"Safety Comes First"

Case Western Reserve University

Environmental Health and Safety

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In this issue:

Radiation Clearance

Radiation contamination is not obvious. Humans cannot see, smell, or feel it. Specialized instruments are necessary to detect it. Staff in laboratories that use radiation are required to attend training about the safe usage and handling of radioactive materials. However, accidents can happen and that is why the Clearance Protocol that Environmental Health and Safety (EHS) follows includes a check for radiation.

Before any piece of laboratory equipment can be moved or disposed a clearance from EHS must be obtained. Ultimately, the Principal Investigator (PI) is responsible for obtaining the clearance, but they are most often requested by lab managers.

To start the process, please fill out a clearance form found on the EHS website: https://case.edu/ehs/sites/case.edu.ehs/files/2021-07/safetyclearance_0.pdf

We need to know what item the clearance is for and where it is located, as well as the lab's contact information.

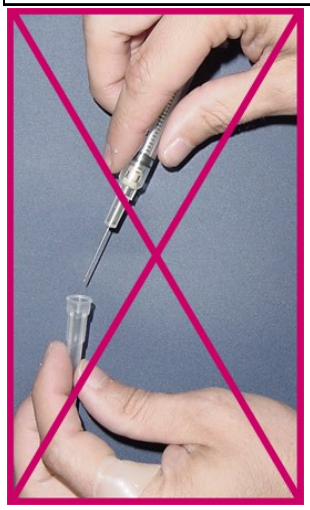
Radiation Safety will check the item for strong beta radiation, such as P32, with a Geiger counter. We will then do a wipe test to look for weaker beta radiation such as tritium. These wipes need to be run on a liquid scintillation counter.

We will only sign off on the clearance form after we receive negative results from both the Geiger counter and the liquid scintillation counter. Then, Chemical Safety will check the item for any chemical or biological contamination.

Radiation Safety will check items from all labs even those that do not use radiation to ensure the safety of our contractors, custodial staff, movers, and staff. We do this out of an abundance of caution.

Radiation Safety Office, CWRU EHS,

Bloodborne Pathogens and Needlestick Prevention



"Engineering controls are the primary means of eliminating or minimizing employee exposure ..."

What are bloodborne pathogens?

Bloodborne pathogens are infectious microorganisms in human blood that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV). Needlesticks and other sharps-related injuries may expose workers to bloodborne pathogens. Workers in many occupations, including first responders, housekeeping personnel in some industries, nurses and other healthcare personnel, all may be at risk for exposure to bloodborne pathogens.

What can be done to control exposure to bloodborne pathogens?

In order to reduce or eliminate the hazards of occupational exposure to bloodborne pathogens, an employer must implement an exposure control plan for the worksite with details on employee protection measures. The plan must also describe how an employer will use engineering and work practice controls, personal protective clothing and equipment, employee training, medical surveillance, hepatitis B vaccinations, and other provisions as required by OSHA's Bloodborne Pathogens Standard (29 CFR 1910.1030). Engineering controls are the primary means of eliminating or minimizing employee exposure and include the use of safer medical devices, such as needleless devices, shielded needle devices, and plastic capillary tubes.

General Guidance

Engineering controls are the primary means of eliminating or minimizing employee exposure and include the use of safer medical devices, such as needleless devices, shielded needle devices, and plastic capillary tubes.

Best practices for preventing sharps and needlestick injuries include:

- Plan safe handling and disposal before any procedure.
- Use safe and effective needle alternatives when available.
- Use needles (sharp) with engineered sharps injury protection (SESIPs).
- Always activate the device's safety features.
- Do not pass used sharps between workers.
- Do not recap, shear, or break contaminated needles.
- Immediately dispose of contaminated needles in in properly secured, puncture-resistant, closable, leak-proof, labeled sharps containers.
- Complete Bloodborne Pathogens training.

Source: OSHA.gov

The GHS Gas Cylinder Pictogram

The chemicals you work with may be hazardous, and each can pose unique healthy and safety risks. For that reason, you should know the proper way to handle and store *each* chemical that you work with. The chemical's safety data sheet (SDS) is an important source of detailed information, including hazards, composition, safe handling practices, and emergency control measures. Make sure you read the SDS of any chemical thoroughly before working with it.

