



THE UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER ENVIRONMENTAL HEALTH AND SAFETY OFFICE

SAF • T • GRAM

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NEW REQUIREMENTS!

SAFE NEEDLE DEVICES



As mandated by the Needlestick Safety and Prevention Act signed into law November 6, 2000 by President Clinton, OSHA has revised its bloodborne pathogen standard to mandate consideration of safer needle devices. The Centers for Disease Control and Prevention have estimated that selecting safer medical devices could prevent 62 to 88 percent of sharps injuries in hospital settings.

Safe needle devices include:

- needle-less systems
- syringes with a sliding sheath that shields the attached needle after use
- needles that retract into a syringe after use
- shielded or retracting catheters used to access the bloodstream for intravenous administration of medication or fluids
- intravenous medication delivery systems that administer medication or fluids through a catheter port or connector site using a needle that is housed in a protective covering

The updated standard also requires employers to maintain a log of injuries from contaminated sharps including information on the type and brand of device involved in the incident, the department or work area where the exposure incident occurred, and an explanation of how the incident occurred. OSHA also reinforced the need to maintain the privacy of employees who have suffered these injuries.

Human Resources has developed a new Supervisor's Report of an Occupational Illness or Injury and Employee's Report of Injury on the Job form to assist with compliance with this updated regulation. These forms now ask, "If a device or equipment (e.g., needle, scalpel, etc.) was involved in the injury, list type and brand (includes percutaneous

injury)". This section should be completed for all needlesticks or injuries with contaminated sharps. Copies of all injury report forms may be obtained from http://admin-scb.ouhsc.edu/person/Work_Comp_foms.rtf for Oklahoma City employees, and for Tulsa employees, from Human Resources at Schusterman Center 1C110 or their designated coordinator.

Changes You Need to Be Aware Of

- **ALL** needlesticks and other injuries with contaminated sharps should be reported on OUHSC injury report forms.
- If the injury involves a medical device, including syringes/needles, the type and brand **MUST** be reported on the injury report form.
- Whenever you believe a safe needle device is available for the task you perform regularly, and you believe that device will prevent needlesticks, let your supervisor know and ask that the incorporation of such a device be considered.
- If your department has or will incorporate safe needle devices, let the EHSO know in writing so that we may incorporate that information into the OUHSC Bloodborne Pathogen Exposure Control Plan.

As always, employees experiencing a needlestick should seek medical attention immediately.

Helpful links are found on the EHSO web site at <http://w3.ouhsc.edu/ehso/links.htm#blood>.

NATIONAL POISON PREVENTION WEEK

Source: <http://www.cpsc.gov/cpsc/pub/prerel/prhtm01/01105.html>

Each year, unintentional poisonings from medicines and household chemicals kill about 30 children and prompt more than 1 million calls to the nation's poison control centers. The 40th observance of National Poison Prevention Week, held March 18-24, 2001, aims to help prevent those childhood poisonings by reminding people to check their homes.

Here are basic poison prevention tips from the Consumer Product Safety Commission:

- ☠ Use child-resistant packaging properly by closing the container securely after each use.
- ☠ Keep all chemicals and medicines locked up and out of sight.
- ☠ Call the poison control center immediately in case of poisoning (in Oklahoma City the number is 271-5454, statewide call 1-800-764-7661). Keep on hand a bottle of ipecac syrup but use it only if the poison control center instructs you to induce vomiting.
- ☠ When products are in use, never let young children out of your sight, even if you must take them along when answering the phone or doorbell.

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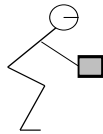
Poison (continued from page 1)

- ☠ Keep items in original containers.
- ☠ Leave the original labels on all products, and read the label before using.
- ☠ Do not put decorative lamps and candles that contain lamp oil where children can reach them. Lamp oil can be very toxic if ingested by young children.
- ☠ Always leave the light on when giving or taking medicine. Check the dosage every time.
- ☠ Avoid taking medicine in front of children. Refer to medicine as "medicine," not "candy."
- ☠ Clean out the medicine cabinet periodically and safely dispose of unneeded and outdated medicines.

National Poison Prevention Week is organized each year by the Poison Prevention Week Council, a coalition of national organizations working to prevent poisonings. To get a free packet of poison prevention publications, write to "Poison Prevention Packet," CPSC, Washington, DC 20207.

