health claims for the machines, and from claiming that sensors in the generators can control ozone levels in rooms.

EARLIER STATE FINE. Converse also was fined in a state court in 1992. A Minnesota Court of Appeals found Converse guilty of fraud for claiming that his ozone generators could improve health. The court order him to pay \$70,000 in civil penalties and \$104,105 in attorney's fees. At that time, Converse was President of Alpine Air Products and he sold the company to a buyer who renamed it Alpine Industries and kept right on selling the machines!

TWO MORE IN FLORIDA. Another pair of ozone touters, Kenneth Thiefauld and his wife, Mardel Barber, were ordered in 1990 to stop claiming ozone could treat diseases. The couple ignored the order. In March of 1999, Thiefauld and his wife were sentenced in a US District Court in Florida to prison terms that together total over eight years and fines adding up to more than \$100,000.

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ACTS FACTS sources: the Federal Register (FR), the Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR), the Mortality and Morbidity Weekly Report (MMWR), and many technical, health, art, and theater publications. Call for information about sources.
Editor: Monona Rossol; Research: Tobi Zausner, Nina Yahr, Diana Bryan, Sharon Campbell, Robert Pearl; Staff: John Fairlie, OES.

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ARTIST CAROLYN ELLINGSON DIES OF MESOTHELIOMA

Editorial & e-mails: contact@artgroove.com, 6/8, 6/10, & 6/26/02.

Born in Chicago, IL, on June 8, 1937, Carolyn Ellingson passed away in a hospice on April 26, 2002. She died of mesothelioma, an asbestos-related cancer of the lining of the chest (mesothelium).

Carolyn was a well-known San Francisco artist. For the last 20 years she pursued painting and printmaking in her Hunters Point Shipyard studio under her Artgroove.com trademark. I worked briefly with Carolyn in San Francisco and was saddened by the news. And since mesothelioma's latency period usually ranges between 20 and 40 years, I contacted her son, Randall Jay Ellingson to find out how Carolyn got a disease caused almost exclusively by asbestos.

Randall informs me that when Carolyn was 8 years old, her family moved to Minneapolis where she spent the next 35 years of her life. Her home was located across the street and down the block from a factory that processed Libby Montana vermiculite into an insulation product called Zonolite. This Libby vermiculite, mined by Western Mineral Products and W.R. Grace, is contaminated with tremolite asbestos (see ACTS FACTS Feb., May, 2000, and earlier issues).

The Agency for Toxic Substances and Disease Registry (ASTDR) reports* that asbestos-related health effects in Libby are worse than anywhere else in the nation. Nearly half (48%) of the miners studied had pleural thickening or lung scarring. Another 5,590 people who only lived in Libby or lived with a person working in the mines had an 18% rate of lung-lining scars. An ASTDR mortality study noted that Libby's asbestosis rates from 1979-1989 ranged between 40-60% over U.S. background rates and mesothelioma cases were documented. The ASTDR also recommended studying people working and living near processing plants like the one in Minneapolis.

The processing plant near Carolyn's home received shipments of vermiculite that looked like a hard gravel. This material was heated and "popped" into the fluffy mica-like stuff we know as vermiculite. Like popcorn, some of the vermiculite ore bits did not pop. These were called "stoner rock" and they were piled up near the street. Neighbors would take the rock to use for traction on the snowy driveways. Children, including Carolyn, played in these piles, attracted by the warmth of the rock. Carolyn's family contends that this childhood exposure to asbestos-laced vermiculite is why Carolyn was taken from us at the height of her creativity.

Memorial donations can be made to local Hospices, or to the Hospice of Spokane, 1325 W First Ave., Suite 2000, Spokane WA 99210.

* ATSDR's Year 2000 Medical Testing of Individuals Exposed to Asbestiform Minerals Associated with Vermiculite in Libby, MT., a report released Aug 23.

ANOTHER MESOTHELIOMA IN AN ARTIST

Editorial based on personal notes & *Art Hazards News*, Nov., 1981, p. 1
Carolyn Ellingson is not the first artist I have known personally who died of mesothelioma. The first was Audrey Eichelmann who died on August 14, 1981 at age 54. Heroic means to extend her life were tried including six operations. The last time I talked to her, she spoke with the aid of an electronic larynx. She exhibited grace and acceptance through the course of this inevitably fatal illness.

Mrs. Eichelmann was a doctor's wife who never smoked and had no job-related asbestos exposures because she never worked outside the home. She had no childhood exposures either. Her only possible contact with asbestos was through a porcelain doll-making hobby that blossomed into a small business. Mrs. Eichelmann's studio was in Port Ewan, NY. The casting slips she used to make the dolls contained talc mined in New York. Audrey's death has been one of many reasons I do not believe that these talcs are asbestos-free.
=====

MOVIE STUDIO OWNER TO PAY 2.5 MILLION TO WORKER INJURED DURING FILMING OF *THE CROW*

BNA-OSHR, (32(21), 5/23/02, p. 501

Many accidents occurred during the filming of *The Crow* including the death of the star, Brandon Lee, in a gun mishap. Now blame for one of the other accidents has been resolved in the courts. This accident occurred at the Carolco studio location on February 1, 1993, while Crowvision employee James L. Martishius was attempting to move parts of the set and his mobile boom lift contacted overhead power lines. Martishius was burned over 40 to 45 percent of his body and was blinded in his right eye.

Martishius sued Carolco studio and others. A jury determined that Carolco's owner had been negligent and awarded Martishius \$2.5 million in damages. A divided court of appeals affirmed the jury's verdict. Carolco appealed again. Now the North Carolina Supreme Court has upheld the decision once again and the award is final (*Martishius v. Carolco Studios Inc.*, N.C., No. 175A01, 5/10/02)

THE STORY. In December 1992, Crowvision leased part of Carolco's studio for filming their movie. In their agreement, it stated that the property was in "safe condition" and it required Crowvision to obtain approval before making any alterations to the premises.

