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GUARDIAN

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Also in this issue...

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Summer Thunderstorms

When a thunderstorm threatens, one of the first things you should try to do is to get inside a building or a hard-top automobile. If you can hear thunder, you are close enough to the storm to be struck by lightning. Florida has twice as many lightning casualties (deaths and injuries combined) as any other state. Lightning reports reach their peak in July. There are a few simple things that you can do so that you don't become a statistic of a lightning strike.

- Move indoors if possible.
- Stay away from windows and doors.
- Avoid using the telephone except for emergencies.
- Unplug electrical appliances.
- Do not take a bath or shower during the storm, because lightning can travel through water pipes.

If you are caught outside…

- Do not stand underneath an isolated tree, telephone pole or tall object.
- Avoid rising above the surrounding landscape.
- If caught among trees such as in a forest, seek shelter in a low area under some thicker growth.
- In areas that are open, go to a low place, such as trench, ravine or valley.
- Get off and away from open water, lawn equipment or vehicles, such as motorcycles, bikes, golf carts, etc.
- Put down golf clubs and take off golf shoes (that have metal spikes).
- Stay away from wire fences, clotheslines, metal pipes, and rails.

Did you know? -- lightning may strike 10 miles from the parent cloud. Precautions should be taken even though the thunderstorm is not directly overhead. If you feel your skin tingle or your hair stand on end, squat low to the ground on the balls of your feet. Place your hands on your knees with your head between them. Do not lie flat on the ground. Make yourself the smallest target possible, and minimize your contact with the ground.

According to the Disaster Center every year around the world over 1000 people are estimated to die from lightning. Taking a few simple precautions can save your life.

Laboratory Ventilation Equipment

A self-contained ventilation system is one of the most common and important safety devices in the laboratory. If installed and used correctly, it will provide substantial protection to the researcher and environment in laboratories that use hazardous substances. The following information can help determine which ventilation equipment is right for your laboratory.

Laboratory Fume Hoods

A fume hood is a ventilation enclosure where harmful or toxic fumes and vapors can be handled safely. The purpose of the hood is to capture, contain and remove contaminants to prevent them from escaping into the laboratory. The hood operator should not inhale or come in contact with these contaminants while working in the laboratory.

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Hoods

Airflow into the hood is achieved by an exhaust blower which pulls air from the lab into and through the hood and exhaust system. A baffle, air foil, and other aerodynamic design components control the pattern of air moving in and through the hood. The contaminated air is diluted with room air and exhausted through the duct system to the outdoor environment.

Unique features may be added to the hood and exhaust system to accommodate special procedures done in the lab such as using perchloric acid or radioisotopes. These hood features include specialized design, materials, and filters to maximize safety in the laboratory and to minimize releases to the environment.

Biological Safety Cabinets

There are other laboratory ventilation systems that offer protection from potentially hazardous substances. These containment devices may look like fume hoods but these have different modes of operation and different uses. Biological safety cabinets (BSCs) are used in laboratories that use microorganisms. BSCs are designed to provide personnel, environmental and product protection when appropriate practices and procedures are followed. BSC use high efficiency particulate air (HEPA) filters in their exhaust and/or supply systems. HEPA filters remove particles and microorganisms (such as bacteria and viruses) equal to or greater than 0.3 um (micron). Three types of BSCs have been developed to address various research and clinical needs.

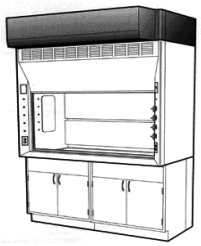
CLASS I - The Class I BSC provides personnel and environmental protection, but no product protection. The air movement is similar to a fume hood but has a HEPA filter in the exhaust system to protect the environment. Personnel protection is provided by inward airflow across the work surface at a minimum velocity of 75 (lfpm). Since Class I BSC do not provide product protection, general usage has declined. However, the Class I is still used to enclose equipment (e. g centrifuges) or procedures (e.g. cage dumping) that may generate aerosols.

CLASS II - The Class II BSC provides personnel, environment, and product protection. Airflow is drawn to the front grille of the BSC and downward laminar flow of HEPA filter air minimizes the chance of cross-contamination along the work surface of the cabinet. Since the HEPA filtered air is free of contaminants, it may be recirculated back into the laboratory or ducted out of the building.

CLASS III - The Class III BSC is used for work with organisms that have a high potential to cause a life-threatening disease. It provides maximum protection to the worker and environment. It is a gas-tight enclosure in which long heavy-duty rubber gloves are attached to ports to manipulate the isolated material inside the cabinet. These BSCs are usually only installed in maximum containment laboratories that have controlled access and special ventilation systems.

Clean Benches

A clean bench (CB) is NOT a BSC and should not be used while working with infectious microorganisms. The CB only provides product protection. The CB discharges HEPA filtered air across the work surface and toward the worker. This causes exposure to materials being manipulated on the CB. The CB is usually used for dust-free assembly of electronic devices or sterile equipment.



Before selecting a self-contained ventilation system for your laboratory, the building's ventilation system, the equipment location, and the laboratory space need to be considered. For example, if the hood or BSC is located near the entrance of the laboratory, the people walking in and out of the lab may jeopardize the integrity of the airflow pattern. To maximize safety and savings, you also have to determine what kind of work will be done in the laboratory now and in the future. Before purchasing ventilation equipment, you should contact Environmental Health and Safety and Campus Design to help you make the right selection

DON'T BREAK YOU'RE BACK TO SUCCEED—*USE YOUR MIND!*

A U.S. Navy Scuba Diving instructor once recalled an exercise at sea involving two groups of seaman just learning to dive. The first group, all strong young men, was told to move a very heavy piece of underwater equipment from one location on the ocean bottom to another. The group tied the equipment with heavy rope and proceeded to drag it on the ocean bottom while they were in full diving gear until it rested in the desired location.

