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 2014 **Vol. 28, No. 01**

ACTS wishes you a healthy, happy 2014.

LET'S ELIMINATE UNSAFE SPRAY OPERATIONS IN 2014

SOURCE: *Las Vegas Sun*, Spray painting ignites fire at Queensridge clubhouse; worker burned
By Ana Ley, Wednesday, Dec. 11, 2013, 10 p.m.

An article in the Las Vegas Sun gave brief details of two spray painting accidents. On December 11, a worker was seriously burned while spray painting the clubhouse of a homeowner's association in western Las Vegas Valley. A group of workers were painting the inside of the building with a commercial paint sprayer and had placed thin plastic sheets around the area to prevent overspray from reaching other areas. The accumulated paint mist was apparently ignited by the pilot light inside a natural gas fireplace in the building.

The article also described a similar accident that had occurred on September 10, 2011. A woman was spray painting on the patio of her apartment using aerosol paint cans when the spray mist and vapors entered a nearby water heater closet and ignited. The woman was taken to the hospital with burns to her legs.

COMMENT. Every year I see dangerous paint spray operations in scenic and fine art studios, film locations and private studios. And in three decades, I have never seen a university art or theater department without evidence of unvented spray paint use on floors, walls, stairwells or in other unsuitable areas. Twice I have seen an electrical service closet used as a spray room.

Some of the spray projects in theaters and film locations have also involved illegally set up "booths" made of plastic and propeller-type exhaust fans. This combination can be deadly if a high concentration of either solvent vapors or paint particulates accumulates in the air and the fan creates a spark or a static discharge. Any source of heat or sparks can ignite the airborne paint. And in several cases, I have seen these illegal booths near welding operations.

People may think that explosions and fires are not an issue if they spray water-based paints. But these products always contain some solvents. The solid particles of paint spray are also explosive in the right concentrations. An article in the September 2013 issue of *ACTS FACTS* on Inaccurate Flashpoint Values on MSDSs found that tests show these products have flash points in the combustible or flammable range.

Let's resolve this year to end this dangerous practice. If there is no proper spray booth, don't spray. After all, brushes will do the job. It just takes more time and skill, but it is worth the effort.

PROTECTION FROM ISOCYANATES REQUIRES THE RIGHT GLOVES

SOURCE: Accepted for publication in the *Journal of Occupational and Environmental Hygiene*: DOI: 10.1080/15459624.2013.862592. Understanding Factors that Influence Protective Glove Use among Automotive Spray Painters, Diana Ceballos, et al.

Inhalation of chemicals called "isocyanates" in two-component urethane products can cause a disease which can be ultimately fatal called "isocyanate asthma." It is also known that this disease can be caused by becoming allergic to isocyanates from skin contact with these products. Avoiding skin contact is crucial since these Part A/PartB urethanes are commonly used in art and theater crafts. Included are mold and modeling products, paints and coatings, spray and aerosol can foam products and more. Even some 3D printer processes consolidate the powder models with isocyanates.

Now a study (see source above) of dermal contact with isocyanate-based coatings used in sprayed automotive coatings in a collision repair facility has looked at this issue. The product in the study contained two common isocyanates in two different forms: 1) **monomeric** (**single molecule**) and 2) **oligomeric** (**polymerized by connecting two or more molecules**).

These big words are important to understand. Many A/B urethane products sold today are touted as safe because the isocyanates in them are not regulated. To avoid regulations, the manufacturers have taken the regulated single molecule isocyanate chemicals and reacted them together. Once they have done this, the resulting chemical is now a "polymer" and it is not regulated in this country.

In the United Kingdom and Australia, this ruse does not work. These countries regulate all isocyanates by the number of active isocyanate groups on them, not what molecule those isocyanates are stuck onto. This is an approach that should be adopted here.

Polymerizing does reduce the amounts of airborne isocyanates because the polymer molecules are heavier, but this has no effect on their ability to sensitize by skin contact. It is important for workers to all know that "not regulated" should never be interpreted to mean "not toxic."

The authors of the study noted that most of the auto workers used thin (4-5 millimeter) rubber latex gloves or the thick 14 millimeter latex gloves. These gloves not effective at preventing dermal exposures when spraying isocyanate paints. The authors say a better choice would be medium thickness 6-8 millimeter nitrile gloves. They also suggest that shops have some of the heavier butyl gloves on hand for mixing or other processes where urethane product liquids will be encountered, since dual protection from both isocyanates and many other solvents would be needed.

The authors also expressed concern that some glove manufacturers sell rubber latex products in the typical blue color associated with nitrile. Workers may think these blue rubber gloves are nitrile.

ACTS RECOMMENDATIONS

1. All studios and shops where A/B urethane products are used should have on hand the 6-8 millimeter thick nitrile gloves in bulk and a few pairs of the more expensive butyl gloves for those processes where excessive and prolonged skin contact with isocyanates and solvents may occur.

2. Do not assume there is color coding that will identify glove types. Read the labels carefully.

3. Inform workers about long term hazards of all isocyanate chemicals, both in molecular and prepolymer forms. For a training data sheet on urethane products, send an SASE to ACTS.

3. Skin contact with finished work also should be avoided for a week or two since there are now studies showing that complete polymerization may take as long as two weeks.

When processing the recycled old newsprint, including magazines, directories, office waste and other printed materials, the inks containing PCBs are removed from the pulp fiber. Ultimately, the majority of these residual PCBs end up in the recycler's wastewater that is discharged from the plant. The petition suggested two actions for the EPA to take in this regard.

> *Suggestion #1: Eliminate all federal exclusions or exceptions for inadvertently formed PCB's as a byproduct or impurity in chemical manufacturing processes. Products of such processes shall have non-detectable levels of PCBs using EPA Method 1668.*

ACTS concurs with this suggestion. As pointed out in the petition, there has been absolutely no action by the pigment industry since the 1880s to upgrade synthesis methods in order to eliminate inadvertently generated PCBs. Without regulation, there is no incentive for them to upgrade.

> *Suggestion #2: Monochloro-biphenyls and Dichloro-biphenyls should be excluded from total PCB regulation due to lower potential for bioaccumulation and human health toxicity.*

ACTS does not agree with this second suggestion. While there is evidence of a shorter life for these PCBs in the environment, there is a paucity of data on which to base claims of lower toxicity to humans. Far more study should be required before excluding any of the PCBs.

COMMENT. Today, many pigments are manufactured in China and other countries where control of synthesis is even less likely. Instead, production methods should be upgraded and chemists should use synthesization pathways that do not employ chlorinated precursors. And this does NOT mean replacing the chlorinated chemicals with other halogens (bromine, fluorine, or iodine) as they did when PCBs were banned in 1978. At that time they replaced the poly*chlorinated* biphenyls with poly*brominated* biphenyls and poly*brominated* biphenyl ethers–chemicals now known to also be toxic and persistent in the environment.

Artists use these same pigments. They should not fear that new regulations will limit their access to these colors since the cost of retooling is a fraction of the profits from the billions of pounds sold yearly. Artists are also exposed to small amounts of PCBs by skin contact and inhalation.

1. Inadvertent Polychlorinated Biphenyls in Commercial Paint Pigments, Dingfei Hu and Keri C. Hornbuckle, *Environmental Science and Technology*. 2010 April 15; 44(8): 2822–2827.

2. Focus section, title: Nonlegacy PCBs, *Environmental Health Perspectives*, volume 121, number 3, March 2013 (an article summarizing the information from many articles on this subject).

3. Petition-August 20, 2010 from: Inland Empire Paper Company, Spokane, WA; Spokane Riverkeeper, Spokane, WA; & The Lands Council, Spokane, WA. Docket ID No. EPA-HQ-OPPT-2009-0757–Comments on Polychlorinated Biphenyls (PCBs); Reassessment of Use Authorizations Federal Register Volume 75, No. 66/4-7-10/Proposed Rules

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 other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: John Fairlie, OES.

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ISSN 1070-9274

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PAINT PIGMENTS: SOURCE OF PCB AIR & WATER POLLUTION

A paper published in 2010 in *Environmental Science and Technology*,[1] discusses a particular PCB (polychlorinated biphenyl) called PCB11. This PCB11 was found in air samples collected in Chicago, Philadelphia, the Arctic and several sites around the Great Lakes. There are other PCBs in the air, but PCB11 is important because it was not present in most products banned in the 1980s. In other words, this PCB11 is coming from some new source.

PCB11. There are 209 possible PCB configurations depending on where the chlorine atoms are on the 10 different sites available on the biphenyl molecule that is in the center of a PCB. These 209 different PCBs are called "congeners" and are numbered from 1 to 209 with the small numbered PCBs containing the smallest number of chlorine atoms.

PCB11 is the congener 3,3'-dichlorobiphenyl. It has only two chlorine atoms. PCB11 was the fifth most concentrated PCB in the air in Chicago and it was found throughout the city suggesting that it was volatilizing from common outdoor surfaces. When it was also found in waste water from paint manufacturing facilities, researchers hypothesized that it could be coming from paints.

To test their theory, the authors measured PCBs in 33 commercial paints from three local paint stores. The samples were analyzed for all 209 PCB congeners using gas chromatography with tandem mass spectrometry. More than 50 PCB congeners including several dioxin-like PCBs were detected including PCB11. The PCB congeners, including PCB11, were detected in samples of azo and phthalocyanine pigments which, are commonly used in paint, inks, textiles, paper, cosmetics, leather, plastics, food, art materials and more. These findings suggest the source is inadvertent production of specific PCB congeners during the manufacturing of paint pigments.

Most currently commercially-available organic pigments belong to four different groups:

* azo pigments & lakes (soluble pigments or dyes precipitated on inorganic metal salts),
* phthalocyanine pigments,
* polycyclic pigments, and
* heterocyclic pigments.

Commercially available pigments today, and the processes used to make them, are chemically identical to those produced when they were first synthesized in the middle and late 1880s. It has long been known that manufacture of these pigments creates PCB and dioxin byproducts. And since PCB11 is uniquely prevalent in the mixture of PCBs generated in pigments synthesis, and since types of PCBs banned years ago contained little or no PCB11, researchers conclude that this PCB11 congener can be used as a marker for PCB emissions from new sources like these pigments.[1,2]

EPA IS PETITIONED. The Environmental Protection Agency (EPA) has regulations (40 CFR 761.80) restricting PCBs in diarylide and phthalocyanine pigments. When these pigments are either leaving manufacturing sites or being imported into the United States, the total PCB concentrations should be less than 25 milligrams per kilogram (or parts per million–ppm) with a 50 ppm maximum concentration. But even at these low levels, the researchers surmise that the extensive use of these pigments could account for the amounts of PCB11 found in the air in Chicago.[1]

A petition was sent to EPA in August of 2010,[3] asking for additional regulations on these pigments and dyes. The petition was authored by three Spokane, Washington entities, one of which was the Inland Empire Paper Company. The petition noted that during the 1970s when Inland was making all-virgin paper from wood, there were no PCBs in their waste effluent. But that changed after consumer demand and California regulations required them to add recycled paper to their product.

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February 2014 **Vol. 28, No. 02**

FRACKING: THE REAL PROBLEM

SOURCE:*C&EN*, January 20, 2014, p. 4.

The January 20th issue of *Chemical & Engineering News* has a letter to the Editor from Victor J. Reilly, Aiken S.C. Kudos to you,Victor. Your reasoning backs up what I've been saying for years.

Mr. Reilly notes that the loss of methane in hydraulic fracturing reported by the National Oceanic and Atmospheric Administration in their air tests is 10 or 20 times that measured at the wellhead. He says we need to ask "whether the disruption of shale releases far more methane from the explosive disturbance of the shale than is measured at the wellhead."

This has been my objection all along. As bad as the trade-secret toxic fracking chemicals may be, they are not the major issue. Instead, we need to understand that fracking cracks and shatters a shale bed deep under ground that contains both gas and oil in varying amounts. All of the crude and gas chemicals in that rock is now free to migrate. Only a portion of the gas (or oil) is sucked up to the surface wellhead. The rest of the thousands of chemicals will migrate at speeds and in directions dictated by their molecular weights and the types of geological formations and soils above.

The methane gas measured by NOAA in the air, the methane and ethane gases measured by EPA recently in Texas well water, as well as the gases and solvents found in Wyoming and Pennsylvania fracking area water, are just the first evidence of the chemicals that have escaped. First we will see the gases, then the lighter molecular weight solvents, and so on. Some of the heavier oil chemicals won't show up for years or even decades, but show up they will.

Fracking is really the deliberate creation of massive underground gas and crude oil releases.

UPDATE ON BIC CHILDREN'S PEN-POINT LEAD CONTENT

SOURCE: http://www.regulations.gov/#!documentDetail;D=CPSC-2013-0016-0014.

The June, 2013, issue of *ACTS FACTS* covered BIC's application for an exemption for the nickel/silver alloy pen nibs intended for use in ball point pens intended for children age 5 and up. The application revealed that these nibs contained an average of 8720 parts per million (ppm) lead. This is far from the new Consumer Product Safety Improvement Act's (CPSIA) 100 ppm limit.

Our primary concern at that time was the loopholes in the CPSIA which allow manufacturers to exceed the 100 ppm lead limit. One of these is for manufacturers to claim that it is not "feasible" to get the lead this low in a particular product. Another path to exemption is to try to prove that a child's exposure to lead in the product would result in "no measurable effect," which the CPSC has defined as increasing a child's blood lead by 0.8 micrograms per deciliter (µg/dL) or less. But research shows that every µg/dL rise is associated with a small decrease in children's IQ.

BIC's justification for an exemption was based on a claim that there is no substance other than nickel/silver alloy that will work with their solvent-based inks, so the limit is not "feasible" for them.

Now BIC has found a Japanese supplier of stainless steel nibs that tested under 100 ppm lead that will work, so feasibility is not an issue. However, BIC's attorneys have written the CPSC again claiming that the Japanese manufacturer says that the lead is an impurity in their stainless and some batches of nibs could test as high as 300 ppm. BIC says that they have made some of their new children's pens with the stainless nibs, but that it was not until last month that they knew for sure they could use these points in their manufacturing process. So rather than jeopardize their spring launch of this new children's product, they are asking CPSC to grant **"an exception for continued use of it[s] nickel silver alloy point"** that will **"be limited to five years."**

Oh really? Perhaps a request for an exception for steel points that might exceed the limit by 200 ppm for five years could be considered, but under no circumstances should they be allowed to sell pens that contain over 8000 ppm of lead to children for the next five years. And the fact that nickel is a sensitizer and carcinogen is a problem for ACTS.

Toxicologist Brian C. Lee has our thanks for following this amazing story. Brian also says that young children really don't need ball point pens. We suggest that teachers and parents not purchase these BIC pens for children until and unless they meet the current CPSIA limit of 100 ppm for lead. And now that we know that most BIC pens have nickel/silver nibs, let's keep them away from kids.

MT. SINAI OCCUPATIONAL MEDICAL CLINIC'S WOMAN OF THE YEAR

Monona Rossol was chosen by Mount Sinai's Selikoff Center for Occupational Health to be the recipient of their 2013 Woman of the Year award for her work on Worker's Health and Safety. Chairman Lawrence D'Addona presented the award at the December 12th Board of Advisors meeting.

COMMENT: I have been associated with this clinic since the early 1980s when the founder, Irving J. Selikoff, a physician and expert on asbestos, used to have me lecture on art and theater occupational hazards at the end of each year to his graduating class of occupational medical doctors.

BUY FIREWORKS INGREDIENTS AT A POTTERY SUPPLY STORE?

SOURCE: *American Fireworks News*, No. 388, January 2014, pp. 4-5 Vists to the Pottery Supply Store.

In an article titled: "Visits to the Pottery Supply Store," author/fireworks maker, Ian von Maltitz, says that "nothing beats" dry pottery clay for ramming nozzles (to find out what these are, see: www.youtube.com/watch?v=LGwXX4RHL_k). Various grades of grog are also recommended for special nozzle problems. And pottery stores "also stock other items such as scales and sieves."