Before production began, Carolco's facility manager Gerald Waller conducted a walk-through of the facilities with the Crowvision construction coordinator Jeffrey Schlatter. Schlatter and Waller's inspection included the energized power lines 27.8 feet above the ground in the studio's back lot. Waller told Schlatter that Carolina Power and Light had a 30-foot easement around the lines and Crowvision had to keep at least 10 feet away from the lines.

However, after production started and as early as a year before the accident, Crowvision employees began working within 10 to 12 feet of the power lines with Waller's approval. Waller had authorized the building of sets up to the edge of the 10-foot safety zone, even though he knew that Crowvision employees would need to work behind the set and use lift equipment inside the 10-foot zone.

In addition, the Supreme Court said Carolco failed to take precautionary measures such as de-energizing the power lines, or moving, burying or guarding the lines to make the worksite safer. Considering all these circumstances, the court held that the court of appeals' decision was proper and upheld the award.

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EXPORT/IMPORT: PART III

Written by Jim Redinger, Regulatory Agent, Compliance Consultants, LLC
Our series on shipping art and theater materials and other chemical products continues with a section on importing. People have contacted us about how to obtain training in the regulations. We will add a short follow up to the series (Part IV) on training.

SHIPPING & AIR TRAVEL WITH HAZARDOUS MATERIALS

The limits of hazardous materials allowed to be transported by aircraft is established by the International Civil Aviation Organization (<http://hazmat.dot.gov/icao.htm>). Because individual airlines may choose to impose tighter restrictions, and each international destination may have additional acceptance restrictions, the civilian members of the International Air Transport Association (IATA) leveraged the government instructions to create a regulations manual that further incorporates airline and destination specific mandates. Enforcement within the United States primarily lies with the Federal Aviation Administration (FAA), while the Department of Transportation regulates highway and railroad; the Coast Guard enforces safe transportation by vessel.

Unlike TSCA requirements discussed previously, IATA regulations are not chemical-specific but are identified by characteristic. Characteristics of primary concern are flammability, corrosivity, toxicity, and compressed gases; materials are then further classified to the degree of hazard. So while a container of paint may be a low-hazard flammable liquid, the same container with added thinner may have altered characteristics; thus adding to or changing the primary hazard, requiring additional packaging with different documentation. Dependent upon the thinner and amount used, the same paint may now be classified as a toxic liquid instead of, or in addition to a flammable designation.

Mixtures or solutions always require re-calculating, and may require re-testing to determine the hazard classification. Dangerous Goods may include numerous household items not typically considered hazardous, such as glues, matches, candles, and detergents.

IATA regulations define the allowable limits of dangerous goods for airline crew and passengers. These basic limits are established for all airline travel whether international or domestic, and are designed to accommodate most personal items, contained in small volumes. Four kilograms of personal toiletries, with no single item greater than a half-liter (500 ml) are allowed for each individual. Personal items may include, but are not limited to cologne, soap, nail polish, hairspray, contact lens solutions, and medications. [Ref 2.3.5.1.]

Art and theater supplies are not considered personal items. Traveling with art and theater supplies requires that those considered dangerous goods be packaged and shipped in a compliant manner. In many situations, the shipping may be on the same plane if the proper packaging and documentation have been arranged. Failing to accurately declare and package the dangerous goods is subject to fines up to \$100,000. This includes "accidentally placing the items in checked baggage." Unfortunately, airlines do not allow passengers to check baggage with hazardous materials or carry-on such packages. Exceptions are allowed for specific items such as dry-ice and alcohol. Alternatively, the art and theater supplies may be purchased anew at the destination.

Placing a dangerous goods package into the transportation system requires training and annual registration with the Department of Transportation <http://www.tsi.dot.gov>. Preparing a package of material may require nothing more than a label of exception for small quantities (e.g. 30 grams material dependent???) , or may require specific containers for both internal and external packaging and be forbidden on passenger aircraft! An in-depth awareness of the regulations can assist in processing dangerous goods materials through the numerous exceptions allowed when specific requirements are met.

Similar and other restrictions exist when shipping by other carriers including the US Postal System, private carrier such as a trucking firm, FedEx, UPS, or Airborne, or by watercraft. Personal quantity exemptions do not exist. The quantities and packaging required can vary widely.

Because the regulations are complex, we recommend using a transporting organization or a registered shipping compliance agent.

Jim Redinger, Regulatory Agent (jim@compliance-consultant.com) (Ph:541.760.4815) Compliance Consultants, LLC, is a regulatory agent with corporate experience in Transportation Compliance, is available on a consulting basis to assist with packaging, documentation, and training needs when desiring to travel with or ship potentially hazardous art and theater supplies or other substances.
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ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many technical, health, art, and theater publications. Call for information about sources.
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POLYMER CLAY STUDY RELEASED: CLAY PLAY IS RISKY

Hidden Hazards, VPIRG, July 2002

Since 1992, ACTS FACTS has reported on the hazards of polyvinyl chloride plastic clays and has called for a study of them.¹ Now the Vermont Public Interest Research Group (VPIRG) has done just such a study. Called "Hidden Hazards: Health Impacts of Toxins in Polymer Clays," the study provides laboratory analyses of 10 Sculpey® and Fimo® colored clays² and estimates exposures to toxic phthalates plasticizers when children use various colors³. Assessments have been made of exposure 1) by skin contact and subsequent ingestion, and 2) by inhalation during baking in an oven in a typical kitchen.