STATUS OF ERGONOMICS IN OKLAHOMA

While Congress voted to overturn the OSHA ergonomic regulations March 7-8, 2001, our regulatory agency, the Oklahoma Department of Labor (ODOL) has stated that they are "in the process of developing ergonomics guidelines for public agencies to follow, but ODOL does not intend to approach ergonomics in a regulatory stance at this time." ODOL would rather work at preventing ergonomic injuries than waiting for employees to get hurt and forcing regulatory compliance.



OUIHSC has in place an ergonomic program with guidelines for computer workstations, laboratory pipetting, and lifting procedures. This program is currently being expanded to include other potential ergonomic hazards. Check out the following links for more information.

- http://w3.ouhsc.edu/ehso/Powerpoint/ERGO_files/v3_document.htm
- <http://w3.ouhsc.edu/ehso/links.htm#ergo>
- <http://www.oklaosf.state.ok.us/~okdol/peohs/PEOSH%20ergo%20standard.pdf>

ARE ANTIBACTERIAL SOAPS THE ANSWER?

Source: <http://www.cdc.gov/ncidod/eid/vol7no2/larson.htm>



While handwashing is one of the best ways to prevent all sorts of infections, must we use antibacterial soaps as the companies who sell them seem to be telling us? According to recent guidelines issued by the Centers for Disease Control and Prevention (CDC), hospital staff should generally use antibacterial soap when washing hands, but for most other persons, washing properly with plain soap and warm water should be sufficient to reduce the bacteria and viruses that have contaminated the skin surface.

Antibacterial soap should be generally avoided for two reasons. First, the antibacterial agents commonly used may cause skin irritation. Second, there is a growing concern that regular handwashing with antibacterial soaps can lead to the development of resistant bacteria.

Hands may be washed using regular soap before eating, smoking or

preparing foods at home and after going to the restroom, handling animals, or gardening.

Times when it would be appropriate to use an antibacterial soap are when caring for a person at high risk of infection (newborns, the elderly, or immunocompromised); close physical contact with infected persons; infection with an organism that may be easily transmitted by direct contact (diarrhea, colds, flu, skin infections); or work in areas such as food preparation, child care, nursing homes, prisons, child-care centers and preschools.

Proper handwashing is important. Simply rinsing hands under water for a few seconds is not adequate, and several studies have shown that most members of the public wash too infrequently or don't wash long enough. For proper handwashing, follow these simple steps:

- Use plain soap and warm running water (not too hot).
- Wet hands thoroughly and lather up with soap.
- Rub hands vigorously for at least 10-15 seconds, and include the back of hands, wrists, between fingers and under the fingernails.
- Rinse hands under running water.
- To minimize chapping, pat hands dry on paper towels or a clean towel rather than rubbing, or use an electric hand dryer.
- Turn off the tap with the used paper towel, if you wish.
- Use skin lotion if desired, to prevent dry skin.

If soap is not available, washing vigorously with water alone will remove surface contaminants. When water is not available, an alternative is use of alcohol hand sanitizers, which is recommended for persons who need immediate protection after touching a contaminated surface or before and after contact with someone at high risk for infection. These products offer a rapid method of hand decontamination, but long-term use may tend to dry skin, so moderation is advised. Even after using these products, you should properly wash your hands with soap and water as soon as feasible.

ANOTHER ANGLE ON BLEACH SHELF LIFE

A letter from the Clorox company regarding the shelf life of Regular Clorox Liquid Bleach states, "We recommend storing our bleach at room temperatures. It can be stored for about 6 months at temperatures between 50 and 70 degrees Fahrenheit. Temperatures much higher than 70 degrees Fahrenheit could cause the bleach to lose its effectiveness more rapidly. However, if you require 5.25% sodium hypochlorite, you should change your supply every 3 months. When mixing bleach with water, the solution is only good to be used for sanitary purposes for 24 hours. After 24 hours, the solution does not have the properties, according to the E.P.A., to be used as a disinfectant."



The manufacturer's production code can be interpreted to determine the manufacturing date as follows:

code:	MD28174	A70003
plant:	MD2	A7
year:	8 = 1998	0 = 2000
Julian date:	174th day of year	003rd day of year"

Remember, the CDC has also recommended that a **freshly prepared** solution of bleach be used in a 1:10 to a 1:100 dilution to clean blood spills, as decomposition of hypochlorite solutions leads to a loss of available chlorine and hence to a loss of antimicrobial activity.

PROPER USE OF AUTOCLAVES

An autoclave will only work if you use it properly and safely. There are potential physical and biological hazards associated with improper use, as well as the potential for contamination of the research you are performing and damage of the equipment.