In addition to these products, Ian tells his fellow fireworks enthusiasts that "pottery supply stores typically supply a range of useful pyro chemicals." And for the next page and a half, he lists all the useful chemicals and substances in alphabetical order with comments on their uses in fireworks manufacture. Included are: barium carbonate, barium sulfate, boric acid, bentonite and many other dry clays, bismuth subnitrate, cryolite, CMC (carboxymethyl cellulose or cellulose gum), copper carbonate, copper oxide, copper sulfate, calcium carbonate, calcium nitrate, dextrin, gum Arabic, grog, iron oxide, kyanite, lithium carbonate, manganese dioxide, potassium dichromate, potassium nitrate, sodium nitrate, sodium silicate, strontium carbonate, sulfur and zinc oxide.

The next time you see the smoke from fireworks or colored pyrotechnics, think about this list. Then add lead, arsenic, cadmium, mercury, rare earth metals and other chemicals no longer found at pottery stores but which, none the less, are often in fireworks and pyrotechnic smoke.

LUNG DAMAGE FROM SMOKING TOBACCO, MARAJUANA & MORE

CBS News/World, AP wire Jan 27, 2014, Eric Lawson, former Marlboro Man, dies of smoking-related disease

TOBACCO: On January 27, 2014, former Marlboro Man, Eric Lawson died at age 72 from chronic obstructive pulmonary disease (COPD), a disease commonly seen in smokers. Lawson smoked since age 14 and appeared in Marlboro ads from 1978 to 1981. He had a respectable film career as a bit-part actor with credits on Baretta, The Streets of San Francisco, Charlie's Angels, Dynasty and Baywatch. According to his wife, Susan, Lawson's career was ended in 1997 by injuries sustained on the set of a Western film. (This makes his story of interest to ACTS for both his illness and as one more accident statistic in the film industry.)

Sadly, Lawson is only one of several actors and models who pitched Marlboro brand cigarettes who have died of smoking-related diseases. They include David Millar, who died of emphysema in 1987, and David McLean, who died of lung cancer in 1995.

Still, some people persist in smoking. And some people don't understand that smoke from any burning material based on carbon, such as plants, trees, coal, oil or plastics, will all contain lung damaging chemicals and carcinogens. Cigarettes are only different because the smoke contains a mild drug called "nicotine." This drug is not a carcinogen, not very toxic at the doses in cigarettes, yet is powerfully addicting. But smoke from any burning leaf will cause the same lung problems.

HERBAL CIGARETTES. As the general consciousness of tobacco hazards was raised, actors began looking for a safer alternative to stage smoking. I saw many college theater departments and production companies allowing herbal cigarettes as a substitute. These are not safer with the exception that they probably are not as addicting. And there have been a number of cases of serious illness from uncontrolled additives to these unregulated items.

MARIJUANA. I understand and sympathize with the need for better pain-controlling drugs that is leading to steadily increasing legalization of marijuana. But at the same time, the smoke from marajuana should be as restricted in public as tobacco smoke. It is damaging to the lungs, just as any other smoke would be. Parents should not be smoking at home if they have children. And certainly, smoking marijuana on stage or in the dressing rooms is improper and unfair to other actors.

Since the purpose of legalization is to provide access to tetrahydrocannabinol (THC), it would be wiser to medically purify and administer THC rather than to license many small entrepreneur growers. There is little control over the growers' choice of fertilizers and soils, the plant containers, cleanliness, or the source of the water. Plants draw up toxic metals and even hazardous bacteria and microbes through their roots. Contamination with pathogens during harvesting, processing and packaging is also possible. If we can't always rely on the purity of drugs manufactured in FDA supervised laboratories, we can expect in time similar problems will be seen with medical marijuana.

E-CIGARETTES. In the December 2013 *ACTS FACTS,* we covered a study that found nanoparticles of metals and other substances in the mist produced by these devices that mimic tobacco smoke. However, cigarette and other types of smoke also contain nanoparticles which are now thought to be the cause of an increase in strokes and heart attacks seen in fire fighters.

E-cigarettes will also contain glycol or oil mists, some aldehydes, which may also be carcinogens, other break down products from heated glycols or oils, nicotine and fragrances. However, e-cigs can be purchased without nicotine and fragrances. And if the actors do not inhale the mist, their exposure to this small amount of toxic chemicals is a vast improvement over actual smoke. But ACTS does not endorse e-cigs as a nicotine delivery system for these and many other reasons.

LESSONS FROM THE WEST VIRGINIA CHEMICALSPILL

The Washington Post, W.Va. chemical spill poses a new test for lawmakers Joel Achenbach, January 19, 2014

If you've been in a coma since January 9th, you may not have heard of the massive chemical spill into a river upstream of Elk, West Virginia, which caused 300,000 households to be without water for weeks. I have no intention of covering all the facts of this case, but there are some points that I don't think were made clear in most of what was published in the news.

The best article was by Joel Achenbach in the *Washington Post*. Instead of using the old misleading Material Safety Data Sheet referred to by other reporters, he obtained the latest Safety Data Sheet (SDS) from Eastman on the 4-methylchlcohexane methanol in this spill. This SDS used the phrase "no data available" 152 times. Joel explained that, like most of the over 80,000 catalogued chemicals under the Toxic Substances Control Act, there is almost nothing known about this chemical.

The words "no data available" are required on proper SDSs whenever a test which should be reported has not been done. Our old material safety data sheets use confusing statements like "not regulated" or "none known." And on the Eastman MSDS the exposure standards for plain methanol were listed instead of telling users that there was no data and no standards on this chemical.

Unfortunately, our federal OSHA will continue to allow our SDSs to use misleading terms and phrases. But Eastman is an exporter. Their overseas customers demand a real SDS. If other reporters had taken the time to find it we might not have been flooded with company and official propaganda.

The lack of informed oversight from the press enabled health officials to declare the chemical was "not very toxic," and to calculate a "safe" water limit for the substance without a scrap of chronic toxicity data. Based on this limit, they told residents when it was safe to open their taps again.

Worse, neither Joel nor the officials knew at that time that there was a second, undisclosed, untested chemical present in the product that spilled. This is a complex polyglycol ether that is probably toxic and which reportedly breaks down in time in water into other chemicals including formaldehyde.

The problems with safety oversight were further demonstrated when the US Chemical Safety Board brought in their team of investigators, one of whom had to stop his work on the West Fertilizer plant explosion because CSB has so few personnel. When is the public going to understand that if we don't invest in chemical testing and regulatory agencies, we can't possibly be safe?

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff:: Kathy Frost, John Fairlie, OES.

ACTS' financial support is primarily earned income from industrial hygiene services, lectures, and courses provided at below market value to schools, art and theater organizations, museums, and other art-related entities. Other income is from sale of publications and unsolicited donations. ACTS takes no money from industry or any party having a financial interest in our opinions about art or theater products.

CREDIT: ***ACTS FACTS***,
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ISSN 1070-9274

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March 2014 Vol. 28, No. 03

FIRE RETARDANTS: GOOD OR BAD?

Editorial

In our July 2012 *ACTS FACTS*, we provided detailed information about the toxicity of the brominated fire retardants. We agreed with many scientists and environmental organizations that these compounds are now found throughout the environment and in our bodies. We support the activists, but are concerned about the way in which they are working to accomplish their goals.

FIRE RETARDANTS ARE NOT NEEDED? The activist's web sites use videos and arguments claiming to prove that it is not necessary to fire-retard the urethane foam padding in upholstered furniture. They have been the major force behind a newly revised California law banning the use of toxic and cancer-causing flame retardants in furniture, effective January 1, 2014.

Manufacturers can complyl with the California law banning certain fire retardants by methods such as using fire-resistant fabrics over the foam or by using a layer of a fire barrier such as polyester batting. These methods will allow furniture to pass the fire safety test in the new law which requires the upholstered furniture sold in the state not to continue to "smolder" 45 minutes after a lit cigarette is placed on it. But the original test required the furniture to resist ignition from a dropped lit candle.

While smoking materials are to blame for far more home fires than candles, the National Fire Protection Association says that candles caused 3% of reported home fires, 5% of home fire deaths, and 7% of home fire injuries in home fires in 2010. There also are many other ways in which the urethane foam padding may be exposed to a lit cigarette if it is worn or torn. The problem is that the commonly-used urethane foam, once it ignites, burns exceedingly fast and hot, and the smoke contains cyanide gas. This combination greatly diminishes the chances of people getting out alive.

As an example, I repeatedly reviewed the video and other forensic materials from the Station Nightclub fire in Rhode Island in preparation for my expert testimony in this case. The speed at which the fire spread across the whole surface of the urethane foam lining the band shell was so fast that, even with better exits, many people would not have survived. If that band shell foam had been lined with fire-retarded acoustical foam instead of look-alike untreated urethane packing foam, 100 people would probably be alive today and hundreds more would not be scarred for life. ACTS cannot endorse the use of unretarded urethane foam, in any form, in homes or public buildings.

ACTIVIST'S USE OF THE TERM "FIRE RETARDANTS." Whether intentional or simply due to common misreading of the activist's literature, the public seems to think that all fire retardants are bad. Instead, activists should make it clear that they are concerned about the organic [based on carbon] chlorinated and brominated fire retardants (and some organophosphates). They need to emphasize to the public that there inorganic fire retardants that have been used for almost a century which do not out gas chemicals into our homes. Some of these include:

Aluminum oxide, magnesium oxide, zinc and other metal oxides and compounds.*
Inorganic phosphorous compounds
Boron-containing compounds
Ammonium compounds (* antimony oxide and other toxic oxides are excluded)

While only a few of these are compatible with urethane foam as it is currently manufactured, industry should be exploring ways to incorporate the safer inorganic fire retardants into urethane and other plastics. And these inorganic chemicals also have been studied for toxicity to varying degrees.

FEAR OF FIRE RETARDANTS. The fear of fire retardants generated by the activists is spilling over into the theatrical community. I'm finding it necessary to explain to technical theater workers that the inorganic fire retardants that they spray or paint onto fabrics and items for use on stage can be used safely with proper precautions. They need to continue to use the retardants and insure their materials meet the fire safety real open flame test for curtains and set materials.

LESSON FROM HISTORY IGNORED? The activists ignore lessons from fire retardant history. To review, the first plastic fire retardants were the polychlorinated biphenyls (PCBs) in use roughly from the 1950s until manufacture was banned in 1979. Anticipating this ban, industry created substitutes for PCBs by replacing the chlorine atom on these chemicals with bromine to create polybrominated biphenyls (PBBs). In 1973, thousands of pounds of a PBB called "FireMaster BP-6" was accidentally sold to Michigan Farms labeled as animal feed. The chemical got into the animals, their meat, eggs, and milk and into people. PBBs were found to be as toxic as PCBs.

The PBBs were only briefly on the market when industrial chemists created an almost identical product by adding an oxygen in the middle of the PBB molecule. These new chemicals are the polybrominated biphenyl ethers (PBDE)--the chemicals that the activists are now attempting to ban.

Unless the new California law demands disclosure and toxicity testing of any chemical used to fire-retard the fabric and foam, there will be a new untested chemicals in our products. And each time industry develops substitutes, there is a period of time they declare the new chemicals to be trade secrets. Activists and the public will not even be able to identify or evaluate their safety.

SUMMARY: ACTS believes that:

1. Under no circumstances should the fire safety standards and tests be weakened.

2. Toxicity testing of any new or untested fire-retardant chemicals must be required prior to their use. (This should encourage use of inorganic retardants which have been tested.)

3. Manufacturers must disclose the chemicals and/or substitute materials (e.g., polyester) they have used to meet the fire standards. This includes disclosure of any method or trade secret chemical used to meet the tests.

EPA OPINION ON GLAZE & GLASS COLORANT LOOK-ALIKE?

SOURCE: 79 *FR* 6470-6475, 40 CFR Parts 9 & 721, SNUR

The *Federal Register* routinely publishes the Environmental Protection Agengy's (EPA's) Significant New Use Rules (SNURs). These documents list the substances that are covered under the Toxic Substances Control Act (TSCA) for which industry seeks approval to manufacture for a new purpose. The SNUR also includes EPA's opinion about whether or not these substances pose any human or environmental hazards during use or manufacture and asks for comments from the affected industries. These comments and EPA's responses to them are then also published.

Of course, the battle is always the same. Industry's position is that the stuff shouldn't require any special testing or worker protections. EPA usually tries to develop reasons why workers should be protected from exposure during manufacture and/or why environmental controls should be required.

A FEBRUARY 4TH SNUR included comments of interest to us because one series of chemicals posed for manufacture is a synthetic mineral similar to some of the colorants used in ceramics and glass. This mineral will probably be used as a semiconductor, but it could be used also in art. It is a crystal combination of strontium and aluminum and is "doped" with one or more rare earth metals. (Doping is a process that results in the forming an overlayer of the rare earth metal around the strontium/aluminum crystal or infusing the rare earth molecules into the crystal structure.)

Since there is no data on the health effects of such chemicals, it is hard for EPA to establish that the chemical would create a "significant risk" as required by TSCA. But in this document, the EPA turned the lack of information back on industry saying that the commenter "submitted no information to alleviate EPA's concern." The EPA's concern is that there will be a potential lung overload:

> ....based on analogous [similar] respirable, poorly soluble particulate chemical substances that predicts potential toxicity to workers from inhalation when more than 5% of the ...particles are less than 10 microns [in diameter]. ..... (p. 6472)
>
> As a result, EPA believes the metal oxide titanium dioxide subcategory is the appropriate subcategory based on physical-chemical considerations. Adverse lung effects are associated with the inhalation of crystalline metal compound particulates. Crystalline particles more readily embed in lung alveolar sacs than amorphous [non crystalline] particles.... (p. 6473)

EPA then cites the National Institute for Occupational Safety and Health's "Current Intelligence Bulletin 63: Occupational Exposure to Titanium Dioxide." This document sets a very restricted air quality limit for titanium dioxide and also lists these small (under 10 micron) particles of titanium dioxide as a carcinogen. And the carcinogenicity is not due to the toxicity of titanium itself, but of the particular crystalline surface characteristics of the tiny particles.

While the TSCA doesn't authorize the EPA to force industry to test without proving "significant risk," which is impossible when there is no data, the EPA does have a strategy. The SNUR says that industries who submit requests to begin manufacture "should be aware that EPA will be better able to evaluate [requests] that provide detailed information" on human exposure and environmental release. It remains to be seen if industry will do the tests or if, in the absence of test data, the EPA will try to require worker protections and other precautions as conditions for permitting manufacture of this doped mineral product.

RELEVANCE TO ART. Potters and glass workers should keep in mind that similar synthetic minerals are used as colorants. Some of these colorants are even doped or combined with rare earth minerals such as neodymium, erbium and praseodymium. I refer potters to an article on these colorants in the September 2002 issue of *Ceramics Monthly* (pages 65-67). The rare earth colors also are ones that potters and glassblowers like because they fluoresce brilliantly under ultraviolet light.

Other synthetic minerals include Mason stains and encapsulated colorants. These are usually sold without many health warnings because it is assumed they are poorly soluble in the body so that the metals in the minerals are not absorbed if they are ingested or inhaled. However, this insolubility also means the mineral will be retained in the lung where it may have toxic effects. And synthetic minerals with surface characteristics similar to titanium dioxide may also be lung carcinogens.

Be aware that, to my knowledge, there is almost no toxicity data on the rare earth metals or on any of these synthetic minerals or Mason stains. None of these have been tested on animals by inhalation or ingestion. The insoluble synthetic lead frits were tested and they did leach significant amounts of lead into the test animals' blood. Using the same analogous reasoning that the EPA used, we camot discount the possibility that these synthetic doped minerals could be capable of acting as particles retained in the lung and/or as a source of metal exposure by inhalation and ingestion.

PRECAUTIONS: Rather than become test animals in a useless and uncontrolled experiment, artists should handle these and any other powdered mineral products in local exhaust. Do not mix them in the open even with respirators because the dust created will settle to contaminate the studio. A glove box, spray booth, or chemistry fume hood are suitable for handling these powders. Once they are mixed with water or a paint vehicle and camot get airborne, they are safer to use in the open.