PHTHALATE HAZARDS. While some phthalates have been shown to cause cancer, reproductive damage, or other chronic harm in animal tests, very little is known about most phthalates. This lack of knowledge is disturbing because phthalates are found in so many products. Readers may remember news reports about phthalates in medical tubing, children's soft plastic toys, baby bottle nipples, and more recently, in cosmetics.⁴ These and other sources are thought to cause the high levels of phthalates in the urine and blood of thousands of people tested by the Centers for Disease Control in a general study of environmental pollutants.⁵

PHTHALATES IN POLYCLAYS. VPIRG had 10 polymer clay samples analyzed. They found that mixed phthalates made up between 11% and 14% of the total contents of each of five Fimo® samples. The five Sculpey® samples each contained between 3.5% and 4.4% mixed phthalates. However, these 10 products represent only a fraction of the polymer clay colors and products on the market. Some polymer clays are likely to contain greater amounts of phthalates. Confirmation that this is true can be found in document by Dr. Woodhall Stopford who states that "no more than 25% of polymer clay weight would be made up of phthalate ester plasticizers."⁶

PHTHALATES IDENTIFIED in the polymer clays included:

- **DnOP** (di-n-octyl phthalate) - Associated with birth deformities, reproductive disorders, liver and thyroid effects. When mixed with other phthalates, it is associated with gene mutation.
- **DnHP** (di-n-hexyl phthalate) - Associated with reproductive disorders, liver and thyroid effects. When mixed with other phthalates, it is associated with gene mutation.
- **BBP** (butyl benzyl phthalate) - Associated with reproductive disorders, birth deformities, nerve disorders, and miscarriages. Cancer studies are suggestive, but inconclusive.

- **DEHT** (di(2-ethylhexyl)terephthalate) - Hazards unknown. DEHT was used to replace a closely related chemical called DEHP (Di(2-ethylhexyl) phthalate) which was in polymer clays in the past, but which today would require labels to carry cancer warnings.
- **UNKNOWN PHTHALATES.** Multiple unidentified phthalate compounds were also found. One of these phthalates, designated as "unknown #2," was found at a level of 46 milligrams per kilogram (46 ppm). Based on laboratory similarities, "unknown #2" closely resembles the cancer-causing DEHP.

The Fimo® clays appeared to contain mostly DnOP, DnHP, DEHT and the "unknown #2" phthalate. The Sculpey® clays appeared to contain mostly BBP, and a mixture of DnOP and DEHT. Both brands of clays also contained significant amounts of several other phthalate compounds which the lab was unable to positively identify.

The lab's difficulty in determining the exact identity of all the phthalates shows the complexity of phthalate chemistry. But it is clear that Dr. Stopford's assertion that DEHT, DNHP, DnOP, and DnDP are the only phthalates in these clays is erroneous. Yet, Dr. Stopford certifies that the polymer clays are safe for use by children for the Arts and Craft Materials Institute.

EXPOSURE TESTS. VPIRG arranged for a laboratory study to assess human exposure to phthalates when polymer clays are used according to package directions. The researchers prepared and baked clay samples following the manufacturers' directions, and measured releases of phthalates in the air and residues on users' hands.

SKIN CONTACT. After working 100-gram samples into the shape of crude bowls with gloved hands for 5 minutes, the subjects washed, rubbed and rinsed their gloved hands vigorously with distilled water for 30 seconds. Then they rinsed their gloved hands again in a solvent (methanol). Testing of the solvent rinse revealed that large quantities of phthalate residues had remained on the gloved hands even after washing. To insure that no phthalates came from the gloves themselves, the test was repeated without manipulating the clay. No trace of phthalates were found in these cases.

VPIRG researchers then calculated how much phthalate a typical child could ingest from his/her hands. Calculations were based on the U.S. Consumer Product Safety Commission's 50 percent hand-to-mouth transfer factor, which assumes that fifty percent of material that is deposited on hands will eventually be ingested. Researchers found that a child could ingest an average of 7,000 micrograms (7 milligrams) of phthalates when using 100 grams of polymer clay product for 5 minutes.

INHALATION DURING BAKING. VPIRG researchers found that baking between 1 and 7 milligrams of the clay samples in small vials at 270 degrees for 20 minutes, per the manufacturers' instructions, would, during an average use of the product, release 2 milligrams of mixed phthalates per cubic meter (mg/m^3) of air. One product, Fimo® Lavender, was calculated to release the equivalent of an alarming $11.8 \text{ mg}/\text{m}^3$ of air during baking.

Using these figures, the lab calculated that a person in an average-sized kitchen during and immediately after the baking process would inhale an average of 0.5 mg/m³ of air of the three phthalates (DnOP/DEHT, BBP, Unknown #2). During the baking of the worst emitter -- Fimo[®] Lavender -- a person could inhale well over 3 mg/m³ of air of the three phthalates.

EXPOSURE STANDARDS. VPIRG showed how the data above indicated that exposures to phthalates approached and sometimes exceeded various workplace and environmental standards for related phthalates. The most dramatic finding was that for exposure to BBP from Sculpey[®] by both ingestion and inhalation:

...the National Toxicology Program (NTP) Center for the Evaluation of Risks to Human Reproduction (CERHR) panel assigned to study the risks phthalate exposures posed to human reproductive health suggested that BBP was of only "minimal" concern for reproductive effects in humans because exposures in adults were assumed to be low -- around 2 micrograms per kilogram of body weight. Yet VPIRG's research shows that a 20 kg (44 lb.) child using 100 grams of polymer clay could be exposed to as much as 130 times the 2 micrograms per kilogram of body weight of BBP the panel identified as normal daily exposure after only 5 minutes of play.

This, and far too many other findings to cover in this short review, clearly support VPIRG'S recommendation that "The Consumer Product Safety Commission should immediately recall polymer clay products containing phthalates...." At the very least, VPIRG calls for label warnings "directing pregnant women and children not to use polymer clay products." ACTS concurs.

Readers can go to www.vpirg.org to see the full study. A hard copy with appendixes can be obtained by sending \$10.00 to VPIRG, 141 Main St., Ste. 6, Montpelier VT 05602, At: Susanne Miller. ACTS suggests you also send a donation to support VPIRG's fine work. Laboratory studies like this are expensive.

