

Inspection Report Full Report

Description			
Type:	Lab Inspection EHS	Date:	Feb 23, 2018
Room:	ACMAL core facility	Organization:	College of Engineering
Inspector:	David Dixon	Department:	Materials Science and Engineerin
		Facility:	Core Facility: Applied Chemical

Roster	
David Dixon	EHS
Owen Mills	Laboratory Supervisor / PI

Actions and Recommendations	
1. Laboratory Supervisor / PI Required	
1.1 A minimum of 36" clearance is required in front of electrical panels	
Assigned To: Owen Mills (Due: Mar 9, 2018)	Severity: Medium
1.2 All compressed gas cylinders must be secured.	
Assigned To: Owen Mills (Due: Mar 2, 2018)	Severity: High

Resources
See 29 CFR 1926.403(i)(1)(i)
University Safety Manual Ch 6.3 Compressed Gases

Question Responses
1. 1. General Safety
1.1 A current Michigan Tech emergency response poster is posted at the entrance to the laboratory. Selection: Yes
1.2 Hazard symbols and warnings are posted as required for radiation, biohazard, high voltage, laser, unattended operations, and other hazards. Selection: Yes
1.3 Doors controlling access to the laboratory are closed at all times and locked when the laboratory is not occupied. Access is limited to individuals authorized to work in the laboratory. Selection: Yes Inspector Note: Radiation training (online) necessary?
1.4 A hazard/risk assessment has been conducted to identify potential risks associated with laboratory equipment, materials and procedures. Methods to minimize those risks have been implemented. Selection: Yes
1.5 A laboratory-specific safety manual defining laboratory policies, safe practices, and procedures is available and accessible to everyone in the lab. Individuals working in the laboratory agree to follow laboratory defined policies, practices, and procedures. Selection: Yes

1.6 Appropriate personal protective equipment is worn in the laboratory. Gloves, lab coats, and other potentially contaminated PPE are removed before leaving the laboratory. Selection:	Yes
1.7 Laboratory has appropriate ventilation for the work being performed (chemical fume hood, snorkel, canopy hood, biosafety cabinet, etc.). Selection:	Yes
1.8 A sink is available for hand washing in areas where hazardous materials are used. Selection:	Yes
1.9 All laboratory furniture (chairs, shelves, benches, cabinets, etc.) is in good condition, is appropriate for use in the laboratory, and is capable of supporting anticipated loads. Selection:	Yes
1.10 Work areas are well lit with all lights in working order. Selection:	Yes
1.11 All laboratory refrigerators and freezers are labeled with appropriate hazard signage. Food storage is prohibited. Selection:	Yes
1.12 A First Aid kit is available to deal with minor injuries that may be sustained in the laboratory. Contents are in date. No aspirin or other pain relievers. Selection:	Yes
2. 2. Housekeeping	
2.1 The laboratory is well maintained, with work and storage areas clean and organized for safe and efficient use. Selection:	Yes
2.2 Access to exits and safety equipment is unobstructed. Floors aisles, work areas, and entry/exits routes are uncluttered with no tripping hazards. Selection:	Yes
2.3 Appropriate containers are available for the disposal of broken glass, sharps, hazards, wastes, universal wastes, or other hazardous materials. Selection:	Yes
3. 3. Fire Safety	
3.1 Are flammable materials stored in the laboratory? Selection:	No
3.2 Fire sprinkler heads are unobstructed. All furniture and other materials are at least 18 inches below the the plane of the sprinkler heads. Selection:	Yes
4. 4. Electrical Safety	
4.1 (4.0.1) Electrical panels have a 36 inch clearance in front of the panel. Breakers and disconnects are labeled. Selection:	No
4.2 Electrical outlets within 6 feet of sinks and other wet areas are protected by a ground fault circuit interrupter. Selection:	Yes
4.3 Power cords on equipment and tools are in good condition (no exposed wires or frayed cords). Electrically powered tools and equipment are grounded or double insulated. Selection:	Yes
4.4 Extension cords are used appropriately and only for temporary applications. Selection:	Yes
4.5 Battery terminals are protected to prevent electrical shocks or potential shorts. Selection:	Yes