ART REPRODUCTION COMPANY CITED BY OSHA

Region 1 News Release: 14-182-BOS/BOS 2014-021, 2/18/13

Artbeats Inc., a Connecticut-based company that manufactures reproductions of prints and paintings was cited on February 18th by the Occupational Safety and Health Administration (OSHA) for "repeat and serious" violations. Artbeats faces a proposed fine of $56,430. A worker complaint at their Cheshire facility triggered this inspection, but there had been an earlier inspection at a different Artbeat facility. According to OSHA's February 18th Press Release:

> Inspectors found several hazards similar to those cited in June 2010 at the company's Waterbury facility. These hazards include failing to provide a program to ensure workers are trained to power down and lockout industrial saws prior to conducting maintenance; provide a chemical hazard communication program and training on the risks and safeguards associated with chemicals, such as paints and gels; and prevent usage of unapproved electrical equipment in areas that generate and accumulate combustible wood dust.

One serious violation carrying a $2,970 fine was for an inadequately guarded radial arm saw. This violation and the others listed above are conditions I see in many college art departments and studios.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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CREDIT: ***ACTS FACTS***,
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ISSN 1070-9274

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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

April 2014 **Vol. 28, No. 04**

CAMERA WOMAN KILLED BY TRAIN ON MOVIE LOCATION

SOURCE: *USA829 e-Newsletter*, 3-7-14 & *The Hollywood Reporter*, "'Midnight Rider' Accident..."

On February 20th, a 27-year-old Camera Assistant named Sarah Jones, a member of Local 600 of the International Alliance of Theatrical Stage Employees (IATSE), was killed while working on a film shoot in Georgia. The crew was working on a trestle which carried an active railroad track. The shot, which was a dream sequence, placed a hospital bed on the track. An unexpected train arrived, leaving the crew only one minute to clear the track. On impact, the bed was transformed into deadly projectiles, and a flying piece struck Sarah and knocked her off her feet and under the train.

SAFETY GUIDELINES FAILED. Film safety guidelines are written by a committee of the Alliance for Motion Picture and Television Producers (AMPTP). Bulletin No. 28 addresses railroad safety and includes requirements to check with the owner/operator of the railroad, develop specific guidelines and require training of the crew. According to the *Hollywood Reporter*, Nick Grant, the creative director of the film *Midnight Rider*, denied that corners were cut, but a Sheriff's Department report quotes an official from the CSX railroad company saying the production had been denied permission to shoot there. Clearly there will be an investigation to assign blame for this tragic death.

COMMENT. Common sense safety measures were not taken here and readers of ***ACTS FACTS*** know we cover other tragic deaths in the entertainment field almost every year. And often, there are no laws or regulations addressing the specific causes of these accidents. This is why OSHA so often uses the General Duty Clause to address these hazards. Yet it is the industry, itself, that should take action including incorporating the safety guidelines into their contracts with directors and producers and apply penalties for failure to follow them.

ALUMINUM DUST CATCHES FIRE AT BASEBALL BAT FACTORY

SOURCE:http://investing.businessweek.com/research/markets/news/article.asp?docKey=600-201403182339KRTRIB_BUSNEWS_937_63635-1

On March 18th, Hillsboro, Oregon firefighters contained a fire at DeMarini Sports, Inc., a factory that makes softball and baseball bats. The facility has a system which collects aluminum dust from the manufacturing process and stores it in a container outside the building. Hillsboro Fire Spokesman, Storm Smith, reported that the dust is supposed to cool in the container, but somehow became too hot and ignited.

An explosion occurred, Smith said, but the business had safety features in place that prohibited the explosion from going back into the building. But smoke filled the structure, Smith said. Firefighters ventilated the building and used a special extinguisher which works for metal fires.

COMMENT. The special extinguisher mentioned is a Class D powder extinguisher. Art foundries and welding shops that cast, weld or machine aluminum should have these available. Even better, shops should use other safer metals, such as mild steel for welding or bronze for casting.

The phrase in the newspaper report that the aluminum dust "somehow became too hot and ignited" requires explanation. There are two conditions that will cause this: 1) water or moisture gets on the dust causing a hot oxidation reaction; or 2) the aluminum dust was mixed with other metal dusts such are iron dust or filings. In this latter case, a high-temperature thermite reaction between iron and aluminum can occur. Shops creating aluminum dust or filings need special explosion-proof vacuums or dust collection systems dedicated to collecting only aluminum particles.

ACTS FACTS will continue to look for incidences in which aluminum dust catches fire until we feel that most colleges are aware of this issue.

THE STATE OF CALIFORNIA PROPOSES CHANGE/REMOVAL OF THREE CONSUMER ITEMS

SOURCE: http://cen.acs.org/articles/92/web/2014/03/California-Proposes-Changes-Consumer-Products.html

On March 13, California proposed that manufacturers eliminate hazardous chemicals from three types of consumer products, either by removal of the product from the market or reformulation of the products. The action is being taken under a new state product safety initiative that took effect last year. The three types of products that would be targeted are:

1. Surface cleaners and paint and varnish strippers containing the solvent methylene chloride.
2. Children's foam-padded sleep aids, such as nap mats and sleep positioners for infants, made with the flame retardant tris (1,3-dichloro-2-propyl) phosphate (TDCPP).
3. Spray polyurethane foam—marketed to do-it-yourselfers for insulating and filling cracks in buildings—that contains unreacted diisocyanates.

COMMENT. Good on California. Methylene chloride is easily replaced with other solvents in these products that are much less toxic. Methylene chloride is highly toxic and it is metabolized in the body into carbon monoxide which is then capable of causing heart attacks in those exposed.

The state of California already has listed this flame retardant better known as Tris, as a chemical known to cause cancer. It has been banned in some children's products in various states, but there is no federal law banning its use.

Spray polyurethane foam products, as described in this proposal, include the well-known Great Stuff®. This is a two-component product consisting of a polyurethane resin and a diicocyanate curing agent that mix in the long nozzle of the can to create the foam polymer. But exposure to the isocyanate is inevitable when using the product. The isocyanate chemicals are an OSHA priority due to the number of workers it disables with serious allergic skin reactions or a potentially fatal asthma. But since it can be freely purchased at any hardware store, it is hard to convince people it is too hazardous for general use. The California ban, as proposed, would help make the point to artists, teachers and theatrical scenic artists that it should not be used freely as an art or craft material.

OSHA SETTLEMENT FOR DEATH OF ACROBAT

SOURCE: www.osha.gov see Cirque enforcement file & lasvegas.gotnewswire.com/ "Cirque-OSHA reach settlement in Guillot-Guyard case..." by John Katsilometes, Feb. 28, 2014

The Occupational Safety and Health Administration (OSHA) entered into a settlement with *Cirqu du Soleil* regarding the June 29, 2013, accident in which acrobat Sarah Guillot-Guyard fell 94 feet to her death. The original citation was for six violations carrying a total of $24,000 in fines. But *Cirque* appealed the citations and on January 9, 2014, a settlement was reached. The only remaining

penalty was for $7000, for violation of the General Dusty Clause of the State of Nevada OSHA. It was for not protecting or preventing the worker from "striking the overhead forest grid as they used wire rope, controllers and winches to ascend from the Sand Cliff Deck to the Forest Grid Catwalk."

In the original report, OSHA noted that previous incidents had resulted from employees striking the catwalk, and Guillot-Guyard reportedly hit the grid on ascent, causing her wire rope to be jarred out of its pulley and severed by the edge of that pulley, allowing her to fall free.

The settlement was reported in many show biz publications only mentioning the single citation and fine. But there actually is one other violation left standing. The penalty was vacated, but not the citation for 1910.132(d)(2) general requirements for personal protective equipment which says:

> The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment

Leaving this citation unvactated means if that Cirque has another incident of this type, it can be considered a "repeat" violation which significantly raises the penalty. The wording of the rule should also remind all theatrical companies and schools that a hazard assessment must be performed and documented training must be done for all situations in which people could be seriously harmed.

ARE LED LIGHTS DAMAGING OUR EYES?

SOURCE: http://dx.doi.org/10.1289/ehp.1307294

History repeatedly shows us that new scientific inventions are not tested for long-term health hazards prior to selling them to consumers. Products are invented, marketed, and only after they are widely distributed is anyone likely to consider their health effects. For example, when radium was discovered, the immediate response of scientists Marie and Pierre Curie that it was safe. It soon was used in patent medicines and many other consumer applications. Even though both inventors and other researchers died of cancer, the Curies never believed radium was the cause.

It is the same with every new invention, including the new LED (Light-Emitting Diode) lights. All the consumer has been told is that that environmental activists like them because they consume less energy, last longer, are physically more able to resist breakage, are smaller sized and faster switching. In addition, they do not contain mercury as fluorescent lights do.

But the light is different. LED light is called electroluminescence. It is from the generation of photons. The color of the light corresponds to the energy at which the photon is released which is determined by the energy band gap of the semiconductor. It is not necessary to understand this other than to see clearly that LED light is not produced by the same processes used in incandescent or fluorescent lights. This alone should be a clue that its effects on people should be checked out.

The first use of LED components was in 1962. These first lights were low-intensity infrared light emitters. But today there are LEDs that emit across the entire visible, ultraviolet and infrared wavelengths, with very high brightness. Light-emitting diodes are now used in applications as diverse as aviation lighting, automotive headlamps, advertising, general lighting, traffic signals and

camera flashes. Recent developments in LEDs permit them to be used in environmental and task lighting in homes. And it is these lights that were the focus of a new study:

> White Light-Emitting Diodes (LEDs) at Domestic Lighting Levels and Retinal Injury in a Rat Model, Yu-Man Shang, Gen-Shuh Wang, David Sliney, Chang-Hao Yang and Li-Ling Lee. *Environmental Health Perspectives*, 122:269–276; March, 2014.

This study was done because it is known that LEDs deliver higher levels of blue light to the retina than do conventional domestic light sources. Chronic exposure to high-intensity light (2,000–10,000 lux) is known to result in light-induced retinal injury, but chronic exposure to relatively low-intensity (750 lux) LED light used in home lighting had not been assessed in animal tests.

The researchers in this new study tested the effects on rats exposed to both blue LEDs and full-spectrum white LEDs. Similar exposures of rats to compact fluorescent lights was used as a comparison. The rats were allowed to run freely in a cage with the light source set on the rack ceiling twenty centimeters above the cage roof to mimic 'domestic lighting' condition as much as possible. After exposure, pathological examinations of the retina and measurements of free radical production in the retina were taken to determine the oxidative stress level.

Under these study conditions, the retinas of rats exposed to either blue or cool white LED light showed evidence of retinal damage and cell death after 9 days of exposure. Measurements showed that oxidative stress was associated with this retinal damage. Compact fluorescent lights in the same colors showed far less damage as compared to unexposed controls. The researchers concluded:

> Our results raise questions about adverse effects on the retina from chronic exposure to LED light compared with other light sources that have less blue light. Thus, we suggest a precautionary approach with regard to the use of blue-rich "white" LEDs for general lighting.

COMMENT: ACTS encourages more testing of LED light sources with the aim of learning more about the hazardous wavelengths and modifying household LEDs to produce safer spectra. But I have far more concern right now about workers in the entertainment industry exposed to massive amounts of high intensity LED theatrical light from multiple sources.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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May 2014 **Vol. 28, No. 05**

FAILURE OF ONE CARABINER INJURES 9 PERFORMERS

SOURCES: Wpri.com, "Ringling Bros. safety record has drawn scrutiny,"5-5-14; Www.630WPRO.com, NEWS: "Carabiner failure determined as cause of circus accident," Andrew Augustus, 5-5-14; & CBS-WBZ, http://boston.cbslocal.com/2014/05/06/initial-phase-of-providence-circus-accident-done/, 5-6-14.

By now, most readers will have heard about, or seen the film of, the accident at Ringling Brothers circus on Sunday May 4, 2014. Nine performers were injured and several of them sustained serious but non-life-threatening injuries. Local Providence public safety investigators, led by Paul Doughty, are turning over the case to the federal Occupational Safety and Health Administration, including providing them with the three broken pieces of a 4 to 5 inch D-ring carabiner clip from the top of the apparatus from which the performers were hanging when it fell.

This carabiner is a "D" shaped oblong loop of metal closed by a clip or screw. Doughty said that the "carabiner was rated for about 10,000 pounds, [and] the estimated weight of the performers and the apparatus was about 1,500." (See comment below.) Doughty surmised that malfunction could be due to a manufacturing defect or misuse such as installing it sideways, instead of in the long direction.

WHO IS LIABLE? The manufacturer of the faulty carabiner has not been determined. And Providence Public Safety Commissioner Steven Paré said Ringling Bros. was solely responsible for the setup and rigging of the current show in Providence. Reportedly, the circus hires riggers, including local riggers, and conducts inspections before and after each show.

This is not always the case. Some acts are independent contractors who bring their own equipment and set it up and check it themselves. But if Ringling installs and inspects, they are responsible.

Steven Payne, a spokesman for Ringling owner Feld Entertainment Inc., explained the issue again on CNN saying, "Each and every time that we come to a new venue, all of the equipment that is used by this performer–this group of performers as well as other performers–is carefully inspected."

OTHER ACCIDENTS. There is no database of accidents at Ringling or any other circus. But reporters have found a death in 1994, when a Ringling Bros. performer died during a performance in St. Paul, Minnesota. A long chiffon scarf on which she was twirling gave way and she fell 30 feet to a concrete floor. At the time a spokesman told reporters it was the first fatal accident involving Ringling Bros. in at least a decade. But it would appear this is an exaggeration, since there were news reports in the previous year, 1993, of the accidental death of a Ringling elephant trainer in Florida.

COMMENT. It will take time to determine why this carabiner failed or if the rig should have had a back up for a single load-point carabiner. This carabiner had a load rating that is 6.7 times the static load suspended, which sounds fine, but shock-load calculations could show otherwise. And a check of past OSHA citations shows that Ringling was cited in Las Vegas in 2011 for a load-rating issue. It was a violation of 1910.184(i)1 which requires a synthetic web sling to be "marked or coded to show the rated capacities for each type of hitch and type of synthetic web material."

10 MEMBERS OF TV FILM CAST & CREW SICKENED BY FUNGUS

SOURCE Coccidioidomycosis Among Cast and Crew Members at an Outdoor Television Filming Event — California, 2012, Jason A. Wilken, et. al. Morbidity & Mortality Weekly Report, CDC, April 18, 2014 / 63(15);321-324

In March, 2013, the California Department of Public Health (CDPH) identified two doctor's reports of occupational illnesses. Both patients had worked at the same job site in January of 2012. Both had coccidioidomycosis (valley fever) which is caused by fungi called *Coccidioides*, typically found in soil. Both patients were cast or crew members filming a television series episode at an outdoor set in Ventura County, California.

Eventually, the investigation identified a total of five laboratory-confirmed plus five probable cases linked to this single job. Two patients were hospitalized, one for 2 days and one for 4 weeks. The seven interviewed patients reported symptom duration ranging from 1 week to 6 months and reported recovering fully from their illness. One patient died of an unrelated illness. Five of the interviewed patients reported dry, dusty conditions during the filming event. Only two of the interviewed patients, a construction coordinator and a prop or set maker, actually engaged in soil-disrupting activities (digging and moving dirt). However, substantial soil-disruptive work had occurred at the site shortly before shooting, including grading, digging and filling a mud pit.

The site manager was interviewed and stated that they would no longer allow soil-disruptive work at the site and would incorporate information about the potential risk for *Coccidioides* exposure into work contracts. The site manager also reported that dust from an adjacent mining company blew onto the site daily, but no valley fever cases have been found among the mine employees.

COMMENT: Various types of fungi, bacteria and other potentially harmful organisms are found in soil everywhere. Some soils also contain toxic elements such as silica or other toxic minerals. Gardeners, farmers, archeologists and construction workers are known to contract diseases associated with soil exposure. All airborne soil dusts should be considered potentially hazardous.