Proper Loading Procedures

- Clean the drain strainer before loading the autoclave.
- Place all items going into the autoclave in a heat resistant plastic tub that sits on a shelf or rack and can catch any spills. Never place glassware or bags directly on the bottom or floor of the autoclave.
- **Do not** overfill the tubs. Nothing should be hanging over the edges or tall enough to touch the top or sides of the autoclave. Over-loading may lead to the center of the load not getting sterilized properly.
- Never autoclave a **sealed** container of liquids. Before loading containers of liquids into the autoclave, the caps must be loosened to avoid having the bottles shatter during pressurization or when the container is opened.
- Add a quarter- to a half-inch of water to a tub of empty bottles so the bottles will heat more evenly.
- For solid waste, do not pack the bags too full; bags packed to capacity with biohazardous waste will not be properly decontaminated.
- Add one cup of water to each bag of solid waste and keep the bags **open**. Polypropylene biohazard bags are impervious to steam.
- **Do not** load non-autoclavable plastic materials into the autoclave. They will melt and cause damage to the autoclave.
- Place tubs in the center of the autoclave. It is important to allow the steam to circulate freely throughout the chamber.
- Make sure the door of the autoclave is properly closed before starting the cycle.
- Use the proper cycle. **Do not** use a gravity cycle for liquid nor a liquid cycle for solids. Use of the wrong cycle can cause improper sterilization or spillage.
- Be sure you know what you are doing if you want to adjust the temperature or run time. Increasing the temperature can melt trays or containers. Decreasing the temperature or run time can impair the sterilization procedure. Most pre-set programs can accomplish what you need without adjusting the time or temperature.
- **Do not** override an autoclave's built-in safety control features under any circumstance.
- **Do not** abort a run just because you are in a hurry and want the cycle to finish faster. Aborting of cycles can cause the sterilizer to jam if it happens often, requiring a service call to get the autoclave running again.
- Wait a full five to ten minutes before removing items after the completion of a run. If the autoclave load contains dry glassware wait five minutes and ten minutes if the load contains liquids.
- Wear heat-resistant gloves when first opening the door after a run. When removing items from the autoclave, wear a rubber apron in

addition to rubber sleeve protectors, heat resistant mitts and a face shield.

- Let glassware cool for 15 minutes before touching it with ungloved hands.
- Let liquid loads stand in an out-of-the-way place for a full hour before touching with ungloved hands. With liquid loads be alert for a bottle still bubbling.
- Close the autoclave door after each use.

Spore Strip Test for Effectiveness

Autoclaves should be routinely tested (once per week) for sterilization effectiveness. The most common way of doing this is with spore strips (usually *Bacillus stearotherophilus*). The strips are to be placed in the **center** of a typical load and then removed and incubated after the cycle is completed.

Here is a trick for safely removing the strip from a biohazard bag. Place a fresh spore strip inside a glass screw cap tube. Tie a string around the neck of the tube. Bury the tube in the center of the load as you build it. Thread the string out of the top of the bag. After the cycle is completed, pull on the string to retrieve the spore strip for incubation.

If growth is detected on the spore strips, first try increasing the run time or ensuring the waste is properly loaded. If growth still occurs with run times of 45 minutes or more, the autoclave may need maintenance or repair.

EPA VS. COLLEGES AND UNIVERSITIES

Source: http://www.epa.gov/reg3ecej/compliance_assistance/presrelease/gw-6-2-00.htm

<http://es.epa.gov/oeca/ore/enfalert/vol3num7.html>



EPA is stepping up it's inspections of colleges and universities and continues to expect compliance with environmental regulations. Recent noteworthy inspections are as follows:

The **University of Hawaii** was assessed a fine of **\$1.8 million** after an EPA inspection team found dangerous chemicals abandoned for years in the basement of the Honolulu campus's main chemistry building, plus other discards elsewhere.

Brown University was cited for 15 violations of federal environmental laws with proposed fines of up to **\$500,000**. Almost all the violations occurred at various laboratories and waste storage facilities.

Boston University reached a settlement with EPA by agreeing to pay a **\$253,000** penalty, invest **\$500,000** on environmental projects and conduct a comprehensive environmental compliance audit.

The **University of New Hampshire** agreed to pay a **\$49,000** penalty and conduct environmental improvements worth about **\$180,000** to settle claims that the university violated federal and state hazardous waste management laws.

