



Lab Chatter

Table of contents:

Page 1.....Safety Spotlight: See something, say something...for safety's sake
 Page 2.....Labeling Secondary Containers in the Laboratory
 Page 3.....Things That Should Never Go Down the Drain
 Page 4.....Never Go Down the Drain continued
 Page 5..... Holiday Health and Safety Tips from the CDC
 Page 6..... Holiday Tips continued
 Page 7..... OSHA Fact Sheet: Laboratory Biosafety Cabinets
 Page 8..... Laboratory Biosafety Cabinets continued
 Page 9..... UNE Chemical Sharing Program and Contact us



Safety Spotlight



See something, say something...for safety's sake

By Jessica Tyre

I think we can all admit that we have been in a position where we have seen someone we work with doing something that is against protocol at least once in our careers. When we witness someone performing a task in an unsafe manner it puts us in a difficult position. It is often challenging to confront a co-worker about something they are doing wrong, but when it comes to lab safety you could be preventing a very serious injury or illness. In the lab environment it is imperative that you speak up if you see something being done that could harm that individual or other individuals working in the lab area or nearby lab areas. Just imagine if you could have prevented a serious injury but you didn't because you were afraid to speak up. Your fellow lab staff will appreciate your concern. They may not even realize what they are doing is unsafe until you bring it up (which could be an excellent teaching moment for a less experienced lab worker). If you are not comfortable confronting an individual about concerning behaviors, you can also reach out to EHS to assist you in correcting unsafe lab practices discreetly.

So please, if you see someone putting themselves at risk, say something.

Labeling Secondary Containers in the Laboratory

By Peter Nagle

During lab safety inspections, EHS looks at the labeling of secondary chemical containers. A secondary container is any container other than the original container in which the chemical was delivered. The OSHA Laboratory Standard addresses labeling requirements of incoming hazardous chemicals and SDS (Safety Data Sheet) management:

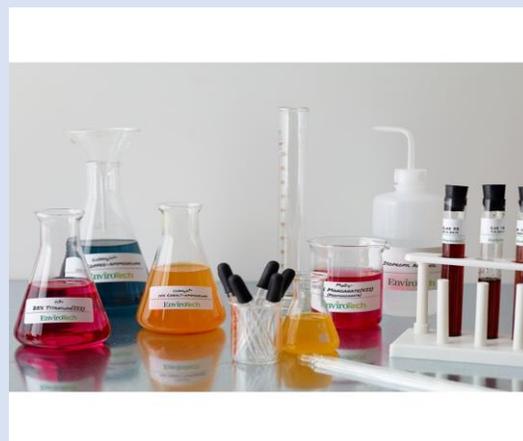
- 29 CFR 1910.1450(h)(1)(i)- Labels of incoming chemicals are not de-faced
- 29 CFR 1910.1450(h)(1)(ii)- All SDSs of incoming chemicals must be maintained and made readily accessible to all laboratory employees.

Unlike the Hazard Communication Standard, OSHA's Laboratory Standard does not specifically address the labeling of secondary containers in the laboratory. The Laboratory Standard allows laboratories flexibility in tailoring their written Chemical Hygiene Plan (CHP) and Standard Operating Procedures (SOP) to establish labeling requirements for secondary containers. OSHA standard 29 CFR 1910.1450(f)(4) requires the employer to train employees regarding the physical and health hazards of chemicals in the work area, the measures employees can take to protect themselves from these hazards, and the applicable details of the employer's CHP.

The UNE Chemical Hygiene Plan establishes the labeling requirements for secondary chemical containers. Below is an excerpt from UNE's Chemical Hygiene Plan.

"Departments must ensure that laboratory containers of chemicals are labeled where required. Laboratory containers, including bottles, flasks, sample vials, etc., must be marked, labeled, or coded in all cases. (If codes or markings other than chemical names are used, a code key or legend must be available in the workplace where it may be found quickly and easily by emergency responders or other interested parties.) Labels should bear a date of receipt and should identify the owner of the material".

EHS recognizes that some secondary containers are too small to write out chemical names entirely and that some chemical names are very long themselves such as ethylenediaminetetraacetic acid (abbreviated as EDTA). In these cases it is permissible to use abbreviations or chemical formulas on labels as long as there is a key or legend available nearby. The reason for this is that many emergency responders are not familiar with chemical formulas or common abbreviations used in laboratories. Our labs may also have students working in them that are not familiar with formulas or abbreviations. It is for employee protection and effective communication that any abbreviation or chemical formula used for labeling in the laboratory must have their corresponding chemical name readily available nearby.