ANOTHER FOUNDRY ALUMINUM DUST FIRE

SOURCE: http://www.wiscnews.com/juneaucountystartimes/news/local/article_d53d9e75-b697-5644-b1f0-cee5825acf3c.html, No Serious Injuries in Mauston Fire

One April 4, 2014, three employees of Stroh Precision Die Casting foundry in Mauston, Wisconsin, were taken to a Medical Center after a fire. The fire was caused by a build-up of aluminum dust inside machinery. The Mauston Fire Department Chief said the employees were taken to the hospital as a precaution for inhalation of smoke and chemicals after they attempted to put out the fire.

"Most of it [the workers' physical distress] I think was probably from the carbon-dioxide extinguishers they were using to try and put it out," Fire Chief Hale said. "They wasted seven or eight extinguishers and that stuff is pretty nasty."

The Fire Chief did not make clear that the use of so many extinguishers is due to the fact that aluminum fires can't easily be extinguished by ordinary means. The heat of these fires is very high and the combustion is rapid and violent. Water won't work either. It would make the fire worse.

The fire created a lot of smoke, but Chief Hale said the hazardous materials handbooks indicated the smoke presents no public-health hazard. The smoke is primarily white aluminum oxide fume particles which can be irritating to the respiratory system.

COMMENT. ACTS covers aluminum fires hoping to convince art foundries to either cease casting aluminum or provide the complex precautions needed to safely cast, machine or weld this metal.

United States Court of Appeals - for the District of Columbia Circuit

Argued November 12, 2013 Decided April 11, 2014

No. 12-1375

SEAWORLD OF FLORIDA, LLC,
PETITIONER

v.

THOMAS E. PEREZ, SECRETARY, UNITED STATES DEPARTMENT OF LABOR,
RESPONDENT

On Petition for Review of a Final Order of the Occupational Safety & Health Review Commission

ROGERS, *Circuit Judge*: SeaWorld of Florida, LLC, operates a theme park in Orlando, Florida, that is designed to entertain and educate paying customers by displaying and studying marine animals. Following the death of one of SeaWorld's trainers while working in close contact with a killer whale during a performance, the Occupational Safety and Health Review Commission found that SeaWorld had violated the general duty clause, § 5(a)(1) of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 654(a)(1), by exposing the trainers to recognized hazards when working in close contact with killer whales during performances, and that the abatement procedures recommended by the Secretary of Labor were feasible. SeaWorld challenges the order with respect to one citation. Concluding its challenges are unpersuasive, we deny the petition for review.

So begins the long document that denies *SeaWorld*'s petition to appeal their case and overturn the OSHA prohibitions on physical contact between their trainers and the orcas. The decision was two to one, so there also was a dissenting opinion in the document.

It is unlikely *SeaWorld* will appeal again since the only court left for them is the US Supreme Court. And if this is the last petition to a court, the case has established OSHA's right to protect workers in this type of entertainment company.

EXPLOSION IN DUBAI CAUSED BY ONE DROP OF PAINT

SOURCE: "Dubai Safety Supervisor Denies Causi g Worker's Death i Jebel Ali Port Chemical Explosion," http://www.thenational.ae/uae/workplace-safety/safety-supervisor-denies-causing-workers-death-in-jebel-ali-port-chemical-explosion

On January 4, 2013, in Jebel Ali Port, the world's largest man-made harbor near Dubai in the United Arab Emirates, a drop of paint fell from the roof of a chemical tank on to a halogen light bulb. The bulb shattered due to the paint cooling the bulb's surface. A powerful explosion occurred as a result. The blast caused third-degree burns to 80 per cent of a worker's body. He died seven months later.

COMMENT. When a bulb breaks in a location where the air contains high levels of flammable vapors or mists, an explosion is almost inevitable. For this reason the OSHA regulations require all light fixtures in chemical store rooms or within 20 feet of paint spray booths or spray areas to have unbreakable glass barriers around them. And it is why all of the wiring in such locations must be Class 1, Division 2, explosion-proof wiring to eliminate the chance of tiny sparks or arcs being produced when current flows through ordinary light switches or relays.

Yet I see spray booth after spray booth in college and university art and theater departments without any specially-enclosed lights or explosion-proof wiring in the spray booth area. The fact that these booths are only used sporadically does not justify the school avoiding these fire safety requirements. At anytime, the conditions for an explosion could be achieved.

GOOD EHP LEAD PAINT ARTICLE FOR YOUR FILES

SOURCE: http://ehp.niehs.nih.gov/wp-content/uploads/122/4/ehp.122-A96.pdf

An excellent article called "Lead-Based Decorative Paints: Where Are They Still Sold—and Why?" was published in *Environmental Health Perspectives*, a free journal. I suggest readers download this article for their files (see link under the headline of this article). It is full of fascinating statistics. It covers the health problems caused by lead paint all over the world including personal stories of victims and lists the 40 countries in which lead paint is still being used. It also covers the US regulations for a comparison for countries that do not regulate lead paints:

> In the United States, a voluntary standard limited lead in interior paints beginning in 1955. But the country did not ban lead-based consumer paints outright until 1977, when it capped the allowable concentration at 600 ppm, or 0.06% of the weight of the total nonvolatile content of the paint. In 2009 that limit dropped to 90 ppm.

The article doesn't fully explain that these rules apply to: (i) paint and other similar surface coatings; (ii) toys and other articles intended for use by children; and (iii) certain furniture articles. Included under "paints" are those used in residences, schools, hospitals, parks, playgrounds and public buildings or areas where consumers have direct access to painted surfaces.

The US ban on lead does NOT apply to paints or surface coatings on appliances such as ranges, refrigerators and washers; on fixtures such as built-in cabinets, windows and doors; or on household products, such as window shades and Venetian blinds. Industrial paints and specialty paints are also exempt from lead regulations such as anti-corrosion and metal-priming paints, paints for boats and cars, and, of course, artists' paints.

While the US limits lead in its own consumer paints, it exports lead compounds to other countries:

> U.S. companies sell lead compounds abroad that have potential uses in paints. In 2013 U.S. firms exported 7,400 tons of two lead oxides, red lead and orange lead, valued at around $18 million. ... Three pigments that are—lead chromate, lead sulfochromate, and lead chromate molybdate sulphate—will be restricted in European Union nations effective in 2015.

As usual, the EU takes strong consumer measures–typically before the US institutes them.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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ISSN 1070-9274

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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

June 2014 **Vol. 28, No. 06**

ACTORS'S WIDOW FILES ASBESTOS LAWSUIT

SOURCE: LawyersAndSettlements.com, May 1, 2014, by Heidi Turner, http://www.lawyersandsettlements.com/articles/asbestos_mesothelioma/asbestos-lawsuit-mesothelioma-26-19744.html?ref=newsletter_bca_2014-05-11&utm_source=newsletter_bca_2014-05-11&utm_medium=email&utm_campaign=Articles#.U3DKpGdOXol

According to Fox News, the family of actor Ed Lauter has filed a lawsuit against CBS and General Electric (the company that at one point owned NBC) alleging that Lauter was exposed to asbestos while filming television shows for the networks. A claim was also reportedly filed against Ford Motor Co., alleging Lauter was exposed to asbestos through automobile parts.

Lauter was diagnosed with malignant pleural mesothelioma in May, 2013. He died at age 74, just six months later. Mesothelioma is a rare, fatal cancer that has been linked to asbestos exposure.

WHO IS ED LAUTER? You've seen him. Yes, you have, many times. In an interview with the Los Angeles Times in 2012, Lauter explained it this way: "A lot of people say, 'I know you,' but they don't know my name. But I've had a great run."

Lauter's first acting role was a small part in the Broadway production of "*The Great White Hope*," a boxing drama, in 1968. He appeared in more than 200 films and TV series episodes. His TV career began in 1971 in *Mannix*. Lauter appeared in many films, including half a dozen in 1972 alone. He worked until a few months short of his death on October 16, 2013, two weeks before his 75th birthday. Google Ed's picture. You know him.

HOW WAS HE EXPOSED? All workers in the entertainment field in the past encountered asbestos regularly. For decades, theatrical lighting instrument insulation and wiring contained asbestos. The asbestos on these fuzzy white wires was on the outside of the wire and fibers flew. Asbestos blankets were used to keep hot lights from burning curtains. Asbestos gloves were used to move follow spots. Scenery paints were textured with asbestos. Asbestos curtains were, and still are, hung in many theaters. When they are damaged or unpainted, they shed asbestos fibers.

WHEN WAS ASBESTOS BANNED? In 1973 when Ed's career was starting, EPA banned spray-applied surfacing asbestos-containing material for fireproofing/insulating purposes. Then in 1975, EPA banned installation of asbestos pipe insulation and asbestos block insulation on facility components, such as boilers and hot water tanks. In 1978, EPA banned spray-applied surfacing materials for purposes not already banned. In 1977, the Consumer Product Safety Commission (CPSC) banned the use of asbestos in artificial fireplace embers and wall patching compounds.

<u>But bans don't affect the types of asbestos where Ed Lauter worked</u>.

Then in 1989, the EPA issued a final rule under the Toxic Substances Control Act (TSCA) banning most asbestos-containing products. However, in 1991, this rule was vacated and remanded by the Fifth Circuit Court of Appeals. This overturned the most of the original bans on the manufacture,

importation, processing or distribution in commerce for the majority of the asbestos-containing products originally covered in the 1989 final rule.

Stated plainly: asbestos still isn't banned.

LAWSUITS. While asbestos is not banned, manufacturers know if they use it, it can cause diseases such as mesothelioma and certain types of lung cancer in people who use their products. The latency period for developing these diseases is usually from ten to 40 years after exposure. This means that 40 or more years after the asbestos products a company manufactured are no longer being used, the company that made them can still be sued by people who become ill from prior exposures. It is the threat of these lawsuits that keeps asbestos out of our products.

COMMENT: The next time you hear a TV ad asking you to call a lawyer if you or a loved one has mesothelioma say: "Thanks, pal." When regulators fail, our best hope is roving bands of lawyers.

EDITOR COMMENTS ON ASBESTOS LAWSUITS.

I have been retained in many mesothelioma lawsuits. Two of these were filed by the families of members of the International Alliance of Theatrical Stage Employees (IATSE) who worked in New York City theaters. The first one was in 2005 and the other was this year. I also know of other theatrical workers who have died of mesothelioma around the country.

Asbestos sources in theaters have worried me for years. My first book published in 1986, *Stage Fright: Health & Safety in Theater*, had a chapter on asbestos and a plea to get this material out of our venues. But some theaters kept the old lighting instruments and curtains. Even today, I can still find the old lighting instruments occasionally, especially in college theaters.

Get rid of this stuff. If it is expensive to dispose of, tough. It costs more in the long run to keep it.

LADDERS: STILL FIRST IN CAUSING FATAL FALLS AT WORK

SOURCE: *MMWR* Vol 63, No. 16, CDC, April 25, 2014, Occupational Ladder Fall Injuries—United States, 2011 Christina M. Socias, et al., pp341-351

The Centers for Disease Control (CDC) published the results of analysis of 10 years of workplace accident data as well as the new data from 2011 (see source above). The data were analyzed by the National Institute for Occupational Safety and Health (NIOSH). In summary, this is what they found:

> Falls remain a leading cause of unintentional injury mortality nationwide, and 43% of fatal falls in the last decade have involved a ladder. Among workers, approximately 20% of fall injuries involve ladders. Among construction workers, and estimated 81% of all injuries treated in U.S. emergency department (EDs) involve a ladder. ... In 2011, work-related ladder fall injuries ... resulted in 113 fatalities (0.09 per 100,000 ... workers*...), an estimated 15,460 nonfatal injuries reported by employers that involved $\geq$ 1 days away from work..., and an estimated 34,000 nonfatal injuries treated in EDs.
>
> * Workers are defined in full-time equivalents. One FTE = 2,000 hours worked per year.

The 2011 rates reported for nonfatal, work-related, ED-treated ladder fall injuries were higher (2.6 per 10.000 FTEs) than those injuries reported by employers (1.2 per 10,000 FTE). This shows that emergency rooms are reporting more ladder fall injuries than employers report–no surprise either.

Employers should report all fall injuries and provide annual OSHA ladder training for these workers.

EXPLOSION ERUPTS AT WAX REFINERY

SOURCES: http://www.oleantimesherald.com/news/here_and_now/article_1df5e4e8-d406-11e3-b197-0019bb2963f4.html, *Olean Times Herald*, 5-4-14; http://www.njherald.com/story/25451722/cops-atf-pennsylvania-wax-plant-fire-accidental, *New Jersey Herald*, Cops, ATF: Pennsylvania wax plant fire accidental, 5-7-14; On behalf of Louis P. Lombardi II & Associates, P.C. posted in Workplace Injuries on Tuesday, 5-13-14.

On Sunday, May 4, 2014, an industrial explosion and fire badly damaged buildings at International Wax, Inc. Since it was a Sunday, only one person was injured and he was treated at the hospital and released. On work days, up to 130 employees could have been present.

One eyewitness who was about a mile away at the time of the blast said, "It looked like a miniature Hiroshima. I felt it. It shook my feet before I saw the smoke, which immediately formed into a dark gray mushroom cloud and soon encompassed the entire refinery. It kept that shape for approximately a minute before it turned to white smoke and the wind blew it in directions away from Smethport..."

The fire was called in at 11:50 a.m. Sunday, at which point the Smethport and Port Allegany volunteer fire departments were dispatched. At 12:07 p.m., a second alarm was sounded, calling in members of the fire companies from six surrounding communities and from Bradford City. The plant's employee fire brigade also helped fight the fire, according to reports.

At 12:52 p.m., fire personnel on scene requested "maskmen," (men wearing air-supplied respirators) according to reports. A tower for aerial water-spraying was also dispatched to the scene. Aerial trucks from two other towns were needed to cool and contain the building where the fire originated until interior hose crews could fight the fire from inside, according to reports.

WHAT IS INTERNATIONAL WAX? Also known as Petrowax, this company processes wax in a plant which spans 575 acres. In 1923, it was originally designed as a petroleum crude oil refinery. Later it was converted to a wax processing plant. The plant's principal operation now is to remove oil impurities from petroleum wax and refine it into finished waxes, according to the U.S. Environmental Protection Agency. Wax produced at the plant is used to waterproof cups and paper plates, as well as in the manufacture of automobile tires and candles, the EPA states.

THE FIRE'S CAUSE. A state police fire marshal says investigators from their agency and from the Federal Bureau of Alcohol, Tobacco, Firearms and Explosives determined the explosion and fire originated in the filter plant of the International Wax facility. The explosion and fire significantly damaged the filter house, destroyed another building, and moderately damaged five other buildings. It was clear the fire was accidental.

COMMENT: Hot wax and the paraffin fume created when wax is heated are highly flammable and explosive. I have actually seen a small explosion of wax fume in a ceramic glaze room where an electric fry pan was used to heat wax. Slowly over time, the paraffin fume above the molten wax must have collected in the air. A static discharge or some small spark must have ignited the fume and it exploded in a ball of flame damaging items and starting a fire on the glaze room counter.

Wax is heated for many reasons in art processes. Examples include melting and burning out wax in sculpture molds, heating and ironing out batik wax, making and/or using encaustic sticks and paints, wax resists for paintings and ceramics and more. The risk of fire and small explosions is always present. Always provide fire protection and ventilation for hot wax processes.

NANOTECH CAN BE NANOTOXIC

CBS Money Watch, When nanotech turns nanotoxic, by Erik Sherman, 5-15-14 & *Bloomberg News*, Worker Illness After Nanomaterial Exposure Examined in First U.S. Case Study on Issue, by Robert Iafolla, 5-15-14 (from *Occupational Safety & Health Reporter*) – case study available for purchase at http://onlinelibrary.wiley.com/doi/10.1002/ajim.22344/abstract.

The first properly documented case of illness from exposure to nanoparticles was reported in the *American Journal of Industrial Medicine* (AJIM), May 12, 2014. It is likely to be the first of many.