There can also be labels directly on the container a chemical is stored in. You should always read the written precautionary statements on each chemical container label. A container label may also have one or more pictograms. Pictograms are symbolic representations to help you quickly identify a chemical's hazards. A pictogram is easy to spot; it is a black image on a white background that is framed by a red diamond. There are nine different pictograms, each representing a different hazard. In this issue, we're going to discuss the gas cylinder pictogram.

Hazards

The gas cylinder pictogram is a symbol with an image of a black silhouette of a gas cylinder on a white background framed by a red diamond. If you see this pictogram on a chemical label affixed to a container, it means that the chemical is a gas under pressure. The contents of a gas cylinder may a compressed gas, liquified gas, refrigerated liquified gas, or dissolved gas. The gas can be rapidly released if the cylinder is damaged, causing the cylinder to take off like an out-of-control rocket. In a recent incident at a fencing contractor, a worker was killed when the gas cylinder he was moving exploded. Deliberately released gases can also cause problems if the release is poorly controlled, causing vessels, hoses, or pipes to rupture.

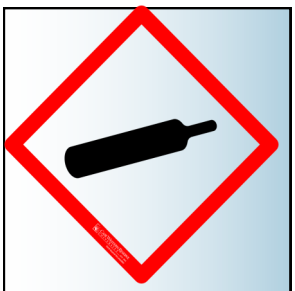
Compressed gases can present other hazards—they may be flammable, reactive, toxic, or corrosive. If the cylinder contains a refrigerated liquified gas, you are at risk of a cryogenic burn or frostbite injury. In addition, leaking gases can displace air and reduce oxygen levels, which can lead to loss of consciousness or suffocation.

Handling and Storage

Improper handling can damage cylinders, resulting in accidental releases. You should always protect the cylinder from physical damage, including falling objects or bumps from other cylinders. Ensure the protective caps are on and the cylinders and are always secured, even during transport. Cylinders can be secured to racks, walls, or approved hand trucks by a strong chain or strap. Always use approved equipment to move compressed gas cylinders—don't drag or roll cylinders horizontally.

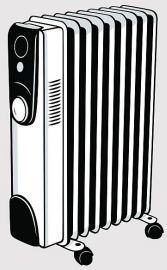
Store gas cylinders in well-ventilated areas. Keep cylinders away from direct sunlight, excessive heat, and ignition sources. Compressed gas cylinders should also be secured during storage to prevent them from falling or being knocked over. There may be additional storage requirements, including separation distances and maximum storage quantities—always consult the SDS for more information.

Source: Safety BLR



"Compressed gases can present other hazards... flammable, reactive, toxic, or corrosive..."

Fire Prevention: Space Heaters



"Make sure the heater is placed at least 3 feet away from anything that can burn..."

Portable electric space heaters provide an inexpensive and effective way to keep your office or work space warm during the colder months. If used improperly, however, space heaters can pose a significant risk of fire.

Fortunately, there are things you can do to prevent space heater fires.

Always read and follow the manufacturer's instructions for the heater you are using. In general, stick to the following guidelines when using a portable space heater to make sure you stay warm—and safe.

Make sure your space heater has a label showing it has been certified by a nationally recognized testing laboratory.

- Before each use, inspect the heater for any signs of damage, such as a frayed cord or broken plug. If you see any signs of damage, do not use the heater.
- Plug the heater directly into a wall outlet, not into a power strip or an extension cord, which can overheat and cause a fire.
- Place the heater on a flat, level surface. Never place heaters on top of tables, filing cabinets, or other furniture.
- Place the heater in a spot with low foot traffic where it will not pose a tripping hazard. Make sure the heater is placed at least 3 feet away from anything that can burn, such as rugs and office paper.
- Never leave your space heater unattended when it is on. Turn it off before you leave the room.
- Before leaving work each day, unplug and safely store the heater.