Things That Should Never Go Down the Drain

By Ronnie Souza

A laboratory sink drain can seem like a convenient way to get rid of unwanted liquid waste. The simple act of pouring unwanted liquids down the drain or discarding waste in the trash is engrained into our everyday life, both at home and at work. Yet this act done in a laboratory setting can be deemed illegal and consequences may result in injury, adverse impact on the environment, and severe violations and penalties.

Have you ever stopped to think about where all that water goes once it leaves your sight? While it may seem safe – that water has to be treated eventually, right? – in fact a lot of what goes down your drains will eventually end up back in natural waterways and maybe even back at your own faucet someday. So to help keep your water clean (and your water treatment facilities running smoothly), here are four things you should never put down the drain.

1. Hazardous Chemicals like paint, cleaning products, oil, and solvents

Water treatment facilities can remove some contaminants, but they are not designed to remove hazardous chemicals, these still end up being dumped into our rivers, lakes, and oceans. Phosphates from detergents, chlorine from bleach, and the toxins in pesticides will all wreak havoc on fragile ecosystems once they leave your local sewage treatment plant. You would not throw paint, solvents, pesticides or other chemicals out in your yard, so why would you put them down the drain?

Examples of chemicals that cannot go down the drain:

- Halogenated hydrocarbons (chlorofluorocarbons, chlorocarbons, etc.)
- Nitro compounds (nitroethane, nitrobenzene, etc.)
- Mercaptans, also known as thiols (methyl mercaptan/methanethiol, etc.)
- Flammables immiscible in water (hexane, toluene, etc.)
- Explosives (azides, fulminates, etc.)
- Water-soluble polymers (sodium polyacrylate, guar gum, casein, etc.)
- Water-reactive materials (lithium, sodium, and other alkali metals)
- Chemicals with a foul odor
- Toxic chemicals (carcinogens, mutagens, teratogens; indicated on SDS)
- Substances with a boiling point lower than 50 oC
- Insoluble solids, including hair, ash, sand, metal, or glass
- Oil or grease
- Any mixture that includes any of the above substances

What to do instead:

Contact EHS #2488 for information and training if you are unsure of how to manage your chemical wastes.

2. Medications

We have all been stuck with expired or leftover medicine at some point. In fact, about a third of the medications sold in the U.S. are never taken. Nevertheless, you will want to avoid flushing those unused pills or liquids; much like other chemicals, medications you dump down the toilet will find their way into natural waterways. Studies have found everything from antibiotics, ibuprofen, and antidepressants in drinking water supplies and fish throughout the U.S... EPA regulations lists some medications as acutely toxic waste. Medications with acute toxicity classification must be managed and disposed of as hazardous waste.

What to do instead:

Contact EHS #2488 for information and training on how to manage your medical wastes generated at work. In your home environment, instead of flushing used pills, look in your area for a medicine take-back program. Many local organizations work with pharmacies, law enforcement, and hospitals to collect and responsibly dispose of everything from painkillers to blood pressure pills.

3. Grease, fats, and oils

It can be tempting to wash all that oil from the frying pan down the drain with the dishwasher, but greases, oils, and fats from cooking will quickly cause all sorts of problems. When they solidify, they can clog pipes and wreck not just your plumbing but also sewage treatment plants. Even worse, if it makes it out to the environment it can disrupt the natural balance of waterways (think of how oil floats on top of water in your sink) and interfere with plants, fish, and other wildlife.

What to do instead:

It is possible to compost fats and oils, but you will want to be very careful if you are dumping them into a home compost bin. The smell can attract animals and too much grease can block access to oxygen, resulting in smelly and poor-quality compost. The best option is actually to recycle it: dirty kitchen grease can easily be turned into eco-friendly biofuel. Look in your area for companies or city programs that accept kitchen waste for recycling, and then just stick a jar by your stove to collect cooking oil and drop it off when it is full. Another option is to soak them up with paper towels and dispose of them in the trash.

4. Paper towels, cotton balls, pre-moistened wipes, scrub pads, etc.

While toilet paper is made to break down in a sewer or septic tank, other paper products are designed to stand up to that sort of abuse. The same sturdiness that makes a paper towel perfect for cleaning up spills means that it is likely to clog up pipes and increase the chance of sewer backups and overflows. Therefore, even though products like paper towels, baby wipes, and cotton swabs are biodegradable you will want to keep them out of your sewage system, even if they claim to be “flushable.”

What to do instead:

Paper products make a great source of carbon for home compost piles, which means you will be keeping that waste out of landfills, too. Better yet, switch to cloth towels and other reusable products to cut out that trash altogether.



Holiday Health and Safety Tips

1 Wash your hands often.

Keeping hands clean is one of the most important steps you can take to avoid getting sick and spreading germs to others. Wash your hands with soap and clean running water for at least 20 seconds. If soap and clean water are not available, use an alcohol-based product.



