

Hazardous Chemicals at Home and at Work

Safety Currents – December 8, 1998

AIR FRESHENERS

Most air fresheners interfere with your ability to smell by coating your nasal passages with an oil film, or by releasing a nerve-deadening agent. Know toxic chemicals found in air fresheners:

Formaldehyde: Highly toxic, known carcinogen.

Phenol: When phenol touches your skin, it can cause it to swell, burn, peel and break out in hives. It can also cause cold sweats, convulsions, circulatory collapse, coma and even death.

AMMONIA

It is a very volatile chemical; it is very damaging to your eyes, respiratory tract and skin.

BLEACH

It is a strong corrosive. It will irritate or burn the skin, eyes, and respiratory tract. It may cause pulmonary edema or vomiting and coma if ingested. WARNING: Never mix bleach with ammonia, it may cause fumes (chlorine gas) which may be DEADLY.

DISHWASHER DETERGENTS

Most products contain chlorine in a dry form that is highly concentrated. It is the number one cause of child poisonings, according to poison control centers.

FURNITURE POLISH

Petroleum Distillates: Highly flammable, can cause skin and lung cancer.

Phenol: See Air Fresheners, Phenol.

Nitrobenzene: Easily absorbed through the skin, extremely toxic.

LAUNDRY ROOM PRODUCTS

Sodium or Calcium Hypochlorite: Highly corrosive, irritates or burns skin, eyes or respiratory tract

Linear Alkylate Sulfonate: Absorbed through the skin. Known liver damaging agent.

Sodium Tripolyphosphate: Irritates skin and mucous membranes, causes vomiting. Easily absorbed through the skin from clothes.

Not for Employees Only – Student Safety Training an Essential Part of the Education Experience

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Risk assessment has become a buzzword these days, but for good reason. When someone gets hurt – accidentally or not – he or she wants someone else to be held "responsible!" Responsible usually means financial compensation. So, it is not for altruistic reasons, but as a matter of dollars and cents that educational institutions are giving safety training to students as well as their employees.

Students, as you all know, are not considered "employees" unless they are actually working for the university. As employees, they should receive the same training as other employees, namely Hazard

Communication, and Emergency Preparedness, at a minimum.

Students who are not employees are still "residents" of our university and need some of the same information as our employees. Many students take classes or work on projects in laboratories where hazardous materials are used. They are also in shops with welders, saws, drills and grinders. They go out into the field where animals could carry Hanta virus or plague. They use spray paint, lacquers, dyes and paint thinner. They work with high voltage, lasers and radiation. Often these activities occur without supervision!

Because of the settings in which we place our students, it is time to rethink who they are and what our responsibilities are to them.

Liability vs. Learning:

Ultimately, students come to educational institutions to learn something. Health and safety issues should be part of the tools the university should provide to them. Here are some things to consider teaching:

- *Right to Know laws*
- *Hazard Communications*
- *Basic Regulations on employee health and safety*
- *What safety related questions they should ask prospective employers*
- *Workplace violence awareness*
- *Protection of the environment*

By taking the time for the proper training, you could possibly save the campus thousands of dollars in liability, as well as providing a valuable learning experience.

Laser Pointers: Useful Tools – Hazardous Toys

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Laser pointers are becoming more common all the time. They can even be found at the checkout counter in grocery stores. Priced as low as \$14.00, some can project a luminous spot over 1,200 yards away. The power output may be as much as five milliwatts, and some pointers may weigh as little as one ounce. The output power of these lasers is often excessive for their intended use as a classroom aid. Competition between manufacturers has driven the market to provide the brightest, highest-powered laser for use by the public. These laser pointers are equal to or more powerful than half of the inventoried lasers used in academics and research.

The Food and Drug Administration is responsible for regulating all laser products sold in the United States. Pointers must be labeled with the laser hazard symbol, the hazard classification, the maximum power output and the wavelength. The hazard classification of all lasers is required to be provided by the manufacturer in accordance with the Title 21 Code of Federal Regulations. Hazard classes range from class 1, posing the least hazard, to class 4, representing the greatest hazard. Most laser pointers are classified as "3B," indication that there is no hazard to the eye if collecting optics are not used to focus the beam and the exposure time to the eye is less than a quarter of a second. One characteristic of laser light is that the beam does not diverge or spread out significantly over a long distance. For a laser beam with an initial diameter of 2 millimeters, the entire beam can still enter the eye at a distance of over 20 feet from the source. The focusing power of the eye can then concentrate the beam as much as 100,000 times.

Since many laser pointers have sufficient power to cause eye injuries under certain circumstances, the FDA has issued a warning statement. FDA Lead Deputy Commissioner Michael Friedman M.D. states, "Although laser pointers are generally safe when appropriately used as a teaching aid...the light energy that laser pointers can aim into the eye can be more damaging than staring into the sun...These laser

pointers are not toys." This warning seems contrary to the marketing strategies employed by some laser pointer manufacturers. In fact, they appear to be marketed more as toys than anything else. "Amaze your friends; entertain your pets" are suggested uses by one manufacturer. Companies have engineered laser pointers into key chains, bullet casings and even ink pens. One apparent engineering flaw with laser pens is that the beam is emitted from the rear of the pen towards the user, making a potential eye injury much more likely. Pointers frequently come with matching holsters for quick access in the event their immediate use is required. Cute graphic patterns are options on some of the pointers. Images of skulls, dinosaurs and even weapon crosshairs can be projected from a laser pointer.