CWRU recognizes that individuals have different levels of comfort associated with temperature. The use of electric heaters as a temporary measure is permitted, if the following guidelines are followed:

- Space heaters are not allowed in any of CWRU's Residence Halls.
- Electric space heaters is recognized as a temporary measure, Facilities Management should be contacted if there is inadequate heat in any work area. Space heaters should not be the first course of action, please contact Customer Service at 216.368.2580 to see if there are safer alternatives for heating the space.
- Where permitted, owners/users of space heaters are responsible for their proper use.

(Continued on page 5)

Fire Prevention: Space Heaters, Cont.

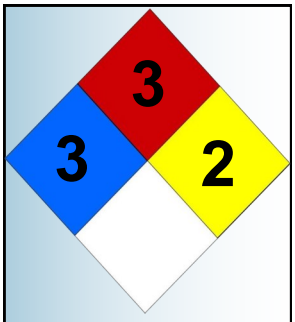
- Space heaters must be electrically powered, (fuel powered or propane space heaters are only permissible in construction sites, upon approval of the EHS Department).
- Space heaters must not take more than 110 volts of electricity to operate.
- Any space heater used must be currently UL (Underwriters Laboratory) or FM Global approved.
- Approved space heaters must be fan driven. Space heaters with heated coils are not permitted.
- Space heaters must have a thermostat that shuts off the unit once a certain temperature is reached.
- Space heaters must have tip-over protection. If the space heater is knocked over for whatever reason, the unit will shut off automatically.
- Space heaters must be plugged directly into a wall receptacle never into a surge protector or extension cord.
- Space heaters must always be turned off and also be unplugged, when the area is not occupied. When unplugging, pull by the plug and not the cord!
- Space heaters should be checked periodically by the user to ensure there are no frayed cords or missing guards. Any repairs to space heaters must be done by a qualified person.
- Do not operate space heaters with a damaged electrical cord.
- Do not run space heater's electrical cord under carpeting or throw rugs.
- Space heaters shall not be used in bathrooms, laundry areas or other areas where water is present.
- Space heaters shall not be used in areas where flammable materials are stored or used.
- Space heaters should be located in plain sight and never block an exit or be a trip hazard.
- Space heaters must be kept at least three feet away from any combustible material (paper, coats, bookshelves, trash cans, etc.). Nothing should ever be placed on top for any reason.
- Other types of heating elements (hot plates, toasters, ovens, etc.) should never be used for heating.

CWRU's EHS Department reserves the right to inspect and declare a space heater to be unapproved.

Source: Safety BLR and CWRU

"Space heaters with heated coils are not permitted (at Case)."

Chemical Spotlight: 1,2-dichloroethene

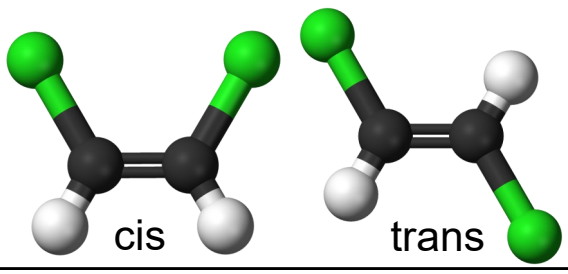


"...incompatible with strong oxidizers, strong alkalis, potassium hydroxide, and copper."

1,2-dichloroethene, or 1,2-dichloroethylene, is a clear liquid with a sharp, unpleasant odor. Even at low concentrations in the air (17 parts per million), it is possible to smell this chemical. 1,2-dichloroethene is highly flammable, evaporates readily, and is corrosive. 1,2-dichloroethene is most commonly used in the production of other chemicals but also has uses as a solvent, in the extraction of rubber, and in the decaffeination of coffee. Inhalation of 1,2-dichloroethene can lead to nausea or drowsiness. At high concentrations, it can depress the central nervous system (CNS) and can be lethal. Those whose work involves the synthesis of 1,2-dichloroethene or other industrial uses are at the highest risk for exposure. However, people who don't work directly with this chemical may be exposed to 1,2-dichloroethene by breathing it around hazardous waste sites or leaking landfills or by drinking contaminated tap water.