2 Stay warm.

Cold temperatures can cause serious health problems, especially in infants and older adults. Stay dry, and dress warmly in several layers of loose-fitting, tightly woven clothing. Check on children, the elderly and pets.



3 Manage stress.

The holidays don't need to take a toll on your health. Keep a check on over-commitment and over-spending. Balance work, home, and play. Get support from family and friends. Keep a relaxed and positive outlook. Get enough sleep.



4 Travel safely.

Whether you're traveling across town or around the world, help ensure your trip is safe. Don't drink and drive, and don't let someone else drink and drive. Wear a seat belt every time you drive or ride in a motor vehicle. Always buckle your child in the car using a child safety seat, booster seat, or seat belt according to his/her height, weight, and age. Get vaccinations if traveling out of the country.



The holidays are a time to celebrate, give thanks, and reflect. They are also a time to pay special attention to your health. Give the gift of health and safety to yourself and others by following these holiday tips.



5 Be smoke-free.

Avoid smoking and breathing other people's smoke. If you smoke, quit today! Call 1-800-QUIT-NOW, or talk to your health care provider for help.



6 Get check-ups and vaccinations.

Exams and screenings can help find problems early or before they start. Vaccinations help prevent diseases and save lives. Schedule a visit with your health care provider for a yearly exam. Ask what vaccinations and tests you should get based on your age, lifestyle, travel plans, medical history, and family health history.



7 Watch the kids.

Children are at high risk for injuries. Keep a watchful eye on your kids. Keep potentially dangerous toys, food, drinks, household items, choking hazards (like coins and hard candy), and other objects out of kids' reach. Learn how to provide early treatment for children who are choking. Develop and reinforce rules about acceptable and safe behaviors for all electronic media.



8 Prevent injuries.

Injuries from falls and fireworks often occur around the holidays. Use step stools instead of furniture when hanging decorations. Leave the fireworks to the professionals.

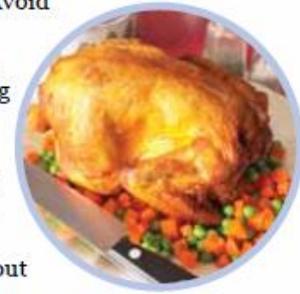
Most residential fires occur during the winter months. Keep candles away from children, pets, walkways, trees, and curtains. Never leave fireplaces, stoves, or candles unattended. Don't use generators, grills, or other gasoline- or charcoal-burning devices



inside your home or garage. Install a smoke detector and carbon monoxide detector in your home. Test and change the batteries regularly.

9 Handle and prepare food safely.

As you prepare holiday meals, keep you and your family safe from food-related illness. Wash hands and surfaces often. Avoid cross-contamination by keeping raw meat, poultry, seafood, and eggs (including their juices) away from ready-to-eat foods and eating surfaces. Cook foods to the proper temperature. Refrigerate promptly. Do not leave perishable foods out for more than two hours.



10 Eat healthy, and be active.

With balance and moderation, you can enjoy the holidays the healthy way. Choose more vegetables and fruit. Select just one or two of your favorites from the host of tempting foods. Find fun ways to stay active, such as dancing to your favorite holiday music. Be active for at least 2½ hours a week. Help kids and teens be active for at least 1 hour a day.



To learn more, including the holiday song *The 12 Ways to Health*, visit www.cdc.gov/family/holiday



Centers for Disease Control and Prevention
Office of Women's Health

CS228814

Laboratory Safety Biosafety Cabinets (BSCs)

Properly maintained Biosafety Cabinets (BSCs), when used in conjunction with good microbiological techniques, provide an effective containment system for safe manipulation of moderate- and high-risk infectious agents [Biosafety Level 2 (BSL-2) and 3 (BSL-3) agents]. BSCs protect laboratory workers and the immediate lab environment from infectious aerosols generated within the cabinet. BSCs must be certified when installed, whenever they are moved and at least annually [29 CFR 1910.1030(e)(2)(iii)(B)].

Employers should ensure that a risk assessment has been completed and approved for the work to be conducted and to identify the class and type of BSC needed for the operation or procedure.

Employers should train workers to do the following before using the BSC

- Prepare a written checklist of materials necessary for a particular activity and place only necessary materials in the BSC before beginning work.
- Turn off any overhead room germicidal ultraviolet light (UV) and any BSC UV lights.
- Confirm that the BSC is currently certified for use.
- Confirm that the BSC is operating properly prior to beginning work by checking airflow gauges.
- Adjust the stool height so that armpits are level with the bottom of the view screen or sash.

