SPECIAL PROCEDURES FOR USING SELECT CARCINOGENS, REPRODUCTIVE TOXINS, AND CHEMICALS WITH HIGH ACUTE TOXICITY
for
Flora High School

Last Revised 8/14/2017

(Chemical Hygiene Plan Appendix C)

The following chemicals, present in Flora High School laboratories and chemical storage room, are identified by OSHA as Select Carcinogens, Reproductive Toxins, or Chemicals with High Acute Toxicity are present in the laboratory. With the exception of phenolphthalein, these chemicals are not used routinely.

- Chromium(VI) compounds (IARC Group 1; NTP - Known)
- Cobalt compounds (IARC Group 2B)
- para-Dichlorobenzene (IARC Group 2B; NTP – Reasonably Expected)
- Formaldehyde (IARC Group 1; NTP – Known)
- Lead metal (IARC Group 2B; NTP – Reasonably Expected; RT)
- Lead compounds (IARC Group 2A; NTP – Reasonably Expected; RT)
- Mercury (RT)
- Mercury compounds (RT)
- Mercury(II) dichloride (HAT)
- Naphthalene (IARC Group 2B; NTP – Reasonably Expected)
- Nickel compounds (IARC Group 1; NTP – Reasonably Expected)
- Phenolphthalein (IARC Group 2B; NTP – Reasonably Expected)
- Sulfuric Acid (NTP – Known)

Use of these chemicals should be limited to applications where no suitable alternative is feasible, and steps should be taken to minimize the amount of the chemical used. Additionally, the following special precautions should be taken when working with these chemicals. The additional precautions will be listed for each chemical and follow the form of:

A. Establishment of a designated area.
B. Use of containment devices such as fume hoods.
C. Procedures for safe removal of contaminated waste.
D. Decontamination Procedures.

1. Chromium(VI) Compounds

A. Chromium(VI) compounds will be dispensed only in a dedicated area set up at the time of use. This area will be thoroughly decontaminated prior to returning the lab area to general use.
B. Fume hoods should not be necessary for containment of chromium(VI) solids or solutions, but employees should wear protective gloves when handling. Particulate mask are advisable if fine powder is being dispensed.
C. Solid and soluble chromium(VI) waste should be emptied into a labeled chemical waste container. Laboratory equipment touching chromium(VI) waste should be rinsed and the residue should be collected in a labeled chemical waste container prior to regular washing.
D. Areas and equipment contaminated with chromium(VI) compounds will be washed thoroughly with soap and water, and cleaning products will be collected in a labeled waste container.

Employees are encouraged to limit usage of chromium(VI) compounds.

2. Cobalt Compounds

A. Cobalt compounds will be dispensed only in a dedicated area set up at the time of use. This area will be

thoroughly decontaminated prior to returning the lab area to general use.

B. Fume hoods should not be necessary for containment of cobalt solids or solutions, but employees should wear protective gloves when handling. Particulate mask are advisable if fine powder is being dispensed.
C. Solid and soluble cobalt waste should be emptied into a labeled chemical waste container. Laboratory equipment touching cobalt waste should be rinsed and the residue should be collected in a labeled chemical waste container prior to regular washing.
D. Areas and equipment contaminated with cobalt compounds will be washed thoroughly with soap and water, and cleaning products will be collected in a labeled waste container.

Employees are encouraged to limit usage of cobalt compounds.

3. para-Dichlorobenzene

A. p-Dichlorobenzene will be dispensed only in a dedicated area set up at the time of use. This area will be thoroughly decontaminated prior to returning the lab area to general use.
B. Fume hoods should not be necessary for containment of p-dichlorobenzene, but employees should handle it only in a well-ventilated area and wear protective gloves when handling. Particulate mask are advisable if fine powder is being dispensed.
C. Solid or liquid waste should be emptied into a halogenated organic waste container. Laboratory equipment touching p-dichlorobenzene waste should be rinsed with acetone and the residue should be collected in a halogenated organic waste container prior to regular washing.
D. Areas and equipment contaminated with p-dichlorobenzene will be washed thoroughly with soap and water.

Employees are encouraged to use safer alternatives such as cetyl alcohol, stearic acid, or t-octyl phenol.

4. Lead Metal

A. Lead metal will be dispensed only in a dedicated area set up at the time of use. This area will be thoroughly decontaminated prior to returning the lab area to general use.
B. Fume hoods should not be necessary for containment of lead metal, but employees should wear protective gloves when handling. Fine powder should not be used, but it should be dispensed in a fume hood while wearing a particulate mask.
C. Lead metal waste should be emptied into a labeled chemical waste container.
D. Areas and equipment contaminated with cobalt compounds will be washed thoroughly with soap and water.

Employees are encouraged to avoid direct handling of lead and to use it in applications where it can be reused rather than disposed of.