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1. ACTS FACTS, January, 1992. ACTS received so many requests for further information that the article was reissued as a data sheet in 1994 and updated again in 1995.
 2. Sculpey[®]: White, Chocolate, Green, Atom and Violet; Fimo[®]: Magenta, Lapis, Green Yellow, and White.
 3. Sculpey[®]: Sweet Potato, Terra Cotta, Pearl, Lilac Pearl, Leaf Green; Fimo[®]: Yellow, Lavender, Turquoise, Green, White.
 4. The study above prompted three groups: Health Care Without Harm (Wash., DC), Environmental Working Group (Wash., DC), and Coming Clean (Missoula MT) to examine the link between cosmetics and phthalates. They had cosmetics analyzed and found phthalates in 52 of their 72 samples ranging from a trace to 3%. For a copy of the study, see www.noharm.org.
 5. National Report on Human Exposure to Environmental Chemicals, CDC, Mar 21, 2001.
 6. Dr. Woodhall Stopford, MD, MSPH, Duke University Medical Center, Division of Occupational and Environmental Medicine, "Questions Concerning the Risk Assessment for Polymer Clays," October 23, 2000. Note: Dr. Stopford usually has access to the manufacturers formulas when making his assessments.

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PART IV OF THE EXPORT/IMPORT ARTICLES NEXT MONTH

Because the VPIRG Polymer Clay review above was time-sensitive, Dr. Brian Lee's article on "Training for Shipping Hazardous Materials" will appear in the October issue. Thank you for your patience.

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CANDLE RECALL: A BAD THING FROM MARTHA

CPSC Press Release # 02-185, June 25, 2002

In cooperation with the U.S. Consumer Product Safety Commission (CPSC), Candle-lite, of Cincinnati, OH, is voluntarily recalling about 80,000 ceramic potpourri simmering pots sold under the Martha Stewart Everyday® Brand. Flames from the tea light candles inside these potpourri pots can flare out of the side ventilation holes. Candle-lite has received nine reports of overheating and one consumer received minor burns while attempting to extinguish a tea light. A label on the bottom of the base reads, "MADE IN CHINA."

It would be a good thing for Martha to visit <http://www.cpsc.gov> and see how often candles and Chinese products in particular are recalled before importing and selling such items.

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ACTS FACTS PRICE UP \$2.00

Two increases in postage since the last price increase have made it necessary to once again raise the newsletter subscription price. It will rise from \$18/year to \$20/year. Foreign postage has not risen proportionally as much, so the additional cost will still be \$3 for Canadian subscribers and \$6 for other countries. The price will change on January 1. Subscribers wishing to take advantage of the slightly lower price can order multiple year subscriptions.

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ACTS FACTS

THE MONTHLY NEWSLETTER FROM

ARTS, CRAFTS AND THEATER SAFETY (ACTS)

181 THOMPSON ST., # 23,

NEW YORK, NY 10012-2586

PHONE 212/777-0062

October 2002

Vol. 16, No. 10

RIT ARTIST BURNED IN TORCH ACCIDENT

AP Wire, Rochester, NY, Ben Dobbin, in the *Daily Freeman*, 7/28/02
Albert Paley, Artist-in-Residence at the Rochester Institute of Technology and world-renowned metal sculptor, suffered serious burns in a metal-cutting mishap. Paley, 58, was cutting metal with a propane torch when a gas line burst and set his clothes on fire, authorities said. Emergency crews found him hosing himself off outside the studio. Paley was taken to a hospital with second- and third-degree burns over more than 20% of his body, mostly on his head, chest, left arm and legs.

Paley's monumental creations grace museums, plazas, universities and corporate courtyards from Washington to San Francisco. Among his best-known works are elaborate portal gates at the Renwick Gallery in Washington, the San Francisco Civil Court House, and the New York State Chambers in Albany. His stainless steel pieces stand up to seven stories high and weigh as much as 40 tons. Paley still plans to build his largest sculpture to date, a 90-ton, 65-foot-tall creation called "The Sentinel," at RIT.

This accident should remind all art welders to inspect flexible gas lines and all torch and welding gear daily for wear and damage.

AEROSMITH CANCELS: SMOKE MACHINE AT FAULT

Parade Magazine, Walter Scott's "Personality Parade," May 26, 2002, p. 2
In response to a question about why an Aerosmith concert was canceled, columnist Walter Scott replied:

Frontman Steven Tyler, 54, developed a throat irritation when a smoke-making machine was not adjusted properly for some indoor concerts. To let his voice recover--and to give the technicians time to adjust the equipment--the rock group canceled several shows. We're told everything is fine now, and talks are under way to reschedule the missed dates.

HORMONE REPLACEMENT: A LESSON RELEARNED?

Editorial

A study of hormone replacement therapy was discontinued on July 9 because it indicated that the drugs increased the risk of breast cancer, stroke, and heart problems. Once again we all learned that it took a very large (over 16,000 women), double-blind study to identify the hazards of the drugs. Recently, several National TV stations have aired uncritical interviews of people urging women to use natural plant estrogens as substitutes for the drugs. There are no large double-blind studies of natural plant estrogens either.

EXPORT/IMPORT: PART IV

WRITTEN BY: Brian C. Lee, PhD, DABT

Our continuing series on shipping art and theater materials and other chemical products concludes with a section on the training required if art material companies plan to have their own employees handling importing and exporting.

TRAINING FOR SHIPPING HAZARDOUS MATERIALS

In the US, the shipping of hazardous materials (hazmat), including hazardous art, craft, and theater supplies, is in the domain of Dept. of Transportation (DOT). DOT regulations are also consistent with the international air shipping regulations set by IATA and ICAO. Title 49 CFR Part 172 subpart H specifies training is mandatory for individuals involved in the transportation of hazardous materials. New hazmat employees must be trained 90 days after starting employment and retraining is required every 3 years. This includes anyone who handles or places any hazardous material into a transportation system (air, water, land, rail; mail, delivery service, etc).