1,2-dichloroethene is incompatible with strong oxidizers, strong alkalis, potassium hydroxide, and copper. Due to its flammability, you should take precautionary measures against static discharge, use nonsparking tools, and keep the chemical away from heat, flames, hot surfaces, and other sources of ignition. 1,2-dichloroethene may decompose into vinyl chloride, another toxic chemical.

It may be required to contain and dispose of 1,2-dichloroethene as a hazardous waste. Contact your state environmental department or the EPA regional office to inquire about proper disposal.



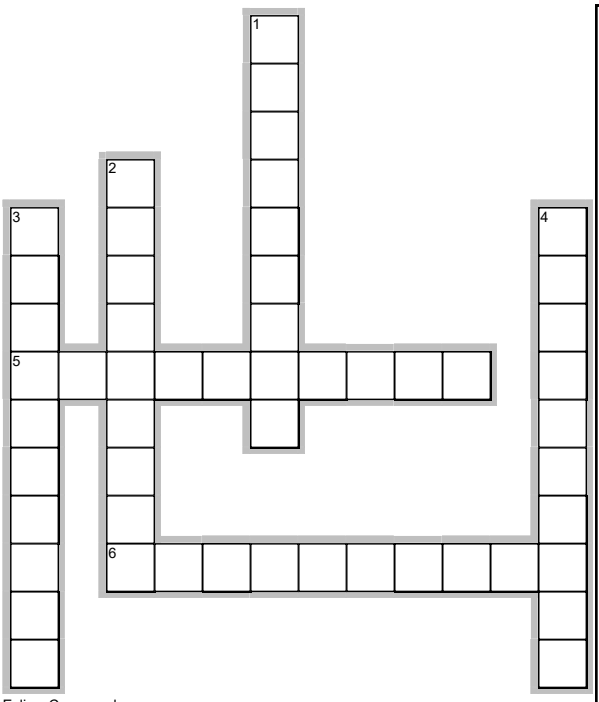
Fun Page

Across

5. Space heaters must have tip-over _____.
6. SESIP is an acronym for "sharp with _____ sharps injury protection."

Down

1. Before any piece of laboratory equipment can be moved or disposed a _____ from EHS must be obtained.
2. 1,2-dichloroethene is highly flammable, evaporates readily, and is _____.
3. Always use approved equipment to move _____ gas cylinders
4. Never leave your space heater _____ when it is on.

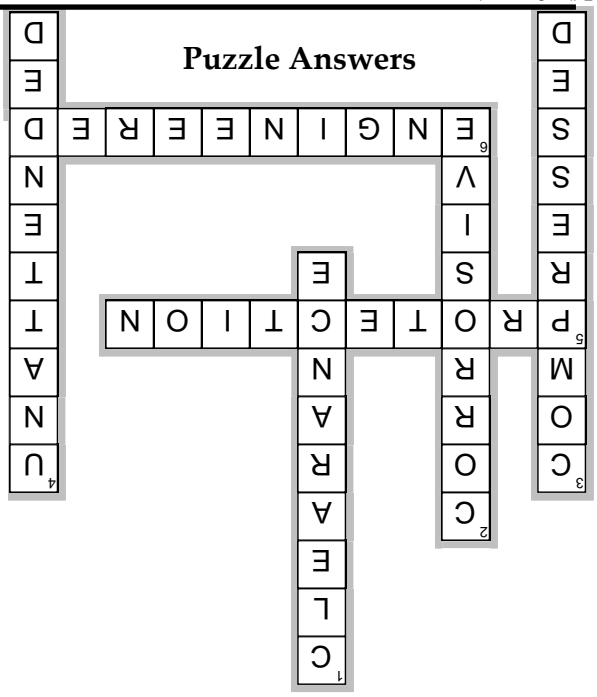


FUN PAGE

Funny Corner

"I can't read the label in this light. Pass me that blowtorch, will you?"

Puzzle Answers



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Safety Quotes

Safety is a cheap and effective insurance policy.

~Author Unknown

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