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1 Biosafety Cabinet UV Light Pitfalls

Many labs are accustomed to using a germicidal ultraviolet light during biosafety cabinet decontamination. A UV light destroys harmful microorganisms by attacking their DNA. However, biosafety cabinet UV lights have limitations that all users should know about before relying on them for protection against contamination. Here are three of the most common pitfalls.

1. Failing to Surface Decontaminate

You should not rely on a biosafety cabinet UV light as the sole decontaminating agent. Surface disinfection should be performed before and after every cabinet use. There are several reasons for this.

First, UV light can only destroy microorganisms that it can reach, and whether a microorganism is exposed to UV light depends on several factors. For example, some biosafety cabinets are made with welds or seams where microorganisms can hide from UV light. Even the flat surfaces inside a biosafety cabinet are not perfectly flat at the microscopic level. This unevenness creates "microshadows" where microor-

ganisms can stay safely tucked away. Additionally, microorgan-



The CDC and NIH agree that UV lights are not recommended or required in Biological Safety Cabinets.

isms can hide behind dust or other particulates. And finally, any dust or dirt that has accumulated on the bulb itself will block UV light, and the bulb should be cleaned regularly

2. Failing to Change the Bulb Regularly

The bulb of a biosafety cabinet UV light loses effectiveness over time and needs to be replaced regularly. When the intensity drops below a certain level, the percentage of microorganisms it is able to destroy drops too, leaving research products and personnel vulnerable to contamination

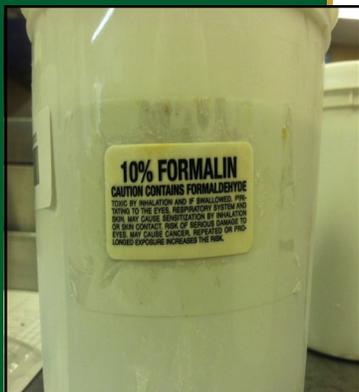
It's not always easy to tell when it's time to change the bulb. The light stays on long after its germicidal effectiveness has ceased. So how long does a biosafety cabinet UV light last? Manufacturers have developed lamp life ratings for their products, which vary depending on the type of UV light. Following these ratings will help you determine when it's time to change the bulb.

3. Failing to Protect Yourself From UV Radiation

UV light not only kills microorganisms in the biosafety cabinet, but it also destroys living cells in your body. In particular, it can cause painful damage to both your skin and your eyes, even after its intensity drops below the effective level. What's more, the surface inside a biosafety cabinet can reflect UV light into the lab, putting personnel at risk. The safest way to use a UV light is to close the cabinet sash and leave the lab.

¹Source: The Baker Company Blog, 9/8/12

Dealing with Formalin Spills and Splashes



Due to its widespread use, spills and splashes of formalin must be anticipated

Formalin is widely used in our labs to fix and preserve biological tissue specimens. Specifically, we use 10% neutral buffered formalin (which actually contains about 3.7-4% formaldehyde.) Formaldehyde poses serious health hazards, both from short and long term exposure, therefore it is important that you understand its hazards and how to work with it safely. Employees should always consult the Safety Data Sheet (SDS) before working with a chemical.

Because it is widely used, it is important that we know how to respond when spills and splashes of formalin occur.

The hazards of formaldehyde (formalin):

Eye contact: Solutions splashed into the eye can cause serious damage to the cornea. In the event of splash into the eyes, wash the eyes immediately with large amounts of water and seek

prompt medical attention.

Skin contact: Formaldehyde is a skin irritant. Frequent and prolonged contact with it may cause hypersensitivity leading to contact dermatitis. If splashed onto the skin, immediately flush with water. In the event that clothing is saturated with formaldehyde, remove contaminated clothing immediately and flush with water.

Inhalation: At low levels, formaldehyde can cause irritation of the upper respiratory tract. At higher levels, it will result in coughing, chest tightness and difficulty breathing. Very high levels can cause severe respiratory tract injury and even death. If you have difficulty breathing because of formaldehyde, leave the area immediately and promptly report it to your supervisor.