The AJIM article reported the case of a 26-year-old chemist creating polymers and coatings with ingredients that included nanoparticles of nickel. She developed nasal congestion, facial flushing and an allergic reaction to her nickel-containing earrings and belt buckle. She had to leave her job and was told by physicians not to return to the building because her symptoms would start again.

There was an earlier, widely cited 2009 study of seven workers in China whose adverse health effects were blamed on nanoparticle exposure. This study generally has been considered to be unproven. The 2014 study is solid because nickel allergies are well-known and easily documented.

The AJIM study is likely to be the first of many because laboratory tests have often shown that toxicity and carcinogenicity of some toxic substances increases when those substances are reduced to nanosized particles. The classic example is titanium dioxide nanoparticles use as the white pigment in paints, cosmetics, sunscreens and other applications. Titanium dioxide causes lung damage and cancer in animals when it is in small respirable (< 10 micron diameter) particles. But it is even more toxic when it is in smaller nanoparticle sizes (between 0.1 and 0.001 microns).

The animal data convinced both the International Agency for Research on Cancer and the National Institute for Occupational Safety and Health (NIOSH) that the small sized particles of titanium dioxide are carcinogens. And NIOSH set two recommended exposure limits for the particles, with the most restrictive one being that for the nanoparticles.

Similar data exists for nickel. But lab studies show nickel nanoparticles are even more sensitizing and carcinogenic than larger nickel particles. Since industries do not accept the precautionary principle, it remains, as usual, up to U.S. workers/lab rats to confirm this data with their lives.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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ISSN 1070-9274

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July 2014 Vol. 28, No. 07

3-D POWDER-TYPE PRINTING FIRM CITED BY OSHA

SOURCE: http://ehstoday.com/safety/osha-cites-3-d-printing-firm-after-explosion,
EHS, OSHA Cites 3-D Printing Firm After Explosion, John Cable, Wed. 2014-05-21

On May 21, 2014, OSHA cited a 3-D printing firm called Powderpart Inc. for one willful violation and nine serious violations after an inspection was triggered by an explosion and fire at their Woburn, Mass., facility. One employee suffered third degree burns.

The company faces $64,400 in proposed fines. OSHA said it found that Powderpart failed to prevent and protect its workforce from the fire and explosion hazards of reactive, combustible metal powders such as titanium and aluminum alloys which are used in the 3-D printing process.

"he fire and explosion hazards when working with titanium and aluminum are established, particularly when the materials are in powder form," said Jeffrey Erskine, OSHA's area director for Middlesex and Essex counties. Powderpart allegedly failed to eliminate known sources of potential ignition or follow other safety instructions from equipment manufacturers. They also did not alert the Woburn Fire Department to the workplace presence of hazardous materials, according to OSHA.

Other serious hazards that OSHA found included:

- the use of unapproved electrical equipment
- electrical equipment and wiring that were unsuitable for a hazardous location
- failure to train employees on chemical hazards and safeguards
- failure to supply employees with all necessary protective clothing, equipment and training
- no written respiratory protection program
- failure to post danger tags in potentially explosive areas

"Establishments that use metal powders in this new technology need to scrutinize their processes and take steps to prevent and protect their employees from fire and explosion hazards that arise with these materials," said Robert Hooper, OSHA's acting regional administrator for New England. "The market for 3-D printed parts made from titanium and aluminum alloys includes the automotive, aerospace, defense, medical, dental and jewelry industries. Basic safety measures must be incorporated into this 21st century technology, so that it can grow without harming the employees who are building this new industry."

OSHA cited Powderpart for one willful violation carrying a $14,000 penalty for the firm's alleged failure to have any Class D metal fire extinguishers. OSHA found that Powderpart knew that titanium and aluminum fires cannot be extinguished with a regular fire extinguisher or with water, and knew that its manufacturing process presented potential fire hazards. However, there were no Class D metal fire extinguishers on site during the explosion and fire, according to the agency.

COMMENT. Many university art departments are using powder-type 3D printers. Most of these are using plastic powders, but these, too, can burn or explode in the air under the right conditions.

Operators must read and follow all of the operating and safety rules in the user manuals. And sources of ignition must not be present in the printer rooms, including those created by using ungrounded electrical appliances. Common ungrounded appliances seen in art departments include aluminum-shaded, clip-on flood lights, Dremel grinders, and other small hand-held tools and lights. OSHA requires all electrical appliances in all workplaces to either have three-pronged plugs or the double insulated diamond symbol on them.

CAT LITTER CHIEF SUSPECT IN NUCLEAR WASTE ACCIDENT

SOURCE: http://www.npr.org/blogs/thetwo-way/2014/05/23/315279895/organic-kitty-litter-chief-suspect-in-nuclear-waste-accident?ft=3&f=1007, by Geoff Brumfiel, 5-23-14

In February of 2014, a 55-gallon drum of radioactive waste burst open inside America's only nuclear dump, the Waste Isolation Pilot Plant, in New Mexico. Now investigators believe the cause may have been a pet store purchase gone bad.

Cat litter has been used for years to dispose of nuclear waste. Dump it into a drum of sludge and it will stabilize volatile radioactive chemicals. The litter prevents it from reacting with the environment. And this is what contractors at Los Alamos National Laboratory were doing as they packed Cold War-era waste for shipment to the dump.

But at some point, they decided to make a switch, from clay litter to organic. "Now that might sound nice, you're trying to be green and all that, but the organic kitty litters are organic," says James Conca, a geochemist in Richland, Wash., who has spent decades in the nuclear waste business. Organic litters are made of plant material, which are full of chemical compounds that can react with the nuclear waste. "They actually are just fuel, and so they're the wrong thing to add," Conca says.

Investigators now believe the litter and waste caused the drum to slowly heat up as the organic materials slowly burned and reacted with the waste. After the drum arrived at the dump, it burst.

Ryan Flynn, New Mexico's secretary of the environment, says there are more than 500 drums packed with the wrong litter. The majority are relatively safely underground in the dump, but dozens are still at Los Alamos and another site in West Texas. None of these drums have burst so far, but the lab and the company handling the Texas waste have put them in heavy containers for added protection.

Flynn says federal authorities need to have a long-term solution to prevent future mix-ups.

COMMENT. That long-term solution is easy: don't use consumer products for off-label purposes never intended by the manufacturer unless you have complete ingredient information and a chemist's knowledge of the properties of those ingredients. In this case, the manufacturer also should be contacted to insure full disclosure of the ingredients has been provided.

ACTS FACTS EDITOR GIVEN SPECIAL AWARD

Pamela Hatchfield, President of the American Institute for the Conservation of Historic and Artistic Works (AIC) presented an award to Monona Rossol for Special Recognition for Allied Professionals on May 29, 2014 at their San Francisco Conference. Monona has been a member of AIC since 1981 and was awarded Honorary Life Membership in 1992. This recent award was in recognition of her contribution to the advancement of the conservation profession. It is also the AIC foundation that has developed an archive of all of ACTS FACTS newsletters since the first issue in 1987. ACTS is very proud of our long association with AIC.

NEW STUDY ON MUSICIAN'S EARPLUGS

Orchestral musicians are at great risk of developing noise-induced hearing loss. While other types of workers can simply wear earplugs or muffs, musicians need to hear the nuances of the sounds they and their colleagues generate. Musicians who have tried using earplugs, even those specially designed for musicians, have consistently reported having great difficulty using them during performances or rehearsals.

A new clinical trial of one particular type of earplug was reported in the *Journal of Occupational and Environmental Hygiene*:

> A Clinical Trial of Active Hearing Protection for Orchestral Musicians by Ian O'Brien, Tim Driscoll, Warwick Williams & Bronwen Ackermann (Volume 11, pages 450-459, July, 2014.)

The devices that were tested are the MP-915 Musicians Electronic Earplug by Etymotic Research, Elk Grove Village, Ill. These are readily available on on the manufacturer's web site for $299 a pair. While judgement about earplugs is a very personal matter for musicians, the study reports that:

> ... 26 orchestral musicians used the devices during rehearsals and performances for at least four weeks, providing feedback throughout this period. While musicians preferred the devices to previous earplugs, they identified issues including difficulty with orchestral balance, perception of dynamics and quality of sound provided by the devices. Results indicate these earplugs are a very positive step towards a usable hearing conservation tool for orchestral musicians to use in conjunction with other risk mitigation measures.

See more at: http://www.tandfonline.com/doi/suppl/10.1080/15459624.2013.875187#tabModule

LIVESTREAMED "SAFETY ON SET" PRESENTATION

The Screen Actors Guild Foundation organized a Livestreamed Social Media Event called: "Safety on Set." It was held at the Kellen Auditorium at the New School in New York City on June 3, 2014.

The purpose was to was to discuss the many occupational health and safety hazards found on sets in light of the recent tragic death of Sara Jones in Georgia on the set of *Midnight Rider*. The goal was to inform SAG-AFTRA members of their rights regarding set safety, and empower them to feel confident in speaking up if their safety is being threatened.

The Panelists were:

* **John Ford**, President of Local 52, IATSE (International Alliance of Theatrical Stage Employees)
* **Monona Rossol**, Safety Representative for Local USA829, IATSE and for the New York Production Locals
* **Jim Damis**, Director of National Field Services, SAG-AFTRA (Screen Actors Guild)
* **Tim Gallin**, Stunt Coordinator on the Fox TV show *The Following*

The Moderator was:

* **Adam Moore**, National Director, EEO & Diversity, SAG-AFTRA

The discussion is available at no-cost to viewers on the SAG Foundation's non-profit YouTube Channel. The link is: https://www.youtube.com/watch?v=vqg97uEdslc, click on Safety on Set or https://www.youtube.com/watch?v=vqg97uEdslc&list=PLTKUQPif_Oft8BKIeW4mrnkrPRBgpB6c2&index=6 to go directly to the video.

FORKLIFT DRIVER DIES IN RETAIL STORE: CARBON MONOXIDE BLAMED

SOURCE: OSHA fines Middletown company after carbon monoxide death, 6-7-14, Mary Ellen Godin, *Record-Journal* staff, Http://www.myrecordjournal.com/meriden/meridennews/4686309-129/osha-fines-middletown-company-after-carbon-monoxide-death.html

OSHA recently cited a Middletown, CT., carpet company on six violations following an investigation into the carbon monoxide poisoning death of a Meriden man in March. The agency did not reveal the amount of the fines.

A part-time employee was found unconscious by a delivery driver on March 11 at the retail store. His family was initially told he had died of a heart attack but later learned from the coroner's office that he died from carbon monoxide poisoning.

OSHA's investigation found that the employee was operating a forklift inside the Custom Carpet building to move stock. A coworker described experiencing symptoms of carbon monoxide exposure and decided to leave the workplace, according to information from OSHA.

The coworker did not see the victim in the warehouse prior to leaving the building. Later, a driver found the unconscious man in the restroom. The investigation determined there was an overexposure to carbon monoxide that resulted in two citations. Four additional citations were related to the forklift itself.

COMMENT. This story underlines the potential for carbon monoxide exposures during the common practice of using diesel-, gasoline- or propane-powered forklifts, cranes and other fuel-powered equipment indoors in large theatrical scene shops and on film locations.

Instead of fuel-powered equipment, there are electric versions of most of this equipment except for the very high cranes (80 feet high or over) used on large sets. When fuel-powered equipment must be used indoors, there are long flexible ducts that can be attached to the equipment exhaust pipes. The flexible ducts then vent the exhaust outside via centrifugal fans. No one should work indoors when there is internal combustion engine exhaust in the air.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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August 2014 **Vol. 28, No. 08**

PHTHALATE PLASTICIZER FINAL REPORT TO CPSC

Editorial

The July 2014 report to the U.S. Consumer Product Safety Commission by the Chronic Hazard Advisory Panel on Phthalates and Phthalate Alternatives has been published and is now available for consumers and others to peruse:

http://www.cpsc.gov//PageFiles/169876/CHAP-REPORT-FINAL.pdf

The 184-page document reports on the hazards and the antiandrogenic effects* of some of the phthalates which led Congress in 2008 to ban three of them for use in children's toys and child care products. Congress also banned, on an interim basis, three other phthalates. CHAP also looked at data on four phthalates currently unrestricted by law. Their recommendations in summary are:

RESTRICTED PHTHALATES	CHAP RECOMMENDS:	NEW BANS RECOMMENDED FOR 4 MORE UNRESTRICTED PHTHALATES:
dibutyl phthalate (DBP)	Keep the ban	
n-butyl benzyl phthalate (BBzP)	Keep the ban	
di-2-ethylhexyl phthalate (DEHP)	Keep the ban	diisobutyl phthalate
diisononyl phthalate (DINP)	Lift the interim ban	di-n-pentyl phthalate
di-n-octyl phthalate (DNOP)	Lift the interim ban	di-n-hexyl phthalate
diisodecyl phthalate (DIDP)	Make ban permanent	dicyclohexyl phthalate

* antiandrogen are endocrine disruptors affect male hormone (androgen) production and receptors

UNTESTED PLASTICIZERS. The CHAP report recommends that "appropriate U.S. agencies obtain the necessary exposure and hazard data" to estimate health risks for six untested phthalate substitutes. These chemicals and their presence in children's toys and child-care products in a 2010 CPSC study are:

* 2,2,4-trimethyl-1,3 pentanediol diisobutyrate (TPIB) found in one-quarter of the products tested
* Di(2-ethylhexyl) adipate (DEHA) found in some toys and articles in the past, not in the 2010 study
* Di(2-ethylhexyl) terephthalate (DEHT) in about one-third of the toys and child-care articles tested
* Acetyl tributyl citrate (ATBC) found in about half of the toys and child-care articles tested
* Diisononyl hexahydrophthalate (1,2-cyclohexanedicarboxylic acid, diisononyl ester) (DINX) found in about one-third of the toys and child-care articles tested
* Tris(2-ethylhexyl) trimellitate (TOTM). This chemical was not found in children's products, but it is a high production chemical and could be used. In the case,"CHAP strongly recommends that appropriate exposure information be obtained before TOTM is used in toys and child care products."

COMMENT. Various industries have complained that they had no input or right to comment before this report was released. That's probably why the report is so easy to interpret as showing we are only playing a game of catch-up by monitoring untested substitute chemicals after we find them. **The take away is that our children's products are not safe. They may contain four phthalates that CHAP recommends be banned and/or six other untested substitute chemicals.** It is the practice of substituting untested chemicals for restricted chemicals that must be banned.

WONDER WHAT THAT YELLOW IS? TRY STRONTIUM CHROMATE

SOURCE: Evacuation Ordered Because of Chemicals, Ben Sutherly, 7-6-14, http://www.dispatch.com/content/stories/local/2014/07/05/hazmat-situation-prompts-evacuation.html

An article about a chemical spill in Columbus, OH, at the AkzoNobel Coatings factory caused an evacuation lasting more than two hours on July 6, 2014. The reporter says there was a build-up of heat in a 2,000-gallon tank. The area evacuated reportedly included at least 100 households.

However, buried in only one of the three reports of this incident was a sentence that alerted ACTS to another and more general toxic problem. The report said:

> Solvents are mixed with a chemical called strontium chromate inside the tank during the production of resins. Strontium chromate is a colorant in resins.

This chemical is bright yellow, the color of the products AkzoNoble makes, including their rust-inhibiting paints and a resin product called Resicoat® that protects pipelines, valves, reinforcing steel and fittings from corrosion and which is also used to insulate electrical components. These kinds of products in the past were also bright yellow because they contained lead chromate. When lead pigments were replaced, apparently they were replaced by yellow strontium chromate.

Although strontium chromate doesn't contain lead, it is not safer. All chromates contain chrome in a valence state (VI), known to cause cancer. So both lead and strontium chromates cause cancer. But strontium chromate is one of the most potent carcinogens ever studied. It is thought that the combination of the known cancer-causing chrome VI with the easily metabolized strontium metal creates a deadly combination. You can see the greater hazard posed by the strontium compound by comparing the workplace air quality standards or threshold limit values (TLVs) for lead, chrome VI and for strontium chromate. (Note: the lower the TLV, the smaller the amount that is allowed in the air and the more toxic the chemical is by inhalation.)