Training is available from private sources as well as the DOT Transportation Safety Institute. The TSI courses are held in Oklahoma City, OK along with testing and eligibility for certification. Course information and schedules are available at:

<http://hazmat.dot.gov/pubtrain/hmstrain.htm>
<http://hazmat.dot.gov/pubtrain/hmstrain.htm>
<http://www.tsi.dot.gov/> and <http://www.tsi.dot.gov>

The basic course is 5 days and costs \$625. The air, water, and ground transportation courses cost \$500 each. Since US Mail and other delivery services often use multiple modes to transport a package, knowledge of the specific regulations is critical.

Shipping liability insurance is available from private insurance companies. Premiums can vary depending on the volume and type of shipments but tend to be in the \$500-1000/yr range. It is highly recommended for hazmat shippers since they are financially responsible for errors or omissions in documentation, labeling, placarding, and packaging. Non-compliance can result in fines up to \$27,500 plus the cost of cleanup should an incident occur. A hazmat shipper must provide a 24 hr contact phone number should an emergency occur during shipping.

The costs of training, insurance, and keeping up to date with the various regulations are not practical for many businesses. Using a certified shipping agent is a more viable solution for achieving regulatory compliance and avoiding fines and liability.

Brian Lee, PhD, DABT, a regulatory toxicologist with corporate experience in TSCA 12(b) compliance, is available on a consulting basis to assist you in determining your needs and submitting export notifications. Dr. Lee can be contacted at Good Afternoon Toxicology Consulting, LLC, bcllee@peak.org, ph.541-758-4697.
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HAZARDS ASSOCIATED WITH COPPER SLAG ABRASIVES

"Airborne Exposure to Toxic Metals and Total Particulate During Abrasive Blasting Using Copper Slag Abrasive," Dale Stephenson, Terry Sear, Marle Seymour, & Lori Cahsell, *Applied Occupational and Environmental Hygiene*, Vol 17(6): 437-443, 2002

Slag, a glassy waste material from metal smelting, is recommended for abrasive blasting because it usually contains little or no crystalline silica. However, these slags often contain small amounts of highly toxic metals.

Two common slag products, Best Grit® and Nevada Black®, now have been studied under normal working conditions. The amounts of metal contaminants in the slags were below 0.1% and 0.2% respectively, so the manufacturers exercised their right not identify them on the material safety data sheets (MSDS). However, air monitoring done both outdoors and indoors in a vented booth showed workers using the slags were exposed to amounts of toxic metals in excess of the OSHA 8-hour permissible exposure limits (PEL-TWAs). In particular:

- * Both slags generate arsenic and lead aerosols that exceed OSHA PEL-TWAs within 63 minutes of blasting.
- * Nevada Black® slag generates chromium aerosols that exceed the OSHA PEL-TWA within 105 minutes of blasting.
- * Both slags also generate total particulates (dust) that exceed the OSHA PEL-TWA within 15 minutes of blasting.

Clearly, MSDSs for abrasive slags should report toxic substances at levels below the required 0.1% for carcinogens. ACTS no longer recommends slag abrasives unless analyses of toxic metals in amounts below 0.1% are provided and/or unless personal monitoring shows exposures to toxic substances are below the PEL-TWAs.

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WIDELY USED PRINTMAKING CHEMICALS FLUNK CANCER TEST

BNA-OSHR, 32(33), 8/15/02, pp. 790-791

The National Toxicology Program reports evidence of carcinogenicity for two similar chemicals often used in ultraviolet-curable inks, regular printing inks, polymeric resins, acrylic glues, adhesives, and certain building materials. The chemicals, pentaerythritol triacrylate (CAS# 3524-68-3) and trimethylpropane triacrylate (CAS# 15625-89-5), showed clear evidence of carcinogenicity in both male and female mice. The chemicals were chosen for study because they are manufactured in very high volumes in the U.S. and are present in many industrial and consumer products.

Artists should look for these chemicals on their material safety data sheets (MSDSs). However, some art material MSDSs improperly reference ASTM D-4236 instead of listing ingredients.* Artists should ask manufacturers who only reference ASTM D-4236 for more data. If you find your products contain these chemicals, try to substitute safer products for them when possible. If you must use them, practice good hygiene and keep them away from children.

* ASTM D-4236 is a labeling standard which is referenced in the Federal Hazardous Substances Act amendment for labeling of art materials. It is not relevant to the Occupational Safety and Health Administration's rules which require listing of toxic chemicals present in amounts $\geq 1.0\%$, and carcinogens in amounts $\geq 0.1\%$.

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THE POISONING OF AN ALASKAN TEACHER

"Hidden Hazards: Health Impacts of Toxins in Polymer Clays," Vermont Public Interest Research Group (VPIRG), July, 2002

Last month we reviewed the Vermont Public Interest Research Group's study on polymer clays. One side bar on page 7 of this report is worth reprinting here in full.

On October 17, 2000, an elementary school teacher in Alaska suffered acute health problems after walking into a room where Sculpey clay (Sculpey III-blue color) had over-heated when left overnight in a kitchen range. The teacher suffered from headaches, vomiting, fatigue, chest pains, finger numbness, dizziness, a stumbling gait, and other problems. He had to go to a hospital emergency room after suffering from this exposure.

