Chlorinated Solvents

Examples: methylene chloride, chloroform, trichloroethylene, dichloroethylene

Hazards

- Most of these compounds have an anesthetic or narcotic effect, causing people to feel intoxicated if overexposed. This can be particularly dangerous when working around machinery, as judgment and coordination can be impaired.

- Some of the chlorinated solvents are strong systemic poisons which damage the liver, kidneys, nervous system, and other organ system. These symptoms most often appear gradually, with nausea, loss of appetite, vomiting, headaches, weakness, and mental confusion most common.

- All chlorinated solvents can cause dermatitis (chapping, drying, rashes) on repeated contact with the skin, since they remove the protective fats and oils. Gloves appropriate for a particular chlorinated solvent should be determined by consulting a glove reference chart – see EH&S website under Programs/Lab Safety/Personal Protective Equipment.

- Many of the compounds are highly irritating to the membranes around the eyes, and in the nose, throat, and lungs. Examples of chlorinated solvents which have irritating properties are ethylene dichloride and chloroform.

- In studies on laboratory animals, many chlorinated hydrocarbons have been linked to the development of cancer in animals; examples of these compounds are: ethylene dichloride, perchloroethylene, chloroform and methylene chloride.

- When excessively heated, chlorinated solvents can decompose, forming highly toxic fumes such as phosgene, hydrochloric acid, and chlorine.

- With few exceptions, most of the chlorinated hydrocarbons are non-flammable.

Work Practices: as with all volatile hazardous materials, chlorinated solvents must always be used in a fume hood or with other local exhaust ventilation such as an approved snorkel. Inhalation of the vapors is not an acceptable work practice.

For further information, contact the EH&S Specialist at x-4899