Employers should train workers to do the following when working inside the BSC

- Store extra supplies outside the BSC. Only materials and equipment needed for the immediate work should be placed in the BSC.
- Do not use equipment or store supplies inside the BSC that may disrupt the protective BSC airflow pattern.
- If large equipment must be placed inside the BSC, place it as far back in the BSC as practical.
- Do not work with open containers of infectious or hazardous materials in front of the large equipment.
- Move arms in and out of the cabinet slowly, perpendicular to the face opening, to limit disruption of the air curtain.

- Wear appropriate personal protective equipment. Lab coats must be buttoned and back-closing laboratory gowns tied, if utilized, for greater protection. Gloves should be pulled over the wrists of lab coats, not worn inside the sleeve.
- Manipulation of materials inside the cabinet should be delayed for 1 minute after placing hands/arms inside the cabinet to allow the air to stabilize and to “air sweep” arms.
- Do not rest arms on front grille (unless the BSC is specifically equipped with features that permit this action) because doing so allows room air to flow directly into the work area rather than being drawn through the front grille. Instead, work with both arms raised slightly.
- Do not block the front grille with papers or other materials.
- Perform all operations on the work surface and at least 4 inches from the front grille.
- Allow cabinet blowers to operate for at least 3 to 5 minutes before beginning work to allow the BSC to “purge” particulates.
- If necessary, use plastic-backed absorbent toweling on the work surface (but not on the front grille) to aid in cleanup and spill containment.
- Make sure that active work flows from the clean to contaminated area across the work surface.
- To minimize frequent in/out arm movement and maintain the air barrier, do not tape autoclavable biohazard collection bags to the out-

- side of the BSC; upright pipette collection containers should not be used in the BSC and/or placed on the floor outside the BSC. (Instead, horizontal discard trays containing an appropriate chemical disinfectant should be used).
- Use the aseptic techniques below to reduce splatter and aerosol generation:
 - Opened bottles or tubes should not be held in a vertical position.
 - Hold the lid above open sterile surfaces to minimize direct impact of downward air.
 - Open flames should not be used because they create turbulence that disrupts the pattern of air supplied to the work surface.
 - If absolutely necessary to do so, touch plate microburners that provide a flame on demand or electric furnaces are available and should be placed in the back third of the BSC. All flames must be turned off before disinfectants are used.
 - Aspirator bottles or suction flasks should be connected to an overflow collection plastic flask containing an appropriate disinfectant, and to an in-line HEPA filter and located in the back corner of the BSC.
 - If spilled liquid enters through the front or rear grilles, close the drain valves and pour decontaminating solution into the drain pans. Use the appropriate decontamination solution and contact time for the pathogens used in the BSC.
 - Carefully handle the paper towels used for cleanup, as any materials present in the catch basin that are caught in the exhaust plenum may require BSC decontamination and the cabinet body being opened to remove the object.
 - Immediately following the manipulation of infectious agents in the BSC, decontaminate surfaces and the BSC contents with the appropriate solution and contact time necessary for the infectious agents being used. Do not allow any potential contamination on the interior surfaces to remain until the end of the work shift as this will reduce the efficiency of decontamination procedures.
 - When work is finished, surface decontaminate all items that are to be brought out of the BSC prior to their removal.
 - After removal of these items, the interior walls and the interior surface of the window should be wiped with 70 percent ethanol or other appropriate disinfectant.
 - At the end of the workday, surface decontaminate the BSC with 70 percent ethanol or dilute bleach.

Additional Information

To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or information, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call us toll-free at (800) 321-OSHA (6742).

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; the teletypewriter (TTY) number is (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



OSHA FS-3460 8/2011
DSG

UNE Chemical Sharing Program

The UNE Chemical Sharing Program is a great way to reduce hazardous waste, reduce costs for your department, and have a positive environmental impact on campus. If you have any commonly used lab chemicals that you are thinking of disposing, please contact EHS so they can be listed in the next issues of EHS Lab Chatter as available for the UNE Chemical Sharing Program.

No chemicals currently available.



Happy Holidays!

Enjoy your winter break
and stay safe!



Contact us



Ronnie Souza,

Director of EHS

UNE Extension:

2488

Cell:

207-391-3491

Email:

rsouza@une.edu



Peter Nagle,

EHS Specialist

UNE Extension:

2791

Cell:

207-468-1786

Email:

pnagle@une.edu



Jessica Tyre,

EHS Specialist

UNE Extension:

2046

Cell:

603-244-0081

Email:

jtyre@une.edu



Alethea Cariddi,

Sustainability

Coordinator

UNE Extension:

2507

Email:

acariddi@une.edu

www.une.edu/campus/ehs