SUBSTANCE	ACGIH TLV-TWA	
Lead chromate		
for the lead in the compound	0.05	mg/m^3*
for the Chrome VI in the cmpd.	0.012	mg/m^3
Strontium chromate ----------	0.0005	mg/m^3

* milligrams/cubic meter

If this strontium chromate compound has replaced lead chromate in all the industrial coatings made by Akzo-Nobel Coatings, it is another cancer hazard lying in wait for workers in many types of jobs. Chromium is also a strong sensitizer.

I contacted EMSL laboratories (www.emsl.com) who have facilities throughout the U.S. They can test for strontium chromate in paints. I'm sure other labs can do this test, but this is one of the labs I recommend. If bright yellow paint is on metal surfaces or beams, floors or walls that does not test positive for lead, get it tested for strontium chromate before scrapping, heat-gunning or sanding it.

SCIENCE ADVISERS BACK LOWER OZONE LIMIT

SOURCE: *LA Times*, Tony, Barboza, 6-27-2014,
http://www.latimes.com/science/sciencenow/la-sci-sn-ozone-science-advisors-epa-20140627-story.html

The U.S. Environmental Protection Agency received a letter from the Clean Air Scientific Advisory Committee recommending a lower ozone air quality limit to replace the current 75 parts per billion (ppb) ozone limit set in 2008 during the George W. Bush administration.

The advisory committee recommends setting the federal standard for ozone, the main ingredient of smog, to below 70 ppb and as low as 60 ppb. They say there is "ample scientific evidence" from many studies showing that ozone at levels of 72 ppb can cause adverse health effects in young, healthy adults after a little more than 6½ hours of exposure. And even at 70 ppb, "there is substantial scientific evidence of adverse effects ... including decrease in lung function, increase in respiratory symptoms, and increase in airway inflammation."

The committee warned that a limit of 70 ppb would still pose a risk to children, people with asthma and the elderly and may not meet the Clean Air Act's requirement to protect public health "with an adequate margin of safety."

This information is not new to EPA. In 2010, EPA's own personnel calculated that setting the ozone standard at 60 ppb would avoid 4,000 to 12,000 premature deaths, prevent 21,000 hospital and emergency room visits and cut missed work and school days by 2.5 million days. Those health benefits would drop significantly if the standard were set at 70 ppb. But in 2011, President Obama went against the recommendations of the EPA and its scientific advisors and halted a proposal to lower the nation's ozone standard to a similar range, from 60 ppb to 70 ppb.

The stricter ozone limit endorsed by the committee would bring cleaner air to millions of people, but add billions of dollars in costs to industry. Any proposal to tighten the ozone standard is likely to face fierce opposition from business groups.

The science committee's recommendations are part of a review the EPA is required to complete every five years under the Clean Air Act. The EPA is under a court-ordered deadline to issue a a new ozone proposal by Dec. 14.

COMMENT. While artists can't do much to influence whether or not a stricter EPA ozone limit is instituted, we can take deliberate ozone pollution out of our lives. One way is to refuse to purchase ozone-generating electrostatic or ionizing air purifiers for their homes such as the Ionic Breeze. Even worse are the ozone generating systems, some of which are even designed to be hung around the neck, to deliver ozone to a person's breathing zone.

Welding also generates ozone. Provide exhaust ventilation systems such as the flexible duct or snorkel exhaust which can be positioned at the point of weld. This system will also remove the other toxic pollutants generated by welding.

Art welders in schools and other workplaces should know they are not safe if the ozone levels are below the levels allowed by the Occupational Safety and Health Administration (OSHA). The OSHA ozone permissible exposure limit (PEL) is 0.1 part per million or 100 ppb. Yet it is now clear that even most healthy adults will have respiratory deficits at 70 ppb.

ALUMINUM & OTHER METALS: MORE FIRES & INCIDENTS

SOURCES: "JFRD Extinguishes Warehouse Fire South of JAX Airport," Chanel 47, wtev news, Fox 30, actionnewsJax.com 7-9-14; Zinc Fire Prompts Evacuation at Northeast Philadelphia Manufacturing Plant, July 29, 2014; Titanium Dust Catches Fire at Spirit Aerosystems, July 29, 2014, http://ksn.com/2014/07/29/spirit-aerosystems-reporting-titanium-fire/; http://news.yahoo.com/zinc-fire-prompts-evacuation-northeast-163149032.html http://www.actionnewsjax.com/videos/news/jfrd-responds-to-warehouse-fire-south-of-jax/vChrGG/ & "Hazardous Material Cleaned up after Sludge Leak in Dartmouth, *Herald News*, Ian Fairclough, 7-18-14, http://thechronicleherald.ca/metro/1223646-hazardous-material-cleaned-up-after-sludge-leak-in-dartmouth

THREE METAL DUST FIRES IN JULY: On July 29, 2014, there were two fires, one in a Philadelphia plant involving zinc dust and the other cause by titanium dust at Spirit Aerosystems in Wichita. KS. Earlier that month on July 9, aluminum dust fire broke out in Jacksonville, FL. This fire was at an automobile wheel-rim manufacturing facility where the aluminum dust was collected in a bag house dust collector that was located outdoors. This dust easily ignites, even with a static electric discharge. Or if iron dust is mixed with the aluminum, a thermite fire-reaction can start. Once ignited, aluminum fires are hard to extinguish. All aluminum dust collectors, even small vacuum canisters, must be ones which the manufacturer makes especially for aluminum dusts. However *all* metal dusts can burn and most are used in pyrotechnics as fuel for explosive reactions.

ALUMINUM SLUDGE INCIDENT. On July 18, 2014, in Dartmouth, NS, Canada, a Hazmat team from nearby Halifax was called to deal with a leaking 45-gallon drum. The drum was full of aluminum sludge that was picked up by a local waste disposal truck. It was the byproduct of a local industry. A quote from the report is interesting:

> The material, aluminum sludge, was oozing from a 45-gallon drum in the back of a truck.... Firefighters were called just before 11 a.m. about the contents of the drum having some kind of reaction and possibly being under pressure.
>
> "We don't know exactly what happened or why there was any kind of reaction at all," divisional commander Mike Blackburn said.

This quote shows that even Hazmat teams often are unaware that aluminum reacts with water. Aluminum metal particles mixed with water will react to produce aluminum oxide plus flammable hydrogen gas. I have even seen this reaction occur when people try to mix powdered aluminum pigments with water-based latex paints. The paint will extrude out of the can or even blow the lid off. The aluminum-water reaction can also complicate dust fires if water extinguishers are used.

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CREDIT: *ACTS FACTS*,
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181 Thompson St., #23
New York, NY 10012 - 212-777-0062
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ISSN 1070-9274

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THE MONTHLY NEWSLETTER FROM

ARTS, CRAFTS AND THEATER SAFETY (ACTS)

181 THOMPSON ST., # 23, NEW YORK, NY 10012-2586 PHONE 212/777-0062

September 2014 **Vol. 28, No. 09**

MESOTHELIOMA IN ARTISTS & TEACHERS

Editorial

The last *ACTS FACTS* article about asbestos-contaminated talc was in 2009. It's time to do it again.

THREE MESOTHELIOMA DEATHS. In 1980, I interviewed my very first mesothelioma victim. She was a doctor's wife who had a small ceramic doll business in Port Ewan, New York. She used talc-containing slips and died of mesothelioma at age 54 in August of 1981. I wrote a short obituary for her in a newsletter called *Art Hazards News*.

Then in 2004, a man who had used talc in his ceramic studio 20 years earlier, died of mesothelioma at age 53. The widow filed suit and the major defendant was RT Vanderbilt who mined and sold the talc that this man used in his glazes. In 2006, a jury determined this talc caused this man's death and awarded $3.35 million in compensatory damages plus an undisclosed amount of punitive damages to the widow. I was retained in this case and wrote it up in *ACTS FACTS*, December 2006.

In 2007, a Kentucky jury awarded $5,659,000 in total damages to the husband of woman tile-maker who had died in 2005 at age 68. I was not retained in this lawsuit, but the lawyer, Joe Satterley, provided information to me. Included was the testimony of Paul Vanderbilt, CEO of the talc company, who was subpoenaed as a witness. *ACTS FACTS*, May 2008, published the details.

SEVEN CASES AFTER 2009. Since they lost the two jury trials, I know of no other lawsuit in which Vanderbilt has been before a jury. But I have now been retained in seven more suits, ones I can't tell you about. I have been advised that when cases like these settle, there are confidentiality agreements involved. But without these stories, how can I convince ceramic artists and teachers that they are at risk? How can I alert those who still have old stocks of this talc in their studios?

I consulted our lawyer and lawyers for some of the plaintiffs in the mesothelioma lawsuits about what I am allowed to say. The consensus is that I can divulge how many cases I've been retained in and some basic information about the activity which exposed them to the dust. I can say that these people include an artist, ceramic teachers at levels from children's classes to college and people who did crafting or teaching at home. In these cases, RT Vanderbilt is, or was, one of the defendants.

TEN CASES IN TOTAL. The three cases I could write about, plus the seven that I can't, adds up to ten artists, teachers or craft workers who have been diagnosed with mesothelioma after exposure to Vanderbilt talc. I expect to see more lawsuits since the latency period for mesothelioma is 20 to 40 years. Worse, I am still finding this talc in college pottery studios every year. In one school, the teacher told me that he had heard the mine was closing so he stockpiled the talc.

WHAT TO DO. If you are an artist or a teacher of ceramics or sculpture, or work with modeling materials for any reason, check the bins, bags, containers and the stock rooms. If there is any NYTAL 100, Ceramitalc or other Vanderbilt talcs, or if you have old supplies of premixed talc clays, glazes or modeling products like Durham's Rock Hard Putty, don't use them. If you have been exposed to the dust from these materials, you might want to double bag them securely and talk to a lawyer. And keep your doctor's appointments. Early detection can lengthen life after diagnosis.

APOLOGY TO READERS.

We're sorry that this newsletter was not mailed until mid month. We've been pretty good at getting it out around the first. However, waiting for approval for the page one story from the various interested parties took far more time that we anticipated.

I personally was anxious to get it out as soon as possible. It has been on my conscience that it has been seven years since I've been able to remind artists about this issue. In those seven years, I have found this asbestos-contaminated ceramic talc or products containing it in almost half of the schools I visited or inspected. This story is not going to go away. Neither are we.

GOLDEN'S SYNTHETIC OX GALL RECALLED.

SOURCE: CPSC Recall number: 14-744, www.cpsc.gov.

A synthetic ox gall manufactured and sold by Golden Artists Colors, a product used by water color artists as a wetting agent, was recalled by the U.S. Consumer Product Safety Commission (CPSC) on August 19, 2014. The recall warns consumers to stop using the product and notes it is illegal to resell or attempt to resell a recalled consumer product.

Usually this means a company was caught selling something hazardous. But in this case, the story is a little different. According to Golden's Director of Regulatory Affairs, Ben Gavett, an error in the formulation was caught by their own people. As soon as it was realized that too much of a preservative was in the product, Golden alerted all of its distributors to remove the product from their inventories. Next, Golden themselves called the CPSC to initiate the recall.

WHAT IS THE RISK? The chemical preservative present in amounts greater than allowed was MIT. Also known as methylisothiazolinone, MIT is a biocide in a class of chemicals called isothiazolinones. These chemicals are commonly used in personal care products. Too much MIT in cosmetics is known to cause skin reactions, allergies and blisters.

There also isn't much long-term or chronic hazard data on MIT, or on most of the other cosmetic preservatives. That is a systemic problem in our country since chemical manufacturers simply don't test their chemicals for chronic effects. Yet small manufacturers like Golden need to add something to prevent the growth of harmful bacteria and molds in their products. It is likely that MIT, when used in the permitted amounts, is safe for consumers. This would be especially true for products like ox gall, which are not destined for use on the skin.

WHAT TO DO? If you have a bottle of Golden Synthetic Ox Gall, look for the product code 7001000-2 on the label and one of the following batch numbers printed on the bottom of the jar: 365254, 366319, 366405 or 366626. Then follow Golden's President Barbara Schindler's advice:

> "If you have this product in your possession, please call GOLDEN Customer Service at 1-800-959-6543 so that we can issue a call tag for the return of the product to our facility. Once we have confirmed receipt of the material, we will ship a replacement container to you."

You can call Golden Artist Colors at (800) 959-6453 from 8:30 a.m. to 5 p.m. EST, Monday through Friday or go to www.qorcolors.com and click on "News" for more information.

COMMENT. This incident substantiates ACTS' view that Golden Artists Colors is one of the better art material manufacturers. Clearly, anyone can make a mistake. What the manufacture does to correct the mistake is what tells the tale.

13 HURT IN CHEMICAL DEMONSTRATION AT MUSEUM

SOURCES: Associated Press, Scott Sonner, September 4, 2014, http://gothamist.com/2014/01/04/teachers_conduct_scrutinized_in_rai.php, http://newyork.cbslocal.com/2014/01/02/students-treated-for-burns-as-uws-high-school-chemistry-experiment-goes-awry/ & statement from the ACS Committee on Chemical Safety Regarding the "Tornado Experiment" Explosion in a Science Museum in Reno, Nevada, September 5, 2014.

On Wednesday, September 3, 2014, a chemical incident at a science museum in Reno, Nevada, injured a number of people including children. The experiment at the Terry Lee Wells Discovery Museum was described as one intended to create a "smoke tornado" by wetting a cotton ball with methanol and boric acid and igniting it on an open bench top. The boric acid gives the flame a cool green color and the heat causes the flame to swirl like a tornado.

It appears that the demonstrator forgot to put the methanol on the cotton ball, lit it, and then poured the methanol on the burning cotton ball. The flame ignited the methanol including that in the container from which it was being poured to cause a flash fire. Thirteen people, most of them children were transported to the hospital, several with minor burns or smoke inhalation.

RAINBOW DEMONSTRATIONS. This demonstration is similar to one that has caused countless injuries in chemistry class demonstrations for years. The last serious one of these in New York was on January 2, 2014, at the Beacon School on West 61Street. The demonstration was in a 10th grade science class and two of the injured children sustained serious burns.

The Reno museum accident has prompted the American Chemical Society's Committee on Chemical Safety (CCS) to issue the following statement regarding the use of methanol on an open bench.

> CCS calls upon all of our educators to help us to reach out to all members of the scientific community to look more carefully at all demonstrations involving the use of methanol on open bench tops. The educational value of these particular demonstrations should be carefully weighed against the risk of flash fires from ignition of methanol vapors. At no time should methanol be poured from an open bottle on an open bench top in the presence of a flame or source of ignition – the risk of a flash fire is very great.

PRECAUTIONS FOR ARTISTS. While the CCS statement is directed to the scientific community, ACTS would extend and modify it to include the following precautions for museums, performance artists, theater special effects people and other non-science uses:

1. Chemical demonstrations for whatever purpose, should not be done in the open with any low flash point solvent such as methanol or acetone.

2. Only people with education and experience in chemistry or a license in pyrotechnics should use chemicals and/or fire in locations where the public is in proximity.

3. Before any chemical demonstration is done, a risk assessment should be written and filed for employees which lists the risks and the precautions to be taken, as OSHA requires, for potentially hazardous workplace activities.

The science community has developed plexi barriers to protect spectators and has found ways to teach the same principles in a chemistry fume hood with smaller amounts of chemicals to reduce chemical waste. Artists and theater effects people also need to use their creativity to find safe ways to meet the their artistic objectives without harming people or the environment.

NEWPORT TOURIST SITES CITED BY OSHA

SOURCES: http://finance-commerce.com/2014/08/newport-mansions-cited-for-unsafe-work-conditions/, Newport mansions cited for unsafe work conditions, Associated Press August 21, 2014.

Some of the most visited tourist attractions in New England, known as the Gilded Age Newport mansions, were cited by the federal Occupational Safety and Health Administration (OSHA) inspectors for exposing workers to lead-based paint and potentially fatal falls. The mansions include The Breakers, The Elms, Chateau-sur-Mer and Marble House.

