



Weill Cornell Medical College

EHS News

Nitrogen Use at WCMC

While nitrogen gas makes up 78% of the air we breathe, liquefied nitrogen is used as a cryogenic liquid in clinics and laboratories to store biological samples and freeze tissue. It is a colorless, odorless, extremely cold liquid under pressure. Liquid nitrogen produces a large volume of gas when it vaporizes which can displace the oxygen in the air or cause over-pressurization and explosions in unvented containers. Exposure to liquid nitrogen or cold nitrogen vapors can also cause extensive tissue damage and burns. Due to these potential hazards, special precautions must be taken during handling and use.

Anyone handling liquid nitrogen must use waterproof thermal insulated gloves, chemical splash goggles, and lab coats. In addition, liquid nitrogen must only be stored and transported in approved containers with vented lids such as the Thermolyne Thermo-Flask®.

Too much nitrogen in the air can cause an oxygen-deficient atmosphere (<19.5%). Since nitrogen is colorless and odorless, oxygen monitors are installed in certain areas storing large amounts of liquid nitrogen. EHS assesses spaces to determine where these monitors are needed. Monitors are provided and calibrated by EHS as required. New York City Fire Department (FDNY) permits these spaces and inspects them at least annually.



Proper PPE for liquid nitrogen use

RESPONSE GUIDE
OXYGEN MONITOR ALARM

EHS ENVIRONMENTAL HEALTH & SAFETY

When Does the Oxygen Monitor Activate?

OXYGEN DEFICIENCY ALERT
If the oxygen level in the area drops below 19.5%, the monitor indicates an oxygen deficient atmosphere.

Alarm Response

- Alert / Evacuate**
 - Notify all personnel and immediately evacuate to the area
 - Close doors to contain release
 - Do not enter the area while the alarm is sounding
- Contact EHS**
 - Move to a safe location
 - Contact EHS (646-962-7233)

TREAT ALL ALARMS AS VALID

QUESTIONS?
ENVIRONMENTAL HEALTH AND SAFETY
CALL 646-962-7233 OR VISIT www.med.cornell.edu/ehs
Weill Cornell Medical College | 402 East 69th Street, Room LA-0002 | New York, NY 10021

Oxygen Monitor Alarm Response Procedures

Currently, we have approximately 100 oxygen monitors installed around campus in mechanical rooms, clinical spaces, and laboratories where there is enough nitrogen to unsafely displace the amount of oxygen in the room. The monitor is set to alarm when the oxygen level falls below 19.5%. Procedures to follow in the event of an alarm are placed next to every monitor. All alarm activations must be treated as real. If the alarm is activated while performing a routine task, such as dispensing of liquid nitrogen or retrieving specimens from the freezer or dewar, stop the task immediately and close all valves/containers. Then proceed to notify all personnel and evacuate the area, closing doors to contain the release. After evacuation, contact EHS and do not re-enter the area until EHS has cleared the space.

More information is available in the [Liquid Nitrogen Handling and Use](#) update on the EHS website, or by contacting EHS.

Did you know...

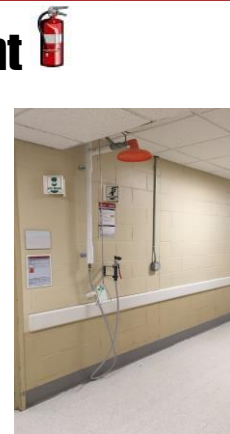
Fluorescent light bulbs may contain toxic metals (such as mercury) and require special disposal. If you have equipment with a bulb that you maintain (e.g. light box), submit the Chemical Collection Request Form online at this address: weill.cornell.edu/ehs/chemwaste when you replace the bulb. EHS will collect the bulb for proper disposal. More [information is available](#) on the EHS website.

Obstruction of Emergency Equipment

As accidents can occur at any time, it is important to always maintain ready access to emergency equipment and fire exits. Never block emergency equipment such as fire extinguishers, sprinklers, fire alarm devices, safety showers, eyewashes, and spill kits. Your safety and that of your colleagues may depend on it.

For example, the obstruction of safety showers can cause delays in exposure response leading to serious injury. As a result, a minimum clearance of 3 feet should be maintained around the safety shower at all times.

Contact EHS at 646-962-7233 if you have any questions.