The state of Alaska's occupational health division found that the teacher was exposed to potentially harmful chemicals. It determined that hydrogen chloride and two phthalic acid esters - DOP (Di-octyl phthalate) and BBP -- were "likely products of thermal decomposition." (Thomas E. Stuart, Jr., chief, Alaska Occupational Safety and Health, letter, February 23, 2001)

As part of the investigation, the agency conducted a pyrolytic decomposition study at the OSHA technical Center in Salt Lake City, Utah. According to the inspection report, "during thermolytic decomposition at approximately 300 degrees F, two phthalate esters (DOP and BBP) volatilized from the polymer clay and appeared in the off-gas stream. As the temperature increased to 482 degrees F the production of hydrogen chloride accompanies the volatilization of the phthalate esters." (Alaska Department of Labor, Occupational Safety and Health, "Inspection Narrative," Inspection No. 303694269, January 8, 2001)

The determination that DOP and BBP were the principal phthalates released by overheating the Sculpey modeling clay are consistent with VPIRG's finding that these two compounds are the primary plasticizers present in samples of Polyform Products' Sculpey brand.

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November 2002

Vol. 16, No. 11

THEATER SETTLES FOG LAWSUIT FOR \$410,000

Cynthia Mehl and Kurt Mehl vs. Surf Light Theatre, La Jolla Playhouse, Jim Hultquist, ABC Manufacturing Co., et. al. Superior Court of New Jersey Law Division, Ocean County Docket No. OCN-L-4243-97

In August, 2002, a suit brought by Mrs. Cynthia Mehl and her husband against the Surf Light Theater in New Jersey for alleged lung damage from a theatrical fog effect was settled for \$410,000. Mrs. Mehl refused an earlier settlement offer which included a confidentiality agreement with the Surf Light's Insurance Company because she wanted her case to serve as a warning to others.

Mrs. Mehl, a married mother of four children with a steady work record, was in good health when her daughter was cast in a play at the Surf Light. She volunteered to help with costumes for the production. During an evening rehearsal in August, 1996, Mrs. Mehl was asked to go into the seating area to see how the costumes looked in the fog special effects. She felt ill from the effects and went backstage where additional exposure occurred from fog that drifted there. She went home and sat up all that night because she could not breathe lying down. Shortly thereafter she was diagnosed with reactive airway disease and in the following years, spent much of each day on oxygen. She could only walk short distances and used a mechanical scooter to get around. Although her health has improved, she is not expected to return to normal function.

The chemicals used to make the fog are not fully known in this case. Allegedly, the theater's special effect's designer rented an old machine from a California theater and never checked to see if there was still fluid in the chamber or cleaned the machine. He then purchased a medical grade mineral oil from a local store to fill the machine which is a violation of safety standards of both the oil's manufacturer and of most fog machine manufacturers.

This case demonstrates, however, that a permanent and disabling lung disease can be induced in a healthy person with no prior history of theatrical fog exposure or respiratory problems in a single night of exposure to oil mist and perhaps other chemicals.

ARENA RIGGING: A "MUST HAVE" FOR RIGGERS

Harry M. Donovan, an internationally known expert on arena rigging, announced the release of his practical guide for riggers, managers, and designers. The 700 page text covers all aspects of arena rigging, hundreds of drawings, pictures, and tables, formulas for calculating forces, dimensions, and loads, and two quick reference cards, one with basic formulas and the other with data on the lengths of bridle legs and basket hitches. To order the \$95 text and cards, phone:206/283-4419 or e-mail: riggingseminars@attbi.com.

FABRIC SOFTENERS INCREASE FIRE RISK

Shape Newsletter, Safety & Health in Arts Production & Entertainment, Vancouver
BC. 8/02, p. 2; 64 FR 13126-13141; 67 FR 57770-57773, <http://www.apparel.ca>.
magazine.2000march/Flammability.pdf & www.consumerreports.org.

The Canadian-based *Shape Newsletter* reports that in September of 2001, 65 year-old Janine Humblet of Quebec, died by fire. Her terry cloth robe ignited, most likely from a cigarette. The coroner reported that evidence suggests her robe was made more flammable after being laundered with fabric softener. The coroner believes that fabric softener made the robe burn 7 times faster than normal.

This case is still under investigation by Health Canada. Although fabric softeners make some fabrics more flammable by increasing their fluffiness, it is possible that a build up of softener residue from using large amounts of softener over a period of time may have made this victim's clothing even more flammable.

SOFTENER REGULATIONS. In both Canada and the US, many types of clothing and bedding must be fire retardant. And the *Shape Newsletter* says that Canadian liquid softeners (not dryer sheets) carry a warning not to use them on fire-resistant clothing.

Here in the US, many fabric softeners do not carry warnings about using them with fire retarded fabrics. A call to the US Consumer Product Safety Commission (CPSC) revealed that the CPSC puts the onus on fabric softener manufacturers to test their own products to see if they affect fire retardancy. But the CPSC does not verify that the tests are being done or that the tests are adequate.

CONSUMER REPORTS TESTS. In 2000, *Consumer Reports* magazine published data on fabric softeners. Their tests indicated that greater fluffiness increases the rate at which fabrics burn. As they put it: "Fluffy burns faster than flat" and they recommended:

...avoiding liquid fabric softener with all-cotton clothing made of fleece, terry cloth, or velour. If you want a fabric softener, use a dryer sheet. (To avoid static cling almost entirely--a big reason consumers use fabric softeners--hang synthetics to dry instead of machine drying them with other fabrics.)

CPSC WASHING TESTS. Fire retardancy of fabrics is also reduced by repeated washing. The CPSC requires manufactures of fire retardant products to pass washing tests. These CPSC wash tests were instituted in 1953 and are shockingly outdated. They employ detergents and washing machines that aren't on the market any more. Worse, they require hanging the clothes outdoors to dry. However, modern machine dryers used today also make fabrics fluffier and more flammable. To account for these facts, the CPSC has proposed updated tests in which modern machines driers, and detergents are used. These tests should be instituted soon.

The CPSC also did a few tests of the effects of softeners and found that "one polyester fabric did show reduced flame resistance when a liquid fabric softener was used." Nevertheless, the CPSC's proposed new wash test procedures do not include any provisions for assessing the effects of fabric softeners. ACTS has submitted formal comments to the CPSC on this and other oversights.