5. Lead Compounds

A. Lead compounds will be dispensed only in a dedicated area set up at the time of use. This area will be thoroughly decontaminated prior to returning the lab area to general use.
B. Fume hoods should not be necessary for containment of lead solids or solutions, but employees should wear protective gloves when handling. Particulate mask are advisable if fine powder is being dispensed.
C. Solid and soluble lead waste should be emptied into a labeled chemical waste container. Laboratory equipment touching lead waste should be rinsed and the residue should be collected in a labeled chemical waste container prior to regular washing.
D. Areas and equipment contaminated with lead compounds will be washed thoroughly with soap and water, and cleaning products will be collected in a labeled waste container.

Employees are encouraged to limit usage of lead compounds.

6. Mercury Metal

A. Mercury metal should not be dispensed in the laboratory under any circumstance. Mercury will be handled only within a well-sealed container with precautions taken to prevent spillage.
B. Because mercury container will not be open, fume hoods should not be necessary for containment. Employees should wear protective equipment such as gloves when cleaning up any spill that should occur.
C. Mercury metal waste should be emptied into a labeled chemical waste container.
D. Areas and equipment contaminated with mercury compounds will be decontaminated following an appropriate procedure.

Employees are encouraged to avoid direct handling of mercury and to take all precautions necessary to prevent spillage.

7. Mercury Compounds

A. Mercury compounds will not be dispensed in the laboratory at this time.
B. Mercury compounds will not be dispensed in the laboratory at this time.
C. Mercury compound waste will be collected by a certified chemical waste agency.
D. Areas and equipment contaminated with mercury compounds will be decontaminated following an appropriate procedure.

Employees are encouraged to avoid handling mercury compounds.

8. Mercury(II) Dichloride

A. Mercury(II) dichloride will not be dispensed in the laboratory at this time.
B. Mercury(II) dichloride will not be dispensed in the laboratory at this time.
C. Mercury(II) dichloride waste will be collected by a certified chemical waste agency.
D. Areas and equipment contaminated with mercury(II) dichloride will be decontaminated following an appropriate procedure.

Employees are encouraged to avoid handling mercury(II) dichloride.

9. Naphthalene

A. Naphthalene will be dispensed only in a dedicated area set up at the time of use. This area will be thoroughly decontaminated prior to returning the lab area to general use.
B. Fume hoods should not be necessary for containment of naphthalene, but employees should handle it only in a well-ventilated area and wear protective gloves when handling. Particulate mask are advisable if fine powder is being dispensed.
C. Solid or liquid waste should be emptied into an organic waste container. Laboratory equipment touching naphthalene waste should be rinsed with acetone and the residue should be collected in an organic waste container prior to regular washing.
D. Areas and equipment contaminated with naphthalene will be washed thoroughly with soap and water.

Employees are encouraged to use safer alternatives such as cetyl alcohol, 1-octadecanol, palmitic acid, stearic acid, lauric acid, or 4-(t-octyl) phenol.

10. Nickel Compounds

A. Nickel compounds will be dispensed only in a dedicated area set up at the time of use. This area will be thoroughly decontaminated prior to returning the lab area to general use.
B. Fume hoods should not be necessary for containment of nickel solids or solutions, but employees should wear protective gloves when handling. Particulate mask are advisable if fine powder is being dispensed.
C. Solid and soluble nickel waste should be emptied into a labeled chemical waste container. Laboratory equipment touching nickel waste should be rinsed and the residue should be collected in a labeled chemical waste container

prior to regular washing.

D. Areas and equipment contaminated with nickel compounds will be washed thoroughly with soap and water, and cleaning products will be collected in a labeled waste container.

Employees are encouraged to limit usage of nickel compounds.

11. Phenolphthalein

A. Phenolphthalein should be procured and used in dilute alcohol solution only, mitigating its toxicity. In the event that solid powder is obtained, its handling will be contained in a fume hood.
B. Phenolphthalein alcohol solutions can be dispensed without confinement. Protective gloves are advisable, and hands should be washed after use to prevent accidental ingestion. Solid powder should be dispensed only in a fume hood and a mask should be warn to avoid inhalation.
C. Dilute solutions of phenolphthalein do not require special waste considerations.
D. Surfaces contaminated with phenolphthalein should be washed thoroughly with soap and water.

12. Sulfuric Acid

A. Concentrated sulfuric acid will be handled only in a fume hood. Dilute sulfuric acid should be kept in a covered container at all times.
B. Sulfuric acid should be dispensed in a fume hood. Gloves should be worn at all times when handling it.
C. Sulfuric acid must be chemically neutralized in a fume hood prior to disposal of the resulting sulfate salt.
D. Work areas contaminated by sulfuric acid should be chemically neutralized prior to cleaning with soap and water.