Two recent events were cited in the news regarding the inappropriate and illegal uses of laser pointers. A helicopter pilot in San Diego County was temporarily blinded after a laser beam from a pointer was directed into his eye from the ground. The suspect was apprehended and charged with shooting a laser at an aircraft. In Arizona earlier this year police jumped for cover after being targeted by a laser beam. The police officers presumed that a sniper was equipped with a laser-sighted weapon. A 20-year-old man who indicated he was "just playing around" was arrested and charged with three counts of aggravated assault on a police officer. Some legal issues regarding the use of laser pointers and laser sighting devices are detailed in the California Penal Code. For example, the willful misuse of a laser pointer can be considered a misdemeanor or a felony. Directing a laser pointer at another person may constitute assault.

Preventing Latex Allergy

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Latex allergy reports are becoming more common among workers for several reasons:

1. Workers are relying increasingly on disposable latex gloves to prevent the transmission of the AIDS virus, hepatitis B and C viruses, and other potentially infectious agents (Bloodborne Pathogen Standard, 8 CCR §5193).
2. Latex gloves are provided by employers as required by the Occupational Health and Safety Act of 1993.
3. Changes in production or manufacturing procedures to meet the increased demand for latex gloves may produce varied concentrations of extractable latex proteins.
4. Physicians are more familiar with latex allergy and have improved methods for diagnosis.

Who Is At Risk?

Workers with ongoing latex exposure are at risk for developing latex allergy. They include health care providers, law enforcement personnel, food service workers, custodial personnel and those employed in factories where latex products are manufactured or used. Additionally, persons who have multiple allergic conditions are at increased risk for developing latex allergy. Latex allergy is associated with allergies to certain foods, especially avocado, potato, banana, tomato, chestnut, kiwi fruit, and papaya.

Types of Reactions to Latex

Three types of allergic reactions typically occur in persons using latex products:

Irritant contact dermatitis is the most common reaction and can include development of dry, itchy, irritated patches where the skin comes in contact with latex. Irritant contact dermatitis is not a true allergy.

Allergic contact dermatitis (delayed hypersensitivity) results from exposure to chemicals added to latex during harvesting, processing or manufacturing. Sometimes powdered latex gloves cause skin reactions similar to those caused by poison ivy. The rash usually shows up 24 to 48 hours after contact and may cause oozing sores that can be spread by touch to areas that did not come in contact with latex.

Latex allergy (immediate hypersensitivity) usually is a more serious reaction to latex. Certain proteins in the latex

may cause sensitization. Reactions may begin within a few minutes of exposure but can occur hours later and produce a variety of symptoms. Mild reactions involve skin redness, hives, or itching. More severe reactions include respiratory symptoms such as runny nose, sneezing, scratchy throat and asthma. Severe or life threatening reactions are rarely the first sign of latex allergy but can occur as a result of continuous exposure. The amount of exposure needed to produce sensitization or latex allergy is unknown. Limiting exposure to latex proteins has been reported to decrease sensitization and reduce symptoms.

The proteins responsible for latex allergies have been shown to fasten to the powder that is used in some latex gloves causing more latex protein to contact the skin. When the gloves are removed or changed, the latex protein/powder particles are released into the air where they can be inhaled and contact body membranes. Wearing powdered latex gloves during episodes of hand dermatitis may increase skin exposure and the risk of developing latex allergy.

Preventing Latex Allergy

Workers and students with ongoing exposure to natural rubber latex should take the following steps to minimize the risk of developing latex allergy:

- ***Use non-latex gloves for activities such as food preparation and routing custodial/maintenance tasks that are unlikely to involve contact with infectious materials.***
- ***Wear powder-free, reduced protein content latex gloves when you need the appropriate barrier protection for bloodborne pathogens.***
- ***Do not use oil-based creams or lotions when wearing latex gloves as they may cause glove deterioration.***
- ***Clean work areas contaminated with latex dust frequently (upholstery, carpets, HVAC ducts and plenums).***
- ***Learn to recognize the signs and symptoms of latex allergy.***
- ***Minimize and avoid contact with latex products.***
- ***If you develop latex allergy reactions, contact your supervisor immediately and consult a physician experienced in treating latex allergy. Discontinue use immediately.***
- ***Wear a medic-alert bracelet to inform others of your condition.***

Products Containing Latex

A wide variety of products contain latex and most people who encounter these products through general use have not health problems. Workers and students who routinely use latex products should attempt to reduce unnecessary contact. Following are examples of products that may contain latex:

Medical Equipment: blood pressure cuffs, stethoscopes, disposable gloves, endotracheal tubes, electrode pads, oral and nasal airways, IV tubing, rubber stoppers, dental dams, and catheters.

Personnel Protective Equipment (PPE): gloves, masks, respirators, goggles, aprons.

Office Supplies: erasers and rubber bands.

Household Objects: tires, bicycle and motorcycle handgrips, shoe soles, condoms, baby bottle nipples, hot water bottles, balloons.

In the workplace, latex allergy can result in potentially serious health problems for workers and for students. You can minimize or prevent these health problems by being alert to the signs and symptoms and by following recommendations for preventing latex allergy.