LABORATORY SAFETY GUIDELINE

Diethyl Ether (1,1'-oxybis-ethane; ethyl ether; ether) [CAS No. 60-29-7]

HAZARDS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Flammable</td>
<td>Ether is an extremely flammable liquid and vapor. The boiling point for ether is 34 °C (93.2 °F) and it readily volatilizes. Uninhibited ether can also form peroxides over time.</td>
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<tr>
<td>Eye Hazard</td>
<td>Ether is harmful if swallowed, may cause drowsiness and/or dizziness, and may cause eye irritation. It is critical that users limit their exposure to ether fumes.</td>
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</tbody>
</table>

PRECAUTIONS

Storage

- Ether needs to be stored in a flammable storage cabinet when not in use.
- Ether can form peroxides over time when exposed to oxygen and sunlight. Labs should follow the Peroxidizable Materials guideline found here. Please contact EH&S if you need labels.
- Ether should be stored in a cool place, preferably in an explosion-proof refrigerator. Under no circumstances can ether be stored in a refrigerator that is not explosion-proof.
- Ether cannot be stored in a cold room.

Before starting work:

- Review manufacturer’s Safety Data Sheet and additional chemical information at http://www.ehs.harvard.edu/safety-data-sheets-sds.
- Make sure you are familiar with general University emergency procedures in the Lab Emergency Response Guide.
- Identify the location of the nearest eyewash and shower and verify that they are accessible.

During work:

- AVOID INHALATION! Perform all operations in a certified chemical fume hood, wet bench or other approved ventilated area.
- AVOID CONTACT! Wear appropriate PPE including:
  - Lab coat and closed toed shoes.
  - Safety glasses or goggles.
  - Wear appropriate chemically protective gloves. Nitrile is fine for splash protection. If you anticipate immersion in ether use either Teflon or PVA gloves.
- Wash hands thoroughly each time gloves are removed.
- Keep all containers tightly closed when not in use.

After completing the work:

- Dispose of ether waste following Harvard University Hazardous Waste Procedures
  - Hazardous Waste Classification: Ignitable.
  - Ether can be collected with other ignitable solvents. Please consult with your LSA to review possible comingling of waste streams.
- Return container to storage area following Harvard University Laboratory Chemical Storage Guide
  - Storage Group FL [Flammable Liquids]
  - Store in original containers.
- Wash hands before leaving lab.
EMERGENCY PROCEDURES

First Aid

SKIN CONTACT
• Immediately remove all contaminated clothing, including footwear.
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

EYE CONTACT
• Using eyewash, flush eyes while hold eyelid open and away from exposed eye.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

INHALATION
• If you begin to feel drowsy or dizzy immediately move to fresh air.

INGESTION
• Do not induce vomiting.
• Call 911 on land line phone for medical assistance.
• Give water to rinse out mouth, then provide liquid slowly and as much as one can comfortably drink.
• Avoid giving milk or oils.

Spill Response

It is critical that you are familiar with Harvard’s Emergency Response Guide for Laboratories. You can review the guide by clicking on this link.

OUTSIDE FUME HOOD OR VENTILATED ENCLOSURE
• Alert people in the immediate area to evacuate to a safe distance.
• Call 911 if there is a medical emergency and/or fire.
• Attend to injured or contaminated person and remove from exposure, if it is safe to do so.
• Turn off ignition sources near spill, if this can be done safely.
• Increase exhaust to outside, if possible, by contacting building operations. If the spill is in a laboratory, fully open the sash of a fume hood.
• If the lab feels comfortable cleaning up the spill proceed per the guide, otherwise call operations for assistance (617) 495-5560 [HMS/HSDM (617) 432-1901].

INSIDE FUME HOOD OR VENTILATED ENCLOSURE (< 500 ml)
• Get a chemical spill kit and put on appropriate personal protective equipment including splash goggles, chemical resistant gloves, and a long-sleeved lab coat.
• If possible put the fume hood into emergency purge.
• If there is broken glass with spilled liquid, use tweezers to collect the glass.
• Collect debris in an appropriate container, tightly seal or close container, attach a Hazardous Waste Tag, and move the waste to your Satellite Accumulation Area.
• Fill out an online waste pickup request at the EHS website.