

Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name Methyl-t-Butyl Ether, OmniSolv ® , For Gas Chromatography, Residue Analysis, HPLC, Spectrophotometry **Product Code** MX0826

Manufacturer EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.
Effective Date 3/1/2004
Print Date 5/13/2004

For More Information Call

856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym TERT-BUTYL METHYL ETHER

Material Uses Analytical reagent.

Chemical Family Aliphatic ether.

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
METHYL TERT-BUTYL ETHER	1634-04-4	100

Section 3. Hazards Identification

Physical State and Appearance Liquid.

Emergency Overview DANGER!
EXTREMELY FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
POSSIBLE CANCER HAZARD.
MAY CAUSE CANCER BASED ON ANIMAL DATA.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY FORM EXPLOSIVE PEROXIDES.

Routes of Entry Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

Skin Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Inhalation Hazardous in case of inhalation (lung irritant).

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Ingestion Ingestion can cause nausea and vomiting.

Potential Chronic Health Effects

Carcinogenic Effects Classified A3 (Proven for animal.) by ACGIH. Classified 3 by IARC

Additional information See Toxicological Information (section 11)

Medical Conditions
Aggravated by
Overexposure:

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Section 5. Fire Fighting Measures

Flammability of the Product

Product will burn.

Auto-ignition Temperature

Not available.

Flash Points

Closed cup: -10.1°C (13.8°F).

Flammable Limits

Not available.

Products of Combustion

These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances

Extremely flammable in presence of open flames, sparks and static discharge, of shocks, of heat, of oxidizing materials.

Explosion Hazards in Presence of Various Substances

Risks of explosion of the product in presence of static discharge:

Extremely flammable in presence of open flames, sparks and static discharge.
Extremely explosive in presence of open flames, sparks and static discharge.

Risks of explosion of the product in presence of mechanical impact:

Extremely flammable in presence of shocks.
Extremely explosive in presence of shocks.

Fire Fighting Media and Instructions

Flammable liquid, soluble or dispersed in water.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Protective Clothing (Fire)

Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards Vapor may travel considerable distance to source of ignition and flash back.

Special Remarks on Explosion Hazards May form explosive peroxides.

Section 6. Accidental Release Measures

Small Spill and Leak Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill and Leak Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Spill Kit Information The following EMD Chemicals Inc. SpillSolv[®] absorbent is recommended for this product: SX1330 Solvent Treatment Kit

Section 7. Handling and Storage

Handling Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Avoid breathing vapors or spray mists. Do not get in eyes, on skin, or on clothing. Do not ingest.

Storage Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

Eyes Splash goggles.

Body Lab coat.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Not applicable.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name

METHYL TERT-BUTYL ETHER

Exposure Limits

ACGIH (United States, 1995).

TWA: 144 mg/m³

TWA: 40 ppm

Section 9. Physical and Chemical Properties

Odor	Not available.
Color	Colorless.
Physical State and Appearance	Liquid.
Molecular Weight	88.17 g/mole
Molecular Formula	C5-H12-O
pH	Not available.
Boiling/Condensation Point	52.9°C (127.2°F)
Melting/Freezing Point	-184.95°C (-300.9°F)
Specific Gravity	0.758 (Water = 1)
Vapor Pressure	Not available.
Vapor Density	Not available.
Odor Threshold	Not available.
Evaporation Rate	8.14 compared to(n-BUTYL ACETATE=1)
LogK_{ow}	Not available.
Solubility	Partially soluble in water.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Extremely reactive or incompatible with oxidizing agents.
Rem/Incompatibility	Not available.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Methyl-t-Butyl Ether	KN5250000
Toxicity	Acute oral toxicity (LD ₅₀): 4000 mg/kg [Rat]. Acute toxicity of the vapor (LC ₅₀): 23576 ppm 4 hour(s) [Rat].	
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH. Classified 3 by IARC	

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Acute Effects on Humans	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Hazardous in case of inhalation (lung irritant).
Synergetic Products (Toxicologically)	Not available.
Irritancy	<u>Draize Test</u> : Not available.
Sensitization	Not available.
Carcinogenic Effects	Classified A3 (Proven for animal.) by ACGIH. Classified 3 by IARC
Toxicity to Reproductive System	Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effects on Chemical Substances (RTECS).
Teratogenic Effects	Not available.
Mutagenic Effects	Not available.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.

Section 13. Disposal Considerations

EPA Waste Number	D001
Treatment	Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

+ Section 14. Transport Information

DOT Classification	Proper Shipping Name: METHYL TERT-BUTYL ETHER Hazard Class: 3 UN number: UN2398 Packing Group: II RQ: 1000 lbs. (453.6 kg)
TDG Classification	Not available.
IMO/IMDG Classification	Proper Shipping Name: METHYL TERT-BUTYL ETHER Hazard Class: 3 UN number: UN2398 Packing Group: II RQ: 1000
ICAO/IATA Classification	Not available.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 4(a) final test rules: METHYL TERT-BUTYL ETHER
TSCA 8(b) inventory: METHYL TERT-BUTYL ETHER
TSCA 8(d) H and S data reporting: METHYL TERT-BUTYL ETHER: 1986
TSCA 12(b) one time export: METHYL TERT-BUTYL ETHER
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: METHYL TERT-BUTYL ETHER
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: METHYL TERT-BUTYL ETHER: Fire Hazard
SARA 313 toxic chemical notification and release reporting: METHYL TERT-BUTYL ETHER
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
Class D-2B: Material causing other toxic effects (TOXIC).

CEPA DSL: METHYL TERT-BUTYL ETHER

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations

EINECS METHYL TERT-BUTYL ETHER 216-653-1

DSCL (EEC) R11- Highly flammable.
R37/38- Irritating to respiratory system and skin.
R40- Possible risks of irreversible effects.
R41- Risk of serious damage to eyes.

International Lists Australia (NICNAS): METHYL TERT-BUTYL ETHER

Japan (MITI): METHYL TERT-BUTYL ETHER

Japan (MOL): METHYL TERT-BUTYL ETHER

Korea (TCCL): METHYL TERT-BUTYL ETHER

Philippines (RA6969): METHYL TERT-BUTYL ETHER

China: No products were found.

State Regulations

Pennsylvania RTK: METHYL TERT-BUTYL ETHER: (environmental hazard, generic environmental hazard)

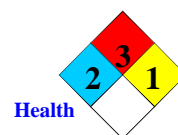
Massachusetts RTK: METHYL TERT-BUTYL ETHER

New Jersey: METHYL TERT-BUTYL ETHER

California prop. 65: No products were found.

Section 16. Other Information

**National Fire
Protection
Association
(U.S.A.)**



Fire Hazard

Reactivity

Specific Hazard

**Changed Since Last
Revision** **+**

Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.