ACTS ADVICE FOR THEATRICAL FABRIC & COSTUMES. When clothing ignites, every second counts. ACTS is especially concerned about fire retarded costumes and fabrics used in shows in which on-stage fire effects such as pyrotechnics, torches, braziers, cigarettes, or candles are used. Our advice is as follows:

- * Current data are so limited and the regulations are so vague and unenforced, that no type of fabric softener, neither liquid nor dryer sheet, should be used on fire retarded fabrics.
- * When possible, choose fabrics that are naturally fire resistant such as wool, modacrylic or saran. These fabric ignite but will stop burning when the source of ignition is removed.
- * Since fire retardants wash out in time and the CPSC's current and proposed tests do not extend beyond 50 washings, new fire retarded clothing should be retreated after 50 washings. Old or second hand costumes should be treated at once.
- * Costumes treated with theatrical spray or liquid fire retardants should be laboratory tested and retreated frequently. Avoid skin contact or inhalation of retardant chemicals. Many are toxic.
- * Test for flammability changes when other treatments are used such as paints, dyes, spot resisters, wrinkle relaxers, etc.

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HIGH SCHOOL PAYS \$125,000 TO DAD INJURED IN THEATER PIT FALL ACCIDENT

Loveder v Rockford Public School, Court File No: 00 08114 NO

Almost 3 years ago, Mr. Christopher J. Loveder's daughter was cast in a play to be held in the public auditorium of the Senior High School in Rockford, Michigan. Mr. Loveder volunteered to help build sets for the show. During a technical rehearsal on February 12, 2000, the stage was darkened and black lights were used to make the fluorescent-painted scenery glow. It is alleged that the director then asked Mr. Loveder to look at the scenery from the audience area. He came out of a brightly lit scene shop on back stage right, walked toward the front of the darkened stage, and fell about 9 feet into the lowered orchestra pit. Mr. Loveder's injuries included a compressed vertebrae, four broken ribs, a serious closed head injury, and bruised kidney and spleen.

It was alleged that failure to place a rail, glow tape, or other safety device at the edge of the pit to warn people created a defective and dangerous condition. Pit railings, in fact, did exist and were stored in the theater. These rails were part of a safety device designed to make it impossible to electrically activate the mechanism that lowers the pit unless the rails are in place. However, this device had been bypassed by paper clips when the theater was first opened and the system had never been used.

In a court-ordered mediation in November 2001, a panel issued a non-binding award of \$125,000 to Mr. Loveder. The matter concluded in January, 2001 for that amount. This case is a reminder that high schools are not professional theaters and precautions such as rails and glow tape should be used where ever fall hazards exist.

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SILVER MAKES MONTANA MAN BLUE

The Associated Press, (quote from Daily News) Oct 3, 2002, 64 FR 44653-8, Aug 17, 1999, C&EN, Jan 24, 2000, p. 80, ACTS FACTS, Oct, 1999 & Feb 2000

The following Associated Press story appeared in many US papers:

Montana's Libertarian candidate for Senate has turned blue from drinking a silver solution that he believed would protect him from disease. Stan Jones, a 63-year-old business consultant and part-time college instructor, said he started taking colloidal silver in 1999 because he feared Y2K disruptions might lead to a shortage of antibiotics. He made his own concoction by electrically charging a couple of silver wires in a glass of water. He no longer takes the stuff, but the skin condition is permanent although not generally serious.

ACTS FACTS readers may remember that we covered colloidal silver in the past and some of our information clarifies issues in this story. For example, this man had to begin making his own concoction in 1999, because in August of that year, the Food and Drug Administration (FDA) banned the sale of colloidal silver. The FDA found no evidence that silver was either safe or effective.

As a result, the charlatans that were selling colloidal silver immediately began marketing small electrolytic kits so that people could manufacture their own. Their advertising did not mention the FDA ban and only said that consumers could now get this wonder drug "at a fraction of the price" in health food stores. This device is probably what the Montana man was using.

ARGYRIA. The FDA ban on colloidal silver also included ample evidence that it causes "argyria," a permanently disfiguring disease in which the skin and/or the whites of the eyes turn blue or black. ACTS knows of this disease because it has occurred in artists who inhaled fumes during silver soldering or casting.

Argyria also made Mr. Jones the only blue senatorial candidate.

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GENIE LIFT ACCIDENTS: AFTER THE FALL

Citation and Notification of Penalty, CALOSHA, Inspection Number: 300891314,
06/27/2002 - 08/21-2002 & BNA-OSHR, 32(42), 10/24/02, pp. 1005-6.

Powered personnel lifts like the Genie® are hazardous pieces of equipment. Two accidents, one in California and one in New York, illustrate some legal and regulatory aspects of such accidents.

CALIFORNIA. The San Francisco Opera has had a number of safety problems that were reported in ACTS FACTS (12/97, 10/01, 4/01 & 6/02). Now a lift accident has occurred which put an Opera stage hand, Francis Kenny, in a coma. Francis Kenny is now recuperating at home, and we wish him a speedy recovery.

At the time Kenny fell, the Opera had already been issued two previous CalOSHA citations and they were contesting citations for failure to guard fall hazards on rehearsal sets. The California Occupational Safety and Health Administration (CalOSHA) then sent the Opera yet another "Citation and Notification of Penalty" that included a "Wilful Serious" violation of the rules for Operating Elevated Work Platforms (T8CCR 3646(b)). This rule says: "Units shall be assembled, used, and disassembled in accordance with manufacturer's instructions." The citation reads:

At the time of the incident on 6-27-02, the Upright UL-40 was not used in accordance with the manufacturer's instructions. When the operator was approximately 22 feet high, on the elevated platform, two of the four outriggers [projecting metal braces] required for the unit to be safely used, were manually removed and the unit was later manually removed. As a result, the unit tipped and the operator sustained serious injuries.

