

CHEMICAL HYGIENE PLAN
Department of Chemistry
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Approved by the faculty on October 28, 2004

L INTRODUCTION

D. Housekeeping, Maintenance and Inspections

1. Keep the work area clean and uncluttered of

within the laboratory. Standard warning

- directed in the MSDS.
- c. After clean up, all materials, including

G. Information and Training Program

The Chemistry Department Chemical Hygiene Plan requires that chemical laboratory workers be informed of the hazards to which they may be exposed. Additionally, they must be trained in practices for the safe use and

second test, the waste is hazardous if it possesses one or more of four hazardous characteristics: ignitibility (e.g., flashpoint below 60E C), corrosivity (e.g., is aqueous and has a pH #2 or \$12.5), reactivity

4. Disposal procedures:
 - a. Organic and organometallic materials
 - i.

2. Housekeeping in the storage areas must be neat and orderly.
3. Storage shelves and units must be stable and secure against sliding and collapse and not subject to flooding.
4. Keep only the minimum quantities of flammables and combustibles in the laboratory. See Table II for maximum quantities that can be stored in a singlves

iv.

dry. Avoid use unless absolutely

with solid organic peroxides. Never use glass containers with screw cap lids

H. Cooling Baths, Cold Traps and Temperature Control
Combinations

7. Cryogenics may alter the physical characteristics of materials (e.g., susceptibility to shattering upon impact). Select all work materials carefully.

I.

J. Reduced Pressure Operations

or

Precautions for reduced pressure operations should include:

1. Vacuum desiccators:
 - a. Protect user from the dangers of possible implosion by wrapping the vacuum desiccator with cloth-backed friction or duct tape, by enclosing it in a _____ by

radioactive material,

L. Lasers and Ultraviolet Radiation

1. Lasers: Overexposure and possibly permanent damage of the eye and skin are the principal hazards of improper laser use. Other hazards include fires or vaporization of hazardous materials that may be caused by the laser beam or electrical shock that may result from accidental contact with the laser's power supply. For regulatory purpose, lasers are classified as continuous (CW) or pulsed, by the wavelength of the radiation emitted: visible (400 nm-700 nm),

- iv. Pipetting. Oral pipetting is prohibited. Mechanical pipetting

- vi. Only the minimum quantities of chemical carcinogens necessary for research shall be present in a work area.
- d. Identification, storage and inventory
 - i. Storage vessels containing chemical carcinogens shall be labeled:

 - ii. Stock quantities of chemical carcinogens shall

- i. Chemical carcinogens that have spilled and constitute a hazard shall

2.

V. EMPLOYEE EXPOSURE MONITORING

- A. Initial Monitoring. The Department Head will provide adequate employee monitoring for substances that are regulated by a health standard that require monitoring, such as formaldehyde or ethylene oxide, if there is a reason to believe that exposure levels routinely exceed the threshold limit value (TLV).
- B. Periodic Monitoring. If initial monitoring discloses employee exposure above the TLV,

APPENDIX I: Material Safety Data Sheets (MSDSs)

A material safety data sheet must be available in the laboratory or on a book-marked computer site available in the laboratory, for every chemical

- DANGER: Substances that have known harmful effects or that may have harmful effects, but have no available literature citing such effects.
PRECAUTIONS:

- STENCH: Substances that have or generate bad smelling odors.
PRECAUTIONS: Open only in a hood.
- TERATOGEN: Substances that cause the production of physical defects in a developing fetus or embryo.
PRECAUTIONS: Handle with extreme care! Do not breathe vapors and avoid contact with skin, eyes and clothing. Use suitable protective equipment when handling.
- TOXIC: Substances that are hazardous to health when

2,4-dinitrotoluene	nitrobenzene
endrin	pentachlorophenol
heptachlor (and its	pyridine
hydroxide)	selenium
hexachlorobenzene	silver
hexachlorobutadiene	tetrachloroethylene
hexachloroethane	toxaphene
lead	trichloroethylene
lindane	2,4,5- and 2,4,6-
mercury	trichlorophenol
methoxychlor	2,4,5-TP(Silvex)
methyl ethyl ketone	vinyl chloride

Chemical	Incompatible With
Chromic acid and chromium trioxide	Acetic acid, naphthalene, camphor, glycerol, alcohol, flammable liquids in general
Chlorine	Ammonia, acetylene, butadiene, butane, methane, propane, (or other petroleum, gases), hydrogen, sodium carbide, benzene, finely divided metals, turpentine
Chlorine dioxide	Ammonia, methane, phosphine, hydrogen sulfide
Copper	Acetylene, hydrogen peroxide
Cumene hydroperoxides	Acids (organic or inorganic)

Chemical	Incompatible With
Sodium peroxide	Ethanol, methanol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerol, ethylene glycol, ethyl acetate, methyl acetate, furfural
Sulfides	Acids
Sulfuric acid	Potassium chlorate, potassium perchlorate, potassium permanganate (similar compounds) of light metals, such as sodium, lithium)

Tellurides

GLOSSARY

Most terms and abbreviations that are used in the Plan are defined below. For a complete list of abbreviations that are used in Materials Safety Data Sheets, see the MSDS glossary.

action level: concentration designated for a specific substance, calculated

SARA