LABORATORY SAFETY GUIDELINE
Methyl tert-butyl ether [CAS No. 1634-04-4]

All users of Methyl tert-butyl ether (MTBE), aka tert-Butyl methyl ether, must review this document before use. This substance is a highly flammable liquid used for mass spectrometry procedures. Users should contact their EHS Laboratory Safety Advisor and department safety officer if they have questions before beginning work.

HAZARDS

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
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<tbody>
<tr>
<td>![Symbol]</td>
<td>Highly flammable liquid and vapor.</td>
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<tr>
<td>![Symbol]</td>
<td>Causes skin and eye irritation.</td>
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Methyl tert-butyl ether when mixed with air can cause a hazardous/flammable atmosphere. Always use this chemical in a fume hood. Use only non-sparking tools. Use explosion-proof electrical equipment and lighting as a preventive measure.

PRECAUTIONS

Before starting work:
- Determine if you can use a less hazardous substance in place of Methyl tert-butyl ether;
- Review manufacturer’s Safety Data Sheet and additional chemical information at ehs.harvard.edu/safety-data-sheets-sds;
- Ensure that a written experimental protocol including safety information is available;
- Be familiar with general University emergency procedures in the EHS Lab Emergency Response Guide;
- Order the most dilute solutions available that will meet experimental needs. Order only the quantity that you need;
- Identify the location of the nearest eyewash and shower and verify that they are accessible;
- Locate and verify that appropriate spill cleanup materials are available, including the following:
  - Spill-X-S Solvent Adsorbent (or comparable material)
- Ensure another person who knows emergency procedures is in the area.

During work:
- AVOID INHALATION! Perform all operations in a certified chemical fume hood or other approved ventilated enclosure. Sash lowered as much as possible. Always work at least 6 inches into the fume hood and behind the sash;
- AVOID CONTACT! Use appropriate personal protective equipment (PPE):
  - Wear a lab coat, closed-toed shoes, safety glass, and gloves;
  - Nitrile Gloves with at least a 0.4 mm thickness for splash protection
    - Always consult Safety Data Sheet to ensure proper glove selection
    - Gloves must be thoroughly inspected prior to each use. Do not use damaged gloves;
    - Change gloves whenever you suspect they have become contaminated;
    - Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact;
    - Wash hands and forearms thoroughly with soap and water each time gloves are removed;
- Use materials and containers appropriate for Methyl tert-butyl ether and remain aware of potential incompatibilities (e.g., oxidizing agents, strong acids)
- Keep all containers tightly closed when not in use and during transport.

After completing the work:
- Dispose of Methyl tert-butyl ether waste following Harvard University Hazardous Waste Procedures
  - Hazardous Waste Classification: Ignitable/Flammable
Please keep container in the fume hood and make sure that the cap is securely on container.

- Return container to storage area following Harvard University Laboratory Chemical Storage Guide
  - Storage Group: Flammable Liquids (FL);
  - Store in original containers or other appropriate containers;
  - Store primary container in designated and compatible secondary containers;
  - Store away from incompatibles;
- Wash hands and forearms thoroughly with soap and water before leaving the lab.

EMERGENCY PROCEDURES

First Aid

SKIN CONTACT
- Wash with plenty of tepid water for at least 15 minutes using the closest available sink, safety shower or drench hose. Remove any exposed clothing as well as any jewelry.
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

EYE CONTACT
- Using eyewash, flush eyes for 15 minutes while holding eyelids open;
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

INHALATION
- If breathed in, move person into fresh air;
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

INGESTION
- Do NOT induce vomiting;
- Never give anything by mouth to an unconscious person;
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

Spill Response

OUTSIDE FUME HOOD OR VENTILATED ENCLOSURE
- Alert others and evacuate to a safe distance and prevent entry.
- Contact the University Operations Center at (617) 495-5560 [HMS/HSDM (617) 432-1901]
- Remain in a safe location until EH&S or other response personnel arrive.

INSIDE FUME HOOD OR VENTILATED ENCLOSURE (< 500 ml)
- If trained and confident, you may assist in the clean-up effort of small amounts, wearing PPE described above and using appropriate spill supplies.
  - Use the Spill-X-S solvent absorbent and cover the spill area with an adequate amount of material to absorb the liquid.
  - Let sit appropriate amount of time according to the directions on the Spill-X-S container and the sweep up material with a broom and dustpan located in the chemical spill kit.
  - Collect debris in appropriate container and move to your Satellite Accumulation Area. Label with appropriately completed hazardous waste tag and request a waste pickup.
- Otherwise close the fume hood sash and await support.
- Contact the University Operations Center at (617) 495-5560 [HMS/HSDM (617) 432-1901] if you need support or technical assistance.