CalOSHA proposed the \$70,000 maximum penalty for the misuse of the lift. CalOSHA also proposed a \$210 penalty for general violation of their rule requiring lift training (T8CCR 3646(c)). This rule requires that "Units shall be assembled, and used only by personnel who have been trained in their use." Employers in California and most other states are in violation of lift rules if they do not provide formal worker training on the use of the equipment.

If this were not enough, CalOSHA proposed an additional \$3825 penalty for a "Serious" violation of the head protection rules. In California and in all states in the US, work above head level requires that everyone in the area wear hard hats. This violation has been abated and Opera workers will now be wearing hard hats.

CalOSHA proposed another small (\$210) penalty for failing to have an Illness and Injury Prevention Program bringing the total to \$74,245--a significant budget item for the Opera.

NEW YORK. In New York there was an split decision in the Supreme Court Appellate Division in a suit brough by stage hand Tracy Adair who was injured in a lift accident. According to a report in the *Bureau of National Affairs* (10/24/02), Adair was focusing lights above a temporary stage for Bestek Lighting and Staging Corporation. There were no outriggers in place at all and the lift fell over seriously injuring Adair.

Since workers' compensation provides very small awards for serious injuries, Adair filed under 240(1) of the state labor law which allows workers on construction sites to sue their employers. However, in a three-to-two split decision, the court declared that Adair's injury is not covered under the statute because it did not happen during the construction, but after the lights were already fully installed and all other stage construction work was complete.

The dissenting two judges opined that Adair's suit should go forward because she "was a member of a team that was assembling a stage that would be used once." They added, "This was a three-day construction project, and there is no useful distinction, under the facts presented, between the erection of this structure and the preparation for its use."

ACTS believes the dissenting opinion to be the proper one, but nonetheless, Adair will not be able to be compensated above the small amounts that workers' compensation provides.

LIFT RULES. There are many safety rules that apply to lifts.

These particular accidents remind us of four important ones:

- * All outriggers must in place whenever the lift is in use;
- * Lifts should be lowered each time before they are moved;
- * If a lift is operating near you, leave the area or wear a hard hat; and
- * all lift workers must be formally trained in its use.

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ARTIST DIES FOR HER ART?

The Globe and Mail, Toronto, ON, Canada (globeandmail.com), Friday, 6/24/02
The following item was sent by Canadian reader, Ted Rickard.

HANOVER, GERMANY. French-born artist Niki de Saint Phalle has died in California at the age of 71 from pulmonary disease after a long illness, Hanover officials have announced. Her family said her condition resulted from the long-term inhalation of noxious substances she used in her art, much of which is on display in Hanover.

She was best known for her colorful, oversized sculptures that embraced the modern and the primitive. She shot on to the international art scene in 1964 with her famous "Nanas" sculptures, a series of exaggerated "earth mother" statues. She died on May 21. *AFT*

ACTS is interested in the materials this artist used in making her art. If any reader is familiar with her work or knows how to contact her family, we would appreciate hearing from you.

=====

LEAD SKIN ABSORPTION: NEW DATA

(Sources: See footnotes)

Historically, health professionals assumed that skin contact with lead dust was not a significant route of exposure. Then two studies, one in 1988 and the other in 1994 showed that radio-labeled powdered lead, lead oxide, and lead nitrate applied to the skin of workers rapidly disappears beneath the skin's surface.^{1,2,3} In these two studies, lead was applied to the skin for 12 hours and 24 hours respectively, which apparently was not long enough to see any corresponding rise in blood lead in the workers. Exactly where the lead went once it was absorbed was not clear.

A new study this year showed where skin-absorbed lead goes in the body. Researchers at a Taiwan University Hospital studied both the urinary lead content of rats after skin application of four lead compounds (lead sulfate, lead oxide, lead metal, and lead stearate) and the blood lead of skin-exposed human subjects.⁴

In rats, after 12 days of application, the amount of lead in urine significantly increased for all the lead compounds. Clearly, in the rat, lead was absorbed through the skin, went into the blood, and was eliminated by the kidneys.

In 10 battery workers, a daily occupationally lead-exposed area on the back of the hand was covered with tape throughout the study. Each day for 10 days the tapes were stripped off and the area immediately covered again to prevent new workplace lead from depositing. After 10 days, the cells stripped by the tape would represent layers that were deep in the epidermis at the onset of the experiment. Analyses of these skin cells found lead in all 10 daily samples. Researchers then found that the total amount of lead in all the samples representing both shallow and deep layers of the epidermis of each worker significantly correlated with that worker's blood lead level. This demonstrates a clear dose-response relationship between skin exposure and blood lead.

The data was used to estimate that a typical lead workers' body burden of lead from skin absorption is in the range of 10-39% of their inhaled dose. In hot countries where workers wear short sleeved T-shirts, they estimated that 27% of a man's skin area could be exposed which could raise blood lead to 56.6 micrograms per deciliter ($\mu\text{g}/\text{dL}$) per shift! (The OSHA limit is 40 $\mu\text{g}/\text{dL}$.) Clearly, protecting the skin from lead dust exposure is warranted.

-
1. Lilley, S.G., T.M. Florence, and J.L. Stauber: The use of sweat to monitor lead absorption through the skin, *Science of the Total Environment* 76:267-278 (1988). (Done under a grant from the Australian National Occupational Health & Safety Commission)
 2. The study above was also presented in *The Lancet*, letters: "Skin Absorption of Lead," July 16, 1988, p. 157-158.
 3. Stauber, J.L., T.M. Florence, B.L. Gulson, and L.S. Dale: Percutaneous absorption of inorganic lead compounds, *Science of the Total Environment* 145:55-70 (1994)
 4. Percutaneous Absorption of Inorganic Lead Compounds, Chee-Ching Sun, et. al., *AIHA Journal*, Vol. 63, September/October 2002, pp. 641-646.
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January

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