Yale paid a **\$69,570** fine after being cited for mishandling and mislabeling hazardous chemicals. The school also agreed to invest **\$279,000** in environmental programs on campus and in New Haven.

The OUHSC *Laboratory Safety Manual* provides all the information you need to comply with regulatory requirements for the collection, storage, labeling, and disposal of hazardous waste. If you have any questions or concerns, contact the EHSO at 405/271-3000, or Tulsa 918/660-3878.

BLAST AT SLU RESEARCH LAB TIED TO POOR STORAGE

Source: STL Post-Dispatch posted Friday, October 20, 2000

Careless storage of a highly volatile chemical is believed to be the cause of an explosion in a freezer in a research laboratory in St. Louis University's medical school complex. No one was injured in the explosion.

Detectives with the St. Louis Police Bombing and Arson Squad said the explosion was caused by the ignition of vapors from 2-methylbutane, a highly flammable chemical that was stored in the freezer. It's believed that the freezer was not designed to be explosion-proof and the vapors were ignited by an ignition source, possibly the motor that runs the freezer's compressor.

Don't let this happen to your lab. Make sure the refrigerators and freezers are designed for the type of chemicals you are storing in them. Additional information is available in the OUHSC Laboratory Safety Manual.

CPSC TESTING FINDS NO ASBESTOS FIBERS IN CHILDREN'S CHALK

Source: <http://www.cpsc.gov/cpsc/ub/prerel/prhtml01/01002.html>

The U.S. Consumer Product Safety Commission announced that it has found no asbestos or "transitional" fibers that may appear like asbestos in children's chalk. CPSC tested the chalk after reports that chalk and children's crayons may contain asbestos. In June, 2000, CPSC released test results that found a trace amount of asbestos and larger amounts of "transitional" fibers in some crayons made by Crayola and Prang. Although CPSC found that the risk of exposure to these fibers was extremely low, as an extra precaution, CPSC asked manufacturers to reformulate their crayons to eliminate the fibers. The manufacturers quickly agreed to reformulate within one year. Because CPSC tests concluded that there was no cause for concern, parents and teachers can continue to use the crayons they have and can continue to purchase crayons currently for sale.



CPSC tested chalk from five manufacturers that represent the majority of the industry. The chalk included blackboard chalk and jumbo-size sidewalk chalk made by Crayola, Prang, Pentech, Curiosity Kits, and Sketch & Scribble. No asbestos fibers were found, and no "transitional" fibers were found.

CPSC will continue to monitor crayons, chalk and other children's products to ensure they are safe.

ENVIRONMENTAL TRIVIA: POISON MAY HAVE DOOMED BEETHOVEN

Source: <http://www.sjsu.edu/depts/beethoven/hair/hairtestpr.html>

An analysis of a lock of Ludwig van Beethoven's hair suggests lead poisoning could explain certain ailments suffered by the erratic genius, his strange behavior, his death, maybe even his deafness.



The four-year analysis of the hair - apparently snipped after the composer's death at age 56 in 1827 - has turned up a concentration of lead 100 times the levels commonly found in people today, according to researchers at the Health Research Institute in suburban Chicago, where the hair was tested. That means it is all but certain that the composer suffered from lead poisoning, also known as plumbism, the researchers said.

Scientists initially were searching for mercury, a common treatment for syphilis in Beethoven's day. The absence of mercury supports the recent consensus of scholars who believe Beethoven did not have syphilis. In rare cases, lead poisoning causes deafness, but scientists remain unsure if that was what caused Beethoven's hearing loss.

Lead poisoning may also explain what some described as dramatic mood swings on Beethoven's part.

The Health Research Institute scientists said that Beethoven's lead exposure came as an adult but that the source of the lead is unclear, though one possibility is the mineral water he swam in and drank during his stays at spas.

SURPLUS CHEMICALS

The EHSO has a number of unused surplus chemicals in great condition available free of charge (for University uses only). A short list is provided here. For the entire list, check out <http://ehso.ouhsc.edu/ehso/surplus/surplus.htm>. Contact Trent Brown at 405/271-3000 or trenton-brown@ouhsc.edu.

2-butanone	citric acid
dimethylformamide	ethyl acetate
formaldehyde solution	glycerol
hydrochloric acid	isobutanol
methanol	methylene chloride
ninhydrin, monohydrate	1-pentanol
petroleum ether	potassium chromate
potassium hydroxide	2-propanol
scintiverse	sodium azide
sodium hydroxide	sodium thiosulfate
toluene	tween (R) 20

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