Russell Research Center's

Safety & Health Newsletter

We are working to keep you better informed and protected!

Volume 1, February 2015

In this issue:

On The Horizon…

March 5th
All Hand's Meeting 10:00 AM in the RRC Auditorium.
Dr. D. Brennan will provide discussions on the RRC PADI and reorganizing RRC. Please plan on attending.

March 24th or 31st
Women's History Program in RRC Auditorium

April 22
Earth Day
Do something that will make a difference for our planet!

Visit Our Safety Website For:

- RRC SOP
- Active Shooter Response Plan
- Safety Newsletter Library
- SHEM Manual 160.0M
- Autoclave Log Sheet
- Emergency Procedures
- Spill Response Plan
- Hazard Assessment Forms

www.ars.usda.gov/SAA/RRC/Safety

visit our website

Job Hazard Analyses Documentation

Job Hazard Analyses (JHAs) are required by the Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.132(d)(1) & (2). The supervisor is responsible for assessing the workplace under his or her supervision to determine if hazards are present, or are likely to be present, which necessitate the use of controls in order to eliminate or mitigate the recognized hazards. The supervisor may delegate this process to another to be completed, but cannot reassign or disclaim the responsibility. It may, at times, be easier for an employee that performs a given task to complete the hazard assessment and then review the assessment with the supervisor to ensure that all hazards are appropriately addressed.

A JHA is vital for the development of proper work practices and procedures. They can also be very useful in developing an outline of appropriate training activities for employees that will perform those activities. Without written documentation of a JHA a supervisor has no documented evidence that shows a regulatory body that the hazards have been recognized and appropriate controls have been put into place.

Controls typically fall into one of three classes:

1. Engineering Controls
   - Elimination by redesigning the facility, equipment, or process to remove hazard; or substituting process, equipment, materials or other factor for a less hazardous one.
   - Enclosure of the hazard using a fume hood, biosafety cabinet or enclosures for noisy equipment.
   - Isolation of the hazard with interlocks, machine guards, blast shields, welding curtains, or other means.
   - Removal or redirection of the hazard such as with local and exhaust ventilation.
2. Administrative Controls
   - Written operating procedures, work permits, and safe work practices;
   - Exposure time limitations (used most commonly to control temperature extremes and ergonomic hazards);
   - Monitoring the use of highly hazardous materials;
   - Alarms, signs, and warnings;
   - Buddy system; and
   - Training
3. Personal Protective Equipment (i.e., respirators, hearing protection, protective clothing, safety glasses, and hardhats) is appropriate for use as a control method when:
   - Engineering controls are not feasible or do not totally eliminate the hazard;
   - While engineering controls are being developed;
   - When safe work practices do not provide sufficient additional protection; and
   - During emergencies when engineering controls may not be feasible.

While PPE may be the easiest and cheapest protection available for a given task, studies show that they provide the least amount of protection over time. Protecting your personnel should be your number one priority. Good science is safe science!

Are You Using Your Biosafety Cabinet Correctly?

Biosafety cabinets are specifically designed and constructed to provide users with protection from exposure to the agents being manipulated and to provide clean filtered air to the materials within the cabinet workspace. Normally, these cabinets are not designed for work with hazardous chemicals. This is because the majority of biosafety cabinets exhaust the contaminated air through HEPA filters and then back into the lab. Hazardous gases, fumes, and vapors will not be collected within the filters and instead will vented into the lab where they can present a health risk. While biosafety cabinets are one of the most effective engineering controls for minimizing the risk of laboratory acquired infections, if they are not use properly they will only provide minimal protection. The National Academy of Sciences makes the following recommendations in *Prudent Practices in the Laboratory*.

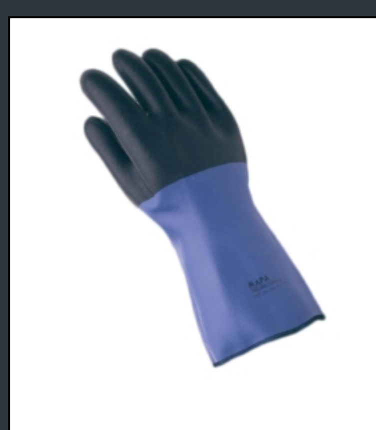
- Turn the cabinet on at least 10-15 minutes prior to use, if the cabinet is not left running. Verify the cabinet is operating properly and has been certified within the past year.
- Disinfect the work surface with 70% alcohol or other suitable disinfectant.
- Place items into the cabinet so that they can be worked with efficiently without unnecessary disruption of the airflow, working with materials from the clean to the dirty side.
- Wear appropriate PPE. At a minimum, this will include a buttoned laboratory coat and gloves.
- Adjust the working height of the stool or stand so that the worker's face is above the front opening and behind the sash.
- Delay manipulation of materials for approximately 1 minute after placing the hands/arms inside the cabinet.
- Do not disturb the airflow by covering any of the grill or slots with materials.
- Work at a moderate pace to prevent airflow disruption that occurs with rapid movements.
- Wipe the bottom and sides of the cabinet surfaces with disinfectant when work is completed.

A free digital copy of this manual can be found at the following website:
http://ucanr.org/sites/ucehs/files/133892.pdf

In The Spot light!

Thermal Gloves

Individuals working with very hot or very cold materials should wear insulated gloves. It is important that these glove be impervious to liquids and loose enough to be removed easily. Hot liquids can pass through non-impervious thermal gloves and cause burns. Non-impervious thermal gloves may also freeze on the hand and intensify any exposure to a cryogenic fluid or liquefied gas.



Gloves like the Mapa® Temp-Tec pictured here made from neoprene rubber and an integral cotton jersey thermal liner are designed to withstand brief contact with hot materials up to 480°F and cold contact to -100°F

Non-Ionizing Radiation Hazards

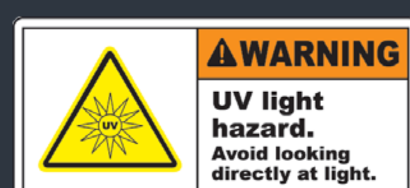
Non-Ionizing radiation (NIR) is characterized by photons with energies less than 12.4 electron volts and is considered to have insufficient energy to ionize matter. NIR energy waves are composed of oscillating electric and magnetic fields traveling at the speed of light. The non-ionizing radiation spectrum includes ultraviolet (UV), visible light, infrared (IR), microwave (MW), radio frequency (RF), and extremely low frequency (ELF). Lasers are considered NIR because they commonly operate in the UV, visible, and IR frequencies.

Out of the NIR hazards, the one that requires our primary attention at our location is UV light. UV light is presently in use in the germicidal lamps used in most biological safety cabinets, Sunlamps used in plant growth chambers, welding arcs, and even in the sunlight to which grounds keepers and greenhouse workers are exposed.

The target organs for UV radiation are the skin, eyes, and immune system. Long-term exposure or high doses of UV radiation may lead to the development of Erythema or sunburn, photosensitivity, aging, or cancer. Ocular effects may be photokeratoconjunctivitis, cataracts, and retinal effects.

It is very important to make sure that UV germicidal lamps are off when you are in the lab!

UV light warning labels must be affixed to all UV light sources.



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