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Room Occupancy Load

Every room on campus, and especially classrooms and areas of assembly, are designed to safely accommodate a limited number of people. This is commonly called the room occupancy load. The number of people that can occupy the space is based on the use of the room (classroom, laboratory, office etc.), the square footage of the room, and the number, arrangement, and size of the exits.

During this past year occupancy signs were posted in many campus locations. The placement of the sign has been determined by the configuration of the room, and it's decor, but generally is placed so that users of the room can readily see it.

The numbers of persons listed on these signs is the MAXIMUM number of persons that can safely occupy that room and that number must not exceeded. All room occupancies were established based on size and use, for example, classroom occupancy numbers were set by the Registrar's office. To exceed that number is a direct violation of State Fire Marshall regulations.

Should you have any questions or concerns regarding room occupancy loads, and/or the signage please feel free to contact EH&S for assistance.

Back

The second group comprised of young female seaman, realizing they did not have the strength to drag the equipment, devised a method using flotation devices to lift the heavy apparatus from the bottom. The equipment was then quickly moved on the surface of the water. When they expelled the air from the flotation device, the equipment sank to its final destination.

Both groups expended the same amount of time completing the task. The first group suffered injuries from exerting unusual physical effort, the second group suffered none.

Here at Florida State University we are asked many times to move heavy items. Those of us who handle heavy items routinely, have the proper equipment and training to do so. Sometimes those of use who do not lift heavy things as a matter of course, have to be inventive when we are asked to get the equipment from one place to another. Why not ask the routine movers for advice, ask to use their equipment, or call the Department of Environmental Health and Safety for some ideas where to find resources to do the job without injury? If you think before you move, you may get the job done just as quickly, but without breaking your back.

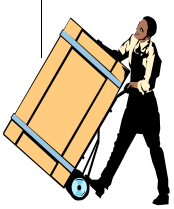
DON'T GET CAUGHT IN A PINCH

Until recently I did not know that shopping with small children in a mall that has escalators presents a challenge. A case reported on television opened my eyes to the dangers of escalators and children. Apparently, some small children have become caught in the opened spaces (greater than 1/8 inch) to the side of the escalator steps. Their shoes catch and feed their toes inside the grooves causing serious injury. Another pinch hazard to children that I have become aware of through personal experience is the automatic luggage conveyors in airports if children are allowed to play on them.

We all look out for the safety of our children, but do we take note of similar "pinch point" potentials in the workplace. Every day as I make the rounds throughout campus I see unprotected rotating shafts in close proximity of busy workers. In laboratories, unguarded rotating vacuum pump belts are strategically positioned at leg and foot levels where dress hems and lab coats can get caught in them. One such device caused a young worker eight years ago to become a paraplegic when she caught her long hair in a rotating shaft.

Not long ago, within a two week period at FSU one researcher amputated his finger when he came in contact with an unprotected, rotating propeller and a maintenance supervisor had his finger amputated when he came close to a rotating fan belt within a motor. Other potential pinch points include unprotected rotating PTO shafts on tractors, moving gears and rotating blades.

Always turn off powered equipment and make sure it is locked out before working on it to prevent getting caught in moving parts. Be aware of all moving parts that can be guarded before you work. Make sure the guards are in place at all times, ensure they are installed after maintenance. Any work with the guards must be completed while the device is turned off. If you cannot find guards, talk to your supervisor about replacing those that are missing. As always, the Department of Environmental Health and Safety can give you advice on the best way to protect your safety, but you ultimately are responsible for your own safety and the safety of your co-workers, so take note. It takes time and effort to ensure that you are protected from moving parts, but it is well worth it. Just ask those who have lost toes, fingers and the use of much of their body to careless accidents involving pinch points.



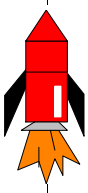
In the news….

Dr. C.Everett Koop, former Surgeon General of the United States wrote recently about phony health scares surrounding soft plastic products. He chaired a panel of 17 scientists that concluded that the products containing compounds from the family of phthalate esters (DINP and DEHP) are not harmful to adults or children. Many products, IV bags, vinyl toys and baby teething rings have been attacked. Dr. Koop went on to say that the more serious problem is the scare campaign that is being waged against soft plastic medical products, especially those used to hold blood. The panel was unable to find any solid evidence to suggest that the products were harmful.

EPA Chemical Safety Alert, EPA recently issued an alert that identifies a potential shortcoming in the use of safety information from MSDSs. EPA identified several situations where there were conflicts in MSDS information. EPA states that MSDSs are a single source of information for safe handling of chemicals. In emergencies or unusual situations, other references **MUST** also be consulted.

Did you know....

1972: the United States Environmental Protection Agency issues an order banning use of DichloroDiphenylTrichloroethane (DDT, more precisely, 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane) to become effective December 31, 1972.



1945: Atomic bomb test, Trinity Site, Alamogordo Air Force Base.

1914: Robert Goddard obtains a patent for a liquid fuel rocket.

1910: Heinz Fraenkel-Conrat was born. He separated viral RNA from protein in tobacco mosaic virus and showed that RNA was the active agent, turning attention to the role of nucleic acids in heredity.

1854: George Eastman was born, inventor and manufacturer of Kodak films and cameras.

1844: Charles Goodyear patents vulcanization process for rubber.

1825: August Beer was born. Author of Beer's law relating absorption of light to concentration of absorbing material.

1799: the first standards for the meter and kilogram are deposited in the National Archives of France.

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