

 <b>DALHOUSIE UNIVERSITY</b> <i>Inspiring Minds</i>  <b>Safe Work Instructions for Working With Solvents</b>	<i>Policy Sponsor:</i>  Assistant Vice President Facilities Management	<i>Approval Date:</i>  October 2015
	<i>Responsible Unit:</i>  Trade Services	<i>Revisions:</i>  January 2018

#### **Known Hazards**

Eyes, nose and throat and skin irritation, toxic to liver and kidneys, cardiovascular issues, effects on the central nervous system (brain and spinal cord) and peripheral nervous system, fire, hearing loss, incompatible with other chemicals and materials, explosive.

#### **Applicable Regulations / Standards / References**

Transportation of Dangerous Goods, Workplace Hazardous Information System, Material Safety Data Sheets,

#### **Personal Protective Equipment Requirements**

**Always refer to the MSDS to confirm the specific PPE requirements for each solvent.**

Air tight goggles, respirators, full face respirators, safety gloves, protective clothing matched to the type of solvent, additional specific requirements specified in MSDS.

#### **Job Specific Training Requirements**

WHMIS, PPE training, training in the use and handling of solvents

#### **Safe Job Instructions**

Job steps are listed in the order in which they must be completed. Key activities follow each step. Key steps and the associated activities must be followed in the order presented to achieve maximum efficiency in safety, production, quality and overall loss prevention.

#### **CONTROL MEASURES**

- Consider whether you can do the required task without using a solvent.
- Ensure that adequate spill kits and absorbent material are available before initiating work.
- Read the MSDS for the solvent(s) to be used prior to its initial.
- Ensure that an eyewash station is located nearby.
- If you cannot eliminate the use of a solvent, or solvents, consider substituting the solvent with a less hazardous substance.
- Always perform a hazard assessment of any substitute being introduced to a workplace.

- Ensure the work area is checked for ignition sources such as live electrical circuits, electric sparks, propane torches, welding activities, and hot surfaces.
- Ensure that no activities involving an ignition source, such as a propane torch, will be performed near where you will be working with flammable solvents.
- Where solvents are used for cleaning or degreasing consider the following substitutes:
  - Abrasive methods such as compressed air, water pressure or steam or abrasive materials such as sand, steel grit, sodium bicarbonate
  - Water based cleaners /detergents
  - Biodegradable solvents such as limonene, terpenes, etc. or other products derived from natural sources.
- Ensure that any substitute used is effective, compatible with the process, equipment and other materials being used and that appropriate control measures are used to deal with any hazardous condition the substitute may introduce to the workplace.
- Ensure that the waste disposal system being used is capable of handling the solvent or a substitute.
- Use local / point ventilation when ever possible.
- Perform work inside a fume hood if available.
- Ensure that ventilation systems are designed to ventilate the work area and eliminate any hazardous fumes.
- Monitor air quality to ensure substitution or engineering measures being used are ensuring a safe work area.
- Use proper PPE when other control measures are not practicable, feasible or do not provide sufficient protection.
- Wear appropriate respiratory protection as specified by solvent MSDS.
- Wear air tight splash / vapor proof goggles while working with solvents.
- Wear safety gloves such as neoprene or nitrile rubber gloves. (Check MSDS requirements.)
- Wear protective clothing that is appropriate for the solvent being used.

## **PRECAUTIONS**

- Avoid repeated or continuous exposures to low concentrations of solvents over a long period of time or exposure to high concentrations over short periods of time.
- Avoid splashing solvents in your eyes or on your skin.
- Avoid breathing solvent fumes.

- Use automatic or closed systems to pump solvents from storage containers to process containers or small containers for task or daily use.
- Keep solvent containers closed when they are not in use.
- Ensure any containers into which a solvent is decanted is labelled according to WHMIS workplace labelling procedures especially if it may be left unattended.
- Only use solvents for their intended purpose never for non-compatible applications.
- Do Not use solvents on or around hot surfaces or other sources of ignition.
- If using a solvent in an aerosol can ensure that the nozzle is pointed away from you and any other persons in the work area.
- Use and store solvents only in areas that are free from sparks, open flames or other sources of ignition and oxidizers.
- Ensure that solvents are stored in flammables cabinets or rooms specifically designed for the storage of flammables.
- Do Not store solvents with non-compatible materials or substances.
- Do Not store aerosol solvents where they may be exposed to temperatures causing a potential explosive situation.

#### **SPILL CONTROL MEASURES**

- Ensure that a spill kit is available anywhere solvents are being used.
- If a spill occurs, evacuate personnel from the affected area.
- Follow Dalhousie University Laboratory Chemical Safety Manual, Section 5.2 for spill clean-up.
- Ensure that all residual hazardous waste from a spill is packaged in a suitable container.
- Label the hazardous waste container and ensure that it is disposed of as prescribed by the University.

#### **FIRST AID PROCEDURES**

- Ensure you read the first aid procedures to be followed for the solvent being used.
- Ensure that the items required to provide first aid treatment are available at the work site.
- If you are not close to an eye wash station ensure that portable eye wash units or other sources of water are capable of flushing for the time recommended in the solvent MSDS.
- Call Security at Extension 4109.