The Preservation Society of Newport County was cited for 10 serious violations, which means there is a substantial probability that death or serious physical harm could result, OSHA said. The citations and proposed fines totaling $51,840 were announced August 21, 2014.

Inspectors opened an investigation on May 8, when two OSHA inspectors happened to be driving past one of the mansions and noticed employees working on a ladder at an outbuilding that was not properly placed, spokesman Ted Fitzgerald said. The subsequent investigation found that workers were not taking proper precautions when working with lead-based paint, Fitzgerald said.

"The society's care and maintenance of historic structures should not come at a cost to the health and well-being of its workers. It must take effective action to ensure that these hazards don't occur again," said Patrick Griffin, OSHA's area director for Rhode Island. The Spokeswoman for the preservation society said they had an outstanding safety record and had never been cited before.

COMMENT. My experience with historic sites in the U.S. is similar. They rarely have prepared the required OSHA Lead Paint Maintenance and Management Program or trained all workers on site. The worst of these sites are those that have actual peeling paint that the preservationists consider "picturesque." These conditions are most likely to be found in historic prisons and old houses that guides tell tourists are possibly haunted or which are used for events such as Halloween parties.

Lead wipe samples from the floors of some of the peeling paint sites that I have inspected have ranged from 10 to 1000 times the residential lead dust standard. These levels are high enough to be hazardous to guides, to movie company personnel who shoot film in these locations and even young tourists who will only be on the site for a few hours. Workers and parents of young tourists should be far more afraid of lead paint than ghosts.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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New York, NY 10012 - 212-777-0062
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ISSN 1070-9274

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181 THOMPSON ST., # 23, NEW YORK, NY 10012-2586 PHONE 212/777-0062

October 2014 **Vol. 28, No. 10**

WYOMING COMMUNITY COLLEGE STUDENT SUES FOR INJURY

SOURCES: "LCCC student sues college for injury," *Wyoming Tribune Eagle*, Aerin Curtis, 7-22-14, http://trib.com/news/state-and-regional/lccc-student-sues-college-for-injury/article_3dfb04e6-bab4-5582-9ee6-7875219efc27.html; "Former student sues LCCC over hand injury," *Wyoming News*, 7-19-14, http://www.wyomingnews.com/articles/2014/07/20/news/20local_07-20-14.txt#.U8wU-2dOXol & personal communication from S. Stephen Melchior's office.

Former Laramie County Community College (LCCC) student, Michael Plemens, is suing for damages related to an injury he suffered on equipment in a welding class in 2011. Plemens said the college was negligent in its care of machinery and had removed a safety device. The metal cutting device used in the class amputated the tips of two fingers on his left hand causing permanent injury to the hand, resulting in pain and difficulty in grasping small or fine objects, according to the complaint filed with the Laramie County District Court.

Plemens is suing members of the LCCC Board of Trustees, college president Joe Schaffer, vice president of administration and finance Carol Hoglund, instructors or employees Rob Benning, Robert LaFaso, Larry Van Why and Jared Cooper, as well as several unknown college employees.

OSHA VIOLATIONS. According to Plemens' complaint, a visit by the Wyoming Department of Workforce Services to the shop classrooms after the accident found eight serious and eight non-serious OSHA violations, including a violation for improperly installing the machine's safety device. Plemens claims the OSHA findings demonstrate the College's and its employee's "disregard for the safety of its/their students and their ignorance and/or apathy regarding normal and routine safety procedures necessary to protect students from serious injury while in the shop classroom."

THE EQUIPMENT. Plemens lawyer is S. Stephen Melchior. A member of his office staff told us that the metal cutting machine that caused the injury is the Jet Foot Shear. This same type of metal shears are made by Mittler Bros., Woodward, Shop Fox, Di Arco, Elga, Columbia, CNC, Tennsmith, Baileigh and more. I see these shears in almost every university metal or printmaking shop I go through. Many are improperly guarded. The flaws, starting with the one I see most often, are these:

* The shears were made years ago when the guards didn't cover the ends of the blade and/or sections of the scalloped bottom edge are higher than the 1/4 inch opening requirement.
* To accommodate thicker cuts, the guard has been set up above the required 1/4 inch level.
* The guard is missing or broken.

There is never a sufficient excuse to remove or defeat the guard on any shop equipment in a school. If a project cannot be done with the guard in place, another project should be found for the students. There is no class work or teaching objective worth this kind of risk.

THE BACK STORY. Plemens is a U.S. Army veteran who served in Operation Desert Storm and he suffers from post-traumatic stress disorder. He started the auto body course as a therapeutic program. Because he "enjoyed working with his hands, he and his (Veterans Affairs) counselor agreed that the auto body program offered by (LCCC) might help (Plemens) find a way to get out and participate once again in normal life activities," according to court documents.

After the incident, Plemens contacted the school's insurance administrator and was told that the school does not cover student injuries. He was left with no alternative but to sue. The lawsuit is asking for coverage of several items, including medical expenses; loss of earning capacity; permanent physical impairment; emotional distress; shock, fright and worry; discrimination and attorney fees.

COMMENT. While this accident could have happened to anyone, colleges and universities must remember that some of their students have additional issues and risk factors. The safety equipment, training and supervision must be as close to perfect as possible.

STATE FAIR SHUTS DOWN ACRYLIC FACE-PAINTER'S BOOTH

SOURCE: "State Fair temporarily shuts down face painter using acrylic paints," KOB Eyewitness News 4, Kai Porter, 9-18-14, http://www.kob.com/article/stories/s3565953.shtml#.VByjL2d0zok

On September 18, 2014, the New Mexico State Fair temporarily shut down one of the face-painting booths after safety concerns about the paint being used on children's faces surfaced. The local KOB TV station reported that the booth of one of the artists was shut down after fair officials found he was using paints that were not approved by the Food and Drug Administration (FDA) for use on the skin.

The KOB report said that there was no state law regulating face-painters like there is for tattoo artists, so the vendor hasn't done anything illegal. But parents interviewed by reporters said they are relieved the State Fair shut him down.

A KOB reporter interviewed Linda Bazan, a mother, who reported the vendor to fair officials. She said, "Acrylic paint contains heavy metals...lead, nickel...it also contains formaldehyde." Her complaint was taken seriously. "In doing a little more research, we don't feel completely comfortable with it either," said Erin Thompson, with the New Mexico State Fair. "So we've advised him whatever products he's going to use should be up to the highest standards...to be FDA-approved."

Andrea Gomez, the owner of Fierce Faces, another face-painting shop that does use FDA-approved paint, says it's up to parents to ask what kind of paint an artist is using. "Our skin can have reactions to the chemicals that are in acrylic paint, and all the FDA-approved paint is water-based paint that is safe for the face and body," said Gomez.

COMMENT. The KOB report is correct in saying that there are no state laws restricting face paints. But the FDA regulations do not allow any product to be used for painting the body, face, eyes or lips unless it has approvals for those uses. Thus the vendor violated this federal regulation.

And the mother who complained said, adult art paints may contain toxic metal pigments. Children's acrylic paints usually do not contain toxic metal pigments, but they usually contain pigments that are not the pure FDA batch-approved pigments approved for use on the skin.

The confusion over the safety of these paints is, in large part, the fault of 1) those art material manufacturers who label their products "nontoxic" without explaining the limits of this label and 2) those whose advertisements show children with paints all over their faces and hands.

GREEN BUILDING BURNS DURING CONSTRUCTION

SOURCE: "Blaze rips through Morgan Sindall Nottingham lab project." *Building News*, Iain Withers, 9-15-14, http://www.building.co.uk/news/blaze-rips-through-morgan-sindall-nottingham-lab-project/5070898.article

A £16 million, nearly-finished chemical laboratory at Nottingham University in the United Kingdom burned to the ground on September 12, 2014. Sixty fire-fighters and 10 engines battled to bring the fierce blaze under control but they were unable to save the timber building.

The building was a project of Morgan Sindall, a group of professionals that offers national design construction and infrastructure services to private and public sector clients. The project was partly funded by GlaxoSmithKlein and was billed to be the world's first zero carbon chemistry laboratory. The external structure of this Carbon Neutral Laboratory for Sustainable Chemistry building was largely completed and it was due to open next year. Instead it has highlighted how vulnerable timber-frame structures are to fire during the construction phase.

A spokesperson for Morgan Sindall said: "Everyone on the project team has been working hard to deliver this state-of-the-art low carbon laboratory for the university and we are of course greatly saddened to see the devastation caused by the fire." A Nottingham University spokesperson told the *Nottingham Post* that it "maintains its commitment to a carbon neutral green chemistry laboratory."

The spokesperson added: "We are considering this to be a setback to our plans, there is a determination to re-build but at this stage it is far too early to say whether this will be on the same site, how much it might cost and when we could expect to see that facility open."

COMMENT. ACTS is all for carbon neutral buildings when appropriate. But a laboratory built in wood doesn't seem to make common sense. And as a colleague of mine and Principle of Midwest Chemical Safety, LLC, Harry Elston wrote recently, "I'd be willing to bet that they emitted some carbon in the end...."

MOLD CLOSES THE OTTAWA SCIENCE & TECHNOLOGY MUSEUM

SOURCES: "Canada Science and Technology Museum closes indefinitely due to airborne mould," Staff, *The Canadian Press*, 9-12-14, http://globalnews.ca/news/1559374/canada-science-and-technology-museum-closes-indefinitely-due-to-airborne-mould/; "Museum mould repair likely to take weeks," *Ottawa Citizen*, 9-16-2014, http://ottawacitizen.com/news/local-news/museum-mould-repair-likely-to-take-weeks-spokesman & *CTV News Ottawa*, "Airborn mould latest blow to Canada's crumbling national science museum, 9-11-14, http://ottawa.ctvnews.ca/airborne-mould-latest-blow-to-canada-s-crumbling-national-science-museum-1.2003492

On September 11, 2014 one of Ottawa's major museums closed after air tests found mold at unacceptable levels. The Science and Technology Museum announced it will remain shut down until remedial work is finished.

The staff was hoping to reopen on Saturday the 20th, but on Thursday the 18th, workers found mold inside the south wall and the opening now will have to wait.

COMMENT. ACTS is greatly saddened by this news. This important museum has been struggling with an old building and funding issues for some time. We hope some of our readers will consider going to http://www.sciencetech.technomuses.ca/english/ and donating to the Science and Technology Museums Corporation to help them out.

SILICA EXPOSURES FOR BUILDING RESTORATION WORKERS

A new study has provided important data on silica exposure to stoneworkers during restoration work:

"Determinants of Respirable Crystalline Silica Exposure Among Stoneworkers Involved in Stone Restoration Work, C. B. Healy, et al., *The Annals of Occupational Hygiene*, Vol 58, Issue 1, pp. 6-18

THE STUDY. Crystalline silica exposures among Irish restoration stoneworkers was done to determine their risk of developing cancer, silicosis and other health effects. Carried out over a 3-year period, the study population consisted of 35 restoration stoneworkers employed with the Commissioners of Public Works Ireland, who manage, maintain and restore Ireland's monuments.

Restoration stone masonry can be distinguished from construction stone masonry by the use of tools and techniques. These stone workers are essentially sculpting the decorative stones which often requires the worker to work in very close proximity to the exposure source. Restoration stoneworkers must follow conservation guidelines and cannot substitute the materials with low silica alternatives.

Sandstone was the most widely used historic construction material. This sandstone has an average quartz content of 82% or higher. Other materials being used included limestone, lime mortar and granite. Minor restoration of a monument only involved repointing, but major restoration required restoration and/or construction on the new sections. This work was done in a stone cutting workshop.

THE SHOP. The description of the shop was like that of many college sculpture studios. The tools included a water-cooled cutting saw, hand-held disc and cylinder polishers, large and small angle grinders, pneumatic and hand chisels, and brushing tools. Flexible duct systems were installed which are inappropriate for collecting the high volumes of dust and difficult to reposition. Many kinds of respirators were used but most were disposable masks and half-face respirators. There was no training, fit testing or formal purchasing policy.

FINDINGS. All categories of work done on all the various stones need better ventilation and respiratory protection. The air sample results found to be over the 0.025 milligram per cubic meter (mg/m^3) U.S. safety standard were the following:

Sandstone:	76%	>0.025	mg/m^3
Limestone	7%	"	"
Lime mortar	4%	"	"
Granite	50%	"	"

COMMENT. Clearly working with stone in restoration work or in sculpture requires local exhaust systems such as downdraft tables or vented booths. In addition, a full respiratory protection program must be instituted. Selection of respirators must be based on air tests and a risk assessment.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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ISSN 1070-9274

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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

November 2014 **Vol. 28, No. 11**

TWO FLUBBED SCIENCE DEMOS RESULT IN CHARGES/CITATIONS

OSHA issues 2 citations after fire at Reno science museum that injured 13, Michelle Rindels , AP, October 27, 2014, http://www.oshatoday.com/news-digest-item/reno-science-museum-cited-after-fire-that-injured-13/?nl=5459; CBS Denver, October 22, 2014, http://denver.cbslocal.com/2014/10/22/former-teacher-charged-in-lab-explosion-that-injured-students/; & Nelson Garcia, KUSA, October 8, 2014 http://www.9news.com/story/news/education/2014/10/08/fired-science-teacher-no-state-license/16945045/ & http://cenblog.org/the-safety-zone/2014/11/csb-recommends-stricter-controls-for-educational-demos/

There have been many accidents over the years in which students and/or teachers have been burned or injured while doing or observing science demonstrations. In the month of September, a total of 22 children and two adults were injured by one specific type of demonstration. Often called the "rainbow experiment," it is used to demonstrate that various metal compounds, when ignited in methanol, burn with their own unique colors. This is the same effect used to color fire works.

However, methanol is a highly flammable liquid and should only be used by people who are trained in solvent hazards. The audience also should be protected by a barrier or by distance from the effect. The Chemical Safety Board has provided a publication and a video to explain this clearly to misguided teachers and activities personnel who are tempted to try the flashy experiment. See:

http://www.csb.gov/assets/1/19/Lab_Safety_Bulletin_2014-10-30-pdf
http://www.csb.gov/videos/after-the-rainbow/

Most of the recent methanol accidents have disappeared from the news into that fog created by personal injury lawsuits. But two have resulted in actions that have been made public. Both accidents occurred this past September, the first on September 3rd and the second on the 15th.

ACCIDENT #1. The Terry Lee Wells Nevada Discovery Museum in Reno, NV, was issued two citations after a green methanol fire on a turn table meant to cause a swirling flame like a tornado led to a flash fire that injured 13 people. Nine people were treated at a hospital. All were released within 24 hours. The employee who did the effect was first placed on leave and then resigned.

The Discovery Museum was cited by the Nevada Occupational Health & Safety Administration (NOSHA) for not doing a workplace hazard assessment for personal protective equipment and for failing to train employees to safely use flammable chemicals. Each citation carries a penalty of $1,050. According to NOSHA, the Museum officials won't challenge the citations.

COMMENT. While the fines are too small, at least the blame is placed on the museum where it belongs. Employers must ensure that their employees are fully trained to do their work and that any potentially hazardous task generates a written risk assessment. These same principles apply to dangerous demonstrations or projects at art schools or for theatrical special effects.

ACCIDENT #2. At a school, known as the SMART Academy, four students were injured, one seriously, during the rainbow demonstration in the high school chemistry laboratory. The teacher

who conducted the experiment was Daniel Powell, age 22 years. He suffered minor injuries to his hand and declined treatment. The seriously injured boy was wearing a synthetic T-shirt that melted when the flame hit him.

After the accident, Powell was fired by the school and subsequently charged by the Denver Police Department with misdemeanor assault. The school was not charged.

UNLICENSED TEACHER. The SMART school is part of the Strive Preparatory School network, a charter school system that operates in Denver. It was Powell's first year teaching in the network and he had no state teacher's license. Nora Flood, president of the Colorado League of Charter Schools, defended the practice of hiring unlicensed teachers in a Denver *Chanel 9News* interview:

> "There are always challenges in finding good teachers and so we're actually able to go outside the realm of the traditional teacher licensure program to try to find the best fit for our schools," Flood said. "It's one of the things we hold dear and that is, that it is up to the school to be able to determine for themselves whether they want to have that licensure piece."
>
> Flood says that allows, for example, a science-based school to seek a professional engineer to teach students about engineering. "You have to be an expert in the field you are going to teach," Flood said.