Unobstructed access to safety shower

Current newsletter available electronically at:
<http://weill.cornell.edu/ehs/news>

646-WMC-SAFE (962-7233)
ehs@med.cornell.edu

2014 – Top EHS Achievements

Since our last newsletter, the number of services we provide has substantially grown as the WCMC community continues to expand. Here is some of what we have been up to lately.

Do you have suggestions on areas where EHS can improve? Email EHS at ehs@med.cornell.edu.

Emergency Response & Planning

- Responded to **27** water damage and flood events, **22** hazardous materials spills, and **4** fires.
- Emergency Notification System: **131** emergency groups and **2263** individual contacts.
- Developed a Lessons Learned Section on the EHS website in an effort to prevent reoccurrence of accidents at WCMC.

Fire Safety

- Maintained an inventory of **1,545** Fire Extinguishers
- Issued **1,257** permits for welding or doing work that could cause a fire or the false activation of a fire alarm in WCMC buildings.
- Conducted **65** fire drills.
- Operated fire alarm systems in **12** different WCMC buildings and maintained **2,779** fire alarm devices in these systems.
- Assessed **125** Utility Shutdowns and coordinated **80** temporary impairments of fire and life safety equipment for construction or repair.

General and Construction Safety

- Conducted **544** hazard assessments of confined spaces, high noise, air monitoring equipment, physical hazard equipment, mechanical shops and local exhaust systems.
- Completed **36** asbestos surveys and **13** asbestos abatement projects with **443** linear feet and **5390** square feet of asbestos removed.
- Performed **158** Construction Site inspections.

Customer Service

- Responded to over **1,334** service requests for immediate assistance, some of which included: indoor air quality assessments, chemical hoods repairs, biological waste issues, and construction safety concerns.
- Conducted **132** hazardous materials shipping and import/export assessments.
- Investigated **156** employee and student accidents and provided accident prevention recommendations.
- Coordinated **25** laboratory moves including the relocation of over **8,300** chemicals.
- Provided Respirator Fit Testing to **264** employees and students.

Biological Safety

- Reviewed **113** biological/recombinant DNA research proposals.
- Performed **199** biological safety lab inspections.
- Conducted **249** risk assessments for research involving biological/chemical agent use in animals.
- Investigated **43** bloodborne pathogen exposures and provided accident prevention assistance to departments, employees and students.

Waste Disposal

- Chemical waste: Received **1,153** collection requests to collect **9,253** containers (**22.89** tons) within an average of **1.49** days of submittal.
- Radioactive waste: Received **33** collection requests to collect **78** containers (**549** lbs).
- Regulated Medical Waste (Sharps):
 - ❖ Labs: Received **1,249** collection requests to collect **8,268** sharps containers (**122.87** tons)
 - ❖ Clinics: Collected **2,461** sharps containers (**8.44** tons)
 - ❖ Reusable sharps containers (provided by EHS), saved **\$456,000** and prevented **37,200** lbs of plastic from going into landfills
- Universal Waste:
 - ❖ Recycled **4,915** lbs of fluorescent lamps/bulbs
 - ❖ Recycled **4,827** lbs of used batteries
 - ❖ Recycled **1,305** computer monitors and CPU's
 - ❖ Recycled **32,141** lbs of lead
- Oversaw the NYSDEC regulatory inspection of the College's chemical hazardous waste program. The 2-day inspection included 3 inspectors assessing hazardous waste generating locations, waste storage facilities and performing a record-keeping audit. Weill Cornell passed without violations or fines.

Radiation Safety

- Provided **20,270** dosimetry badges.
- Handled **290** Clinical Patient Radiation Therapy Cases.
- Conducted **513** x-ray acceptance and routine testing.
- Oversaw **253** isotope laboratory purchases.

EHS Safety Training Program

- Provided over **180** small group trainings to Departments, Divisions, and units that were tailored to address the specific safety issues of each group.
- Provided approximately **60** regularly scheduled instructor-led safety trainings.
- Trained over **2,600** employees in instructor-led safety trainings and small-group sessions.
- Provided online training to approximately **2,000** employees.

Laboratory Safety

- Coordinated **295** FDNY lab inspections for over **1,041** lab rooms and ensured **100%** resolution of violations.
- Performed **428** chemical hood surveys.
- ChemTracker was utilized by **294** Principal Investigators and **655** users to manage **>65,000** chemicals and promote proper chemical segregation.
- Identified **1,200** highly hazardous substances.
- Posted **287** new Health and Safety Door Signs which provides hazard information and emergency contacts.