4.6 Power strips are only used with computers or other low amperage equipment. Power strips are not "daisy chained" or plugged into an extension cord.	Yes
Selection:	Yes
5. 5. Chemical Safety	
5.1 Are chemicals used in the laboratory?	Yes
Selection:	Yes
5.2 A current chemical inventory listing the chemicals used in the laboratory is available.	Yes
Selection:	Yes
5.3 A spill kit is available for cleanup of hazardous materials. Its location is posted in the laboratory.	Yes
Selection:	Yes
5.4 Safety Data Sheets (SDS) are available for chemicals used in the laboratory. Everyone working in the laboratory knows how to access Safety Data Sheets.	Yes
Selection:	Yes
5.5 Chemical containers, including working solutions and those with non-hazardous contents, are correctly labeled with (i) full name of the chemical, (ii) concentration, (iii) hazardous properties, (iv) date, (v) responsible person.	Yes
Selection:	Yes
5.6 Waste chemicals are appropriately collected in a compatible leak-proof containers. Containers are closed. All RCRA wastes have the word "hazardous waste" and the contents spelled out.	Yes
Selection:	Yes
5.7 An eyewash and/or emergency shower are available when required. They are inspected regularly and freely accessible (not behind closed doors).	Yes
Selection:	Yes
5.8 (5.7.1) Compressed gas cylinders are properly segregated, securely stored, upright, and capped when not in use.	No
Selection:	Note comment about gas cylinder in 615, attach to bracket and not pipe.
Inspector Note:	
5.9 Chemicals are well organized and correctly and safely stored. Chemical containers and storage shelves are in good condition. Hazardous liquids are stored below eye level.	Yes
Selection:	Yes
5.10 The chemical fume hood is in good operational order. Inspection certificate is current. Sash is closed when not in use.	Yes
Selection:	Yes
6. 6. Chemicals Requiring Special Precautions	
6.1 Perchloric acid is only used in appropriate hoods that include wash down capabilities.	Yes
Selection:	Yes
6.2 Is hydrofluoric acid used in the laboratory?	No
Selection:	No
6.3 Are cryogenic liquids are being used in the laboratory?	Yes
Selection:	Yes
Inspector Note:	Mark liquid nitrogen dewar
6.4 Are peroxide forming chemicals used in the laboratory?	No
Selection:	No
6.5 Are controlled substances used in the laboratory?	No
Selection:	No
6.6 Is concentrated phenol being used in the laboratory?	No
Selection:	No

6.7 Are highly toxic gases used in the laboratory? Selection: No
6.8 Dewars are rated for the cryogenic liquids used in the laboratory. Selection: Yes
6.9 The room where dewars or cylinders are used has appropriate ventilation. The space has been evaluated to determine if an oxygen sensor is required. Selection: Yes Inspector Note: Consider an O2 sensor in 637.
6.10 Appropriate personal protective equipment is available and used when handling cryogenic liquids. Written procedures are available. Selection: Yes
6.11 Is perchloric acid used in the laboratory? Selection: Yes
6.12 Is ethidium bromide used in the laboratory? Selection: No
6.13 Is elemental mercury (including thermometers, barometers, or other mercury containing devices) being used in the laboratory? Selection: No
6.14 Are pyrophoric chemicals used in the laboratory? Selection: No
7. 7. Biological Safety
7.1 Is this a biosafety level 2 (BSL-2) laboratory? Selection: No
7.2 Are biological materials used in this laboratory? Selection: No

Images	
	Dewars are rated for the cryogenic liquids used in the laboratory. - Notes:
	The laboratory is well maintained, with work and storage areas clean and organized for safe and efficient use. - Notes:
	Electrical panels have a 36 inch clearance in front of the panel. Breakers and disconnects are labeled. - Notes:

		<p>Lock out procedures are in place when repairing or servicing equipment. - Notes:</p>
		<p>All equipment safety concerns are covered by the questions in this section. - Notes:</p>
		<p>All laboratory refrigerators and freezers are labeled with appropriate hazard signage. Food storage is prohibited. - Notes:</p>
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