COMMENT. Poppycock. Flood's statement does not apply to hiring an unlicensed, 22-year-old, first-timer to teach chemistry. It appears that one of the SMART school's alternative, money-saving strategies is to hire newbies at lower salaries. The school also can save money if it doesn't train or prepare these teachers for hazardous tasks and then blames accidents on them.

The OSHA regulations require employers to do risk assessments before tackling potentially dangerous tasks and to ensure that employees are properly trained. **Where is the Denver OSHA?**

SAWSTOP CROSSCUT ATTACHMENT AVAILABLE

www.sawstop.com/table-saws/

Sawstop® table saws, best known for the video of inventor, Steve Gass. stopping the blade with a touch of his finger, now provides users with an attachment enabling woodworkers to rip or crosscut material up to 48 inches deep. A 43 inch-wide fence extends past 58 inches to support large pieces. The attachment will fit the Contractor, Professional and Industrial models. ACTS recommends them.

WARREN ANDERSON: DEAD AT 92

Warren Anderson died on September 20, 2014, at age 92. He passed away quietly in a nursing home in Vero Beach, Florida. Anderson, the former Union Carbide Corporation CEO, was wanted in India on charges related to the 1984 Bhopal chemical disaster that killed somewhere between 10,000 and 16,000 people and injured at least another 550,000.

Seven other UCC employees were convicted of causing death by negligence and jailed. But the man in charge of the corporation whose policies led to the disaster, fled when he was out on bail. India's repeated efforts to extradite Warren were rebuffed by US courts. Once again, we see that those at the very top rarely face justice, even when their actions lead to the deaths of thousands.

STUDY LINKS COSMETIC TALC TO MESOTHELIOMA

SOURCE: Study: Cosmetic talc products carry asbestos peril, Andrew Schneider, Hearst Newspapers, 10-31-14, http://www.seattlepi.com/national/article/Study-Cosmetic-talc-products-carry-asbestos-peril-5861858.php

Investigative Reporter, Andrew Schneider wrote a detailed article about a study released this October that links a particular brand of talcum powder to mesothelioma in women. The study is:

> Asbestos in commercial cosmetic talcum powder as a cause of mesothelioma in women, Ronald E. Gordon; Sean Fitzgerald; James Millette, *International Journal of Occupational and Environmental Health*, Volume 20, Issue 4 (October 2014), pp. 318-332

THE AUTHORS & THE METHODS. Gordon works in the Department of Pathology, Icahn School of Medicine at Mount Sinai, New York. Fitzgerald is with SAI Laboratory, Greensboro, NC, USA and Millette is with MVA Inc., Duluth, GA. Their study was paid for in part by lawyers for asbestos plaintiffs but no funds were provided for writing the manuscript. The the laboratories doing the analyses are available for both defense and plaintiff clients.

The asbestos was identified using transmission electron microscope (TEM) formvar-coated grids to determine the concentrations of one brand of talcum powder directly, on filters, from air collections on filters in glovebox and simulated bathroom exposures and human fiber burden analyses. The grids were analyzed on an analytic TEM using energy-dispersive spectrometer (EDS) and selected-area electron diffraction (SAED) to determine asbestos fiber number and type.

THE PURPOSE. Cosmetic talcum powder has been used for decades. It is known to cause lung fibrosis and has been suggested as a causative factor in development of ovarian carcinomas, gyecologcal tumors and mesothelioma. This study was designed to fill in the gaps in the data connecting talc to mesothelioma in three different ways:

1. Tracking the asbestos-contaminated talc from the mines to the a particular body-powder product, Cashmere Bouquet. The authors working from three different laboratories worked for more than a year to track the asbestos-contaminated talc from the mines to the body-powder product used by a women who died of mesothelioma and who used the product for years.

2. Linking Cashmere Bouquet talcum to the cancer in a particular victim. The lung and lymph node tissues of the study victim that were removed at autopsy and which revealed pleural mesothelioma were digested and analyzed. These tissues were found to contain the anthophyllite and tremolite asbestos talc contaminants like those in the Cashmere Bouquet.

3. Simulating common conditions of talcum powder use to document exposure. Millette, a forensic engineer, built a sealed chamber about the size of a typical bathroom. He installed air collection filters in the breathing zone of a hypothetical talcum powder user. Then he had a test subject wearing a protective respirator use a shaker container and later, a powder puff, to apply powder to his chest, under his arms and around the shoulder and upper arm area.The experiments confirmed that using contaminated talcum powder in closed spaces like bathrooms increases the likelihood of inhaling the asbestos fibers.

In another experiment, Fitzgerald, a geologist, modified a large, sealed glove box equipped with air collection filters and tested for the presence of asbestosfibers from the talc he rubbed on his hands. Repeated testing consistently documented that the contaminated talcum powder released high levels of inhalable asbestos into the air.

CONTINUING RESEARCH. Schneider reports that Gordon told him that "The volume of new [tissue] samples is increasing from around the world." Gordon said he is getting "lung tissue samples from patients with mesotheliomas where their only source of asbestos was from using cosmetic talcum powders containing the asbestos." "Clearly this is not a situation where asbestos-contaminated talc is just harming a few people from any one place," Gordon says.

And Fitzgerald told the reporter that he investigated a group of women with mesothelioma. Most of these are in the 50s, but several are younger, Fitzgerald says.

RELEVANCE TO THE ARTS. We have been concerned about industrial talcs used in ceramics for many years. But this new study is a wake up call for theatrical make up artists and performers.

In addition, ACTS is inquiring about the mines from which the several talcs in Cashmere Bouquet come from to see if there is a problem with the talcs we are currently recommending for ceramics. The study found the Cashmere Bouquet talcs were from mines in Montana, North Carolina and imported talc from a mine in the Val Chisone region of the Italian Piedmont.

DEATHS FROM EXPOSURE TO SHALE CRUDE OIL?

Mike Soraghan, E&E reporter, Energy Wire: Monday, October 27, 2014.
http://www.oshatoday.com/news-digest-item/poisoned-by-the-shale-investigations-leave-questions-in-oil-tank-deaths/?nl=5459

Dustin Bergsing, age 21, worked in the North Dakota Bakken shale oil fields. It was his job to pop the hatch on the shale crude oil tanks and record how much was inside. In January of 2012, he was found slumped below the open hatch of a tank of shale crude. By dawn, he was dead. An autopsy showed that he died of "hydrocarbon poisoning due to inhalation of petroleum vapors."

At least three other men have died this way during the Bakken Shale boom. They were found lifeless on steel catwalks next to the hatches they had opened to measure the shale oil levels.

COMMENT. It is time to debunk the oil industry's assertions that crude oil is a harmless, viscous, mixture of low-volatility hydrocarbons. Instead, it contains enough gas and volatile solvents to kill. This fact is needed to refute the theory that fracturing huge layers of shale oil rock to retrieve trapped gas, a process better known as "fracking," doesn't release toxic crude oil chemicals deep underground which are capable of migrating into ground water and even to the surface in time.

ACTS FACTS sources: the *Federal Register* (*FR*), the *Mortality and Morbidity Weekly Report* (*MMWR*), *Environmental Health Perspectives* (*EHP*), and many other publications. Call for further information on sources. Editor: Monona Rossol; Research: Tobi Zausner, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield, Janet Sellery; Staff: Kathy Frost, John Fairlie, OES.

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December 2014 **Vol. 28, No. 12**

ARE WATER-BASED PAINTS BETTER THAN SOLVENT-BASED?

SOURCE: Decided October 17, 2012, SUPREME COURT OF THE STATE OF NEW YORK APPELLATE DIVISION : Second Judicial Department, Peter B. Skelos, J.P., Thomas A. Dickerson, Ariel E. Belen, Robert J. Miller, JJ., 2011-00053, (Index No. 22766/07), Walter Andrade, appellant, v T.C. Dunham Paint Company, Inc., et al., respondents.

An appeal decision from the Supreme Court of the State of New York Appellate Division on October 17, 2012 is important to all workers using paints. The trial was one in which the plaintiff, Walter Andrade, was suing T.C. Dunham Paint Company and others. The Plaintiff was injured in a fire caused by accidental ignition of the solvents in a paint sealer. The paint companies argued that 1) the Defendants had to use a solvent-based paint because they the best quality products and 2) that the fire was the Plaintiff's fault because he did not provide proper ventilation as the label directs.

THE APPEAL DECISION. In the first lawsuit, the Defendants prevailed. However, on appeal, the judges allowed into the case two experts whose testimony was excluded from the first trial. On the basis of their testimony, they overturned the decision. Here is part of the Judges' opinion.

> [The first expert, Arad Ben] Bassat, the owner of a floor-finishing business who has performed that type of work for more than 10 years, averred that water-based sealers had "improved dramatically over the past 10 years," and that, at least since 2003, these sealers have been "commonly used and commercially accepted" in the industry. According to Bassat, he used two enumerated water-based sealers, and, despite the indication of a two or two-to-three hour drying time on the labels of those products, it was his practical experience that those sealers generally dried in less than 20 minutes, which was the same drying time as the solvent-based sealers. Additionally, Bassat averred that, at least since 2003, both water-based and solvent-based sealers had a cost of approximately $20 per gallon, and that water-based solvents had a 20% larger coverage area, making them even more cost effective. According to Bassat, even if water-based sealers produced any raise in the grain of the wood to which it was applied, that effect was eliminated by "screening," which is a "fine light sanding which is done to even out the sealer coat." Significantly, Bassat averred that screening must be done whether a water-based or a solvent-based sealer is used. Finally, Bassat asserted that, in his experience, each product was equally useful at preventing the top or finish coat, which is applied to the wood after the sealer coat, from penetrating the wood's surface.
>
> In addition, the plaintiff's second expert, [Leonard] Wharton, rebutted the defendants' showing that the solvent-based sealer may be safely used when users heed the warnings and instructions. In that respect, Wharton averred that various conditions out of the users' control, such as the unavoidable existence of certain ignition sources and lack of wind currents, would frustrate a user's ability to use the product in accordance with the instructions. Further, Wharton explained why some of the instructions provided as to how to achieve adequate ventilation would be too complicated for an ordinary user. (Underline by editor)

THE PRECEDENT SET. This decision provides a precedence for the argument that water-based products may be roughly equivalent in quality and price to the solvent-based ones and it allows Plaintiffs claiming damages from use of solvent-based paints to raise two triable fact issues:

* Does the "utility of the product outweigh[s] the inherent danger," that is, was there a compelling reason to justify using a significantly more hazardous product?

* Are the manufacturer's label directions to provide "adequate ventilation" too complicated or difficult for users to actually provide in worksites which are not, or cannot, be vented adequately?

This increases the liability for users of solvent-based products. And the ventilation issue is especially relevant to painting in a residence or any location in which setting up an exhaust system sufficient to control solvent vapors would be highly complex, expensive or even impossible depending on the configuration of the floor plan and access to outside air.

ARE WATER-BASED PAINTS REALLY SAFER? This appeal did not consider that water-based paints aren't exactly safe either. Most contain a mixture of solvents usually totaling from 10 to 30 percent of the paint's volume. However, most solvent-based paint contain significantly more solvent than the water-based ones, often 50 percent and higher. The risk to users depends on both 1) the toxicity of the individual solvents and 2) the concentration of these solvents in the air during painting. Almost invariably, a risk assessment calculated using these factors will demonstrate that the water-based paints are less toxic to users.

The risk assessment will also show that the water-based paints are safer with respect to fire hazards. But all types of spray application, including airless or HVLP (high volume low pressure) methods, can pose fire, explosion and health hazards, whether solvent- or water-based paints are used.

SOLVENTS v. VOCs IN PAINTS. Determining the amount of solvent in water-based paints is difficult. Users often believe the total weight of VOCs (volatile organic compounds) listed on the label indicates the solvent content. But those VOCs are only those volatile compounds that react with sunlight to create smog.* Many toxic solvents such as acetone, methyl acetate, and 2-butoxyethanol** don't react with sunlight. These non-VOC solvents can be present in the paint without being included in the VOC total. Readers interested in calculating solvent content in order to assess the risks can email ACTS and ask for a data sheet called "Water-Based Latex Paints."

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* The actual definition in 40 CFR 51.100(s) is: "Volatile organic compounds (VOC) means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions." Immediately following the definition is a list of organic compounds that "have been determined to have negligible photochemical reactivity..." Highly toxic non-VOCs include perchloroethylene (the highly-toxic dry cleaning chemical), methylene chloride (the paint stripping chemical that is so toxic it has its own OSHA standard) and neurotoxic hexane. These would not be included in the VOC totals.

** 2-Butoxyethanol (aka ethylene glycol monobutyl ether or EGME) reacts with sunlight to some extent, but was delisted as a VOC by the EPA in response to a petition from the Ethylene Glycol Ethers Panel of the American Chemistry Council (formerly the Chemical Manufacturers Association). See 69 FR 60320-60325, November 29, 2004.

UNUSUAL FATAL ACCIDENT REINFORCES NEED FOR HARD HATS

SOURCES: OSHA, Jersey City building department probing tape measure death, Michaelangelo Conte, *The Jersey Journal*, November 14, updated November 16, 2014, http://www.oshatoday.com/news-digest-item/fed-osha-jersey-city-building-department-probing-tape-measure-death/?nl=5674 & NSC 2014: OSHA's Expanded Notification Requirement Will Create 'Teachable Moment,' Michaels Says, September 19, 2014 Josh Cable, *EHS Today*, http://ehstoday.com/safety/nsc-2014-osha-s-expanded-notification-requirement-will-create-teachable-moment-michaels-says

In downtown Jersey City and 50 feet above the ground in the steel frame of a highrise building under construction, a tape measure slipped off the belt of a worker. At between 10 and 15 feet above the ground the tape measure hit and ricocheted downward off some equipment and struck the head of a man delivering wall board to the site. He was pronounced dead on arrival at a local hospital.

The victim had a hard had in his truck but was not wearing it at the time of the accident. After the accident, a worker was seen putting up a sign on the fence indicating that hard hats were required on the construction site. OSHA is investigating the accident.

WHO IS RESPONSIBLE FOR HARD HAT ACCIDENTS? While the accident in Jersey City was unusual, being stuck by objects in construction areas is common. And determining who is at fault for these accidents is easy: **it is the employer's fault.**

For example, if the man who died in the New Jersey accident was an employee of the firm supplying the sheet rock, it is his employer who could be cited by OSHA. While this may not sound fair, it is the employer who has the obligation to train and enforce a hard hat safety policy to be followed by his/her workers even when they are out in the field.

Similarly, employers in theaters, schools or universities must have an enforcement policy and mechanism for ensuring that hard hats are worn when work is going on above head level, such as in stage rigging, on catwalks, scaffolds, under sculpture track cranes or around high ladders. Blaming the victim is not going to help. The way to mitigate the employer's fault is to document that a hard hat program is firmly in place, there is a enforcement policy with teeth in it and records show that workers rarely, if ever, violate this policy.

WHO SEZ? This was made particularly clear by OSHA Administrator, Dr. David Michaels, at the National Safety Council's 2014 Congress and Expo in San Diego, CA, last September. Referencing earlier keynote addresses that emphasized the importance of personal responsibility in workplace safety, Michaels noted that "the focus on personal responsibility A) isn't useful and B) isn't the law."

"The law says employers have the responsibility to provide a safe workplace," Michaels said. Referring specifically to employers who tell OSHA that their worker was injured or killed because he/she wasn't wearing fall protection or a hard hat, Michaels said, " ... blaming it on the worker isn't going to work. That's not going to prevent the next [accident] from occurring."

COMMENT: All properly run theaters, sculpture studios with overhead cranes, art galleries and other areas in which overhead work may be occurring need hard hat stations where both workers and visitors to the area will don hard hats before entering. A policy of enforcement is needed with significant penalties for violating this rule.

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