



**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

	Highly flammable liquid and vapor.
	Causes skin and eye irritation.

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.