Formalin Spills

For minor spills (< 1 gallon) of 10% neutral buffered formalin, trained staff can clean up following FCG label instructions:

tions :

- Wear nitrile gloves, safety glasses and a lab coat,
- Sprinkle FCG formaldehyde control granules starting around the perimeter of the liquid and work inward..FCG



converts the formaldehyde into a solid, inert mass which can be disposed of as

a non-hazardous waste. It takes 10-15 minutes to convert the liquid to a solid. Vapors are neutralized in around 7-10 minutes.

Large spills (>1 gallon) will require response by trained Emergency Response personnel equipped with respiratory protection. In case of such an event, leave the area immediately and do not allow others to re-enter. Call 911 to report the spill. Have the SDS ready for when the responders arrive.

Congrats to NCVDLS employees on becoming First Aid, CPR and AED certified



Congratulations!!!

Special congratulations and thanks to the following NCVDLS employees for becoming certification in First Aid, CPR & AED:

Griffin Lab:

- Carrie Rowell

Northwestern Lab

- Marcella Galyean

Rollins Lab:

- Chad Cecil
- Phyllis Howard

- Connie Howen
- Paul Hutter
- Chad Menard
- Tom Miller
- Josh Sheperd

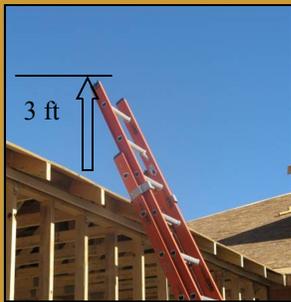
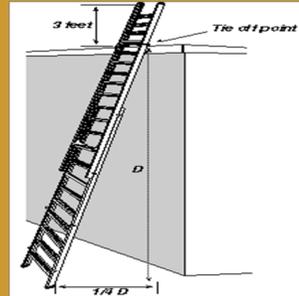
Western Lab

- Lia Barth

Are You Using Ladders Safely?



Extension ladders should be used at a 4 to 1 pitch. For every 4 feet in height, the bottom of the ladder should be 1 foot away from the structure.



When accessing another level, the ladder should extend at least 3ft. above the landing to provide a hand hold for getting on and off the ladder.



NEVER stand on the top step of the ladder!



NEVER climb the back side of a folding ladder unless it is designed for it!



Don't use a stepladder as a straight ladder!



Always maintain 3 points of contact with the ladder.



In the 3-point system, a person climbing a ladder should always have 3 points of contact.



NEVER overreach.

Ladders are useful tools. Nearly everyone uses them to reach out-of-the-way objects on pantry shelves or closets, to wash windows, and to clean gutters or hang holiday lights. Ladders also are potentially dangerous, causing more than 164,000 emergency room-treated injuries in 2010, according to the U.S. Consumer Product Safety Commission.



Questions or comments?
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The North Carolina Veterinary Diagnostic System (NCVDLS), part of the North Carolina Veterinary Division, was established in

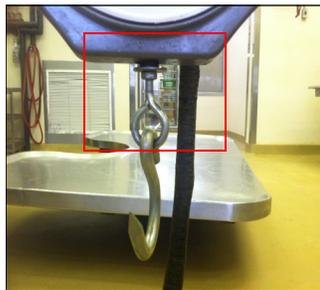
1947 by the North Carolina Department of Agriculture. The mission of NCVDLS is to provide veterinarians, the animal industry and the citizens of North Carolina with accurate and timely laboratory support services in order to diagnose, conduct surveillance, and assist in responding to and preventing animal disease.

NCVDLS Near-Misses: Lessons We Can Learn From A SUDDEN FALL IN THE NECROPSY ROOM...

A near-miss is simply a close call. It means that a serious accident almost occurred. Near-miss reporting helps us identify and address unsafe acts or conditions before someone gets hurt. All near-misses must be promptly reported.

A near-miss was reported in the Rollins Mammalian Necropsy Room: *“When lifting an alpaca with the hanging scale (0-250 lbs) the alpaca fell to the floor”*. Upon investigation, it was found that the threaded eye hook which attaches to the base of the scale had become unscrewed and suddenly fell out while lifting the alpaca. Fortunately, nobody was hurt when the animal fell.

As a result of this near-miss, a weekly inspection of the attachment has been instituted to be sure it remains tightly secured.



A large animal being weighed suddenly fell to the floor when the threaded eye hook shown at left became unscrewed and detached from the base of the scale.

Report Near Misses

