

Engineering Physics Research Hazards Safety Report

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A) Elaboration on Potential Hazards

Radiation – UV, visible or NIR light from laser sources

Electrical – power sources for lasers, detectors

High Temperature – hot bath, hot plate, soldering equipment

Potential Falling Objects – items on shelves, tables

B) Routine/Standard Operating Procedures

UV Light Source – appropriate eyewear for UV laser light sources (correct wavelength)

Chemical Handling – gloves to be worn when handling hemoglobin, PDMS

C) Emergency Preparation

Types of Accidents Reasonably Possible and their Consequences:

Laser Accidents – unintentional redirection of beam into eye

Burns – hot bath, hot plate

Chemical Spill – hemoglobin, PDMS

Emergency Procedures:

Laser Accidents – immediate medical attention, dial 905-525-9140 ext. 88

Burns – first aid, if severe dial 905-525-9140 ext. 88

Chemical Spill – follow MSDS

Emergency Devices/ Materials Available:

Fire Extinguisher – located across from ETB 431 and in front of ETB 435 (class A)

Eye Wash Station – located in ETB 306

Emergency Shower – located in ETB 431

D) Dangers of Lasers/ Chemicals

Lasers

Lasers are sources of highly coherent UV, visible or IR light. Injury from a laser can be caused by direct exposure, spectral reflection or diffuse reflection from a surface. It is important to know where the beam is at all times, especially if the laser is not visible. Damage to the eye can be serious and may not be repairable. Damage to the skin from short term exposure includes burns whereas long term exposure above the maximum permissible exposure (MPE) can result in photochemical damage. When operating with Class 3B and Class 4 lasers, appropriate eyewear for the laser in use must be worn in the lab to prevent accidental exposure.

PDMS

Avoid inhalation of vapour or mist

Do not store with strong oxidizing agents

In case of skin contact: immediately flush with soap and plenty of water

In case of eye contact: flush with water as a precaution

Carcinogenicity: Category 2

Ethylbenzene 0.1% – 1% w/w

Boiling Point: 100°C

Flash Point: 121.1°C