

SAFETY DATA SHEET

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METHYL-TERT-BUTYL ETHER

SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

1.1 Product identifier:	
CAS Number:	1634-04-4
EC number:	216-653-1
1.2 SYNONYMS:	• MTBE • Methyl tertiary-butyl ether • 2-Methoxy-2-methylpropane • Tertiary butyl methyl ether • Methyl tert-butyl ether

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 Flammable (Category 2) Skin irritation(Category 2)
Hazard Pictograms:	
Signal Word:	Danger
Hazard statements:	H225: Highly flammable liquid and vapour H315: Causes skin irritation
Precautionary Statements:	P210: Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P261: Avoid breathing fumes or vapors.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink, or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves, protective clothing, and eye protection.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P312: Call a poison center or doctor if you feel unwell.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P370+P378: In case of fire: Use foam, dry chemical, or carbon dioxide for extinction.
P403: Store in a well-ventilated place.
P404: Store in a closed container.
P405: Store locked up.

	P501: Dispose of contents/container in accordance with local/regional/national/international regulations.
2.3 Other hazards:	
Inhalation:	can cause respiratory irritation, headaches, dizziness, nausea, and in severe cases, central nervous system effects.
Ingestion:	can lead to nausea, vomiting, abdominal pain, dizziness, and in severe cases, central nervous system depression and respiratory distress.
Skin Contact:	can cause irritation, redness, dryness, and, with prolonged exposure, may lead to dermatitis.
Eye contact:	can cause irritation, redness, tearing, and a burning sensation.
Chronic Exposure:	can lead to long-term health effects such as liver and kidney damage, nervous system disorders, and potential carcinogenic effects.
Aggravation of pre-existing conditions:	may aggravate pre-existing conditions such as respiratory disorders (e.g., asthma or bronchitis), liver or kidney disease, and nervous system disorders.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 1634-04-4 METHYL—TERT-BUTYL ETHER.
Identification number(s):	EC number: 216-653-1

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. In the event of unconsciousness, apnea or cardiac arrest (no Pulse) apply cardiopulmonary resuscitation. Consult a physician.
After skin contact:	Remove contaminated clothing immediately. Wash with soap and water. Consult a physician.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. consult a physician.
After swallowing:	Rinse mouth with water. Immediately after ingestion. Never give anything by mouth to an unconscious person. Do not induce vomiting. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed:	important symptoms and effects include acute respiratory irritation, headaches, dizziness, nausea, and in severe cases, central nervous system depression, with potential liver and kidney damage from chronic exposure.
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	Carbon dioxide. Water spray. Alcohol-resistant foam.
5.2 Special hazards arising from the substance or mixture:	include its flammability, as it is highly combustible, and the potential for the formation of explosive vapors in air, as well as its environmental hazards due to groundwater contamination and its toxicity to aquatic life.
5.3 Advice for firefighters:	Wear fully protective suit, safety glasses and respiratory device. Cool tanks/drums with water spray/remove them into safety.
5.4 further information:	no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Seek medical attention.
6.2 Environmental precautions:	Do not enter this chemical into drains.
6.3 Methods and material for containment and cleaning up:	Take up spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:	For use in are with adequate ventilation. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material Do not use in confined spaces. Electrostatic discharge protection. Minimize dust generation and accumulation. Avoid ingestion and inhalation.
7.2 Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Store in a dry and dark area.
Requirements to be met by storerooms and receptacles:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
7.3 Specific end uses:	no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended.
8.2 Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.

General protective and hygienic measures:	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.
Protection of hands:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws. Wash and dry hands.
	Eye protection: Required
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
General Information	
Appearance: Form:	Liquid.
Colour:	Colourless
Odour:	Terpene like odour
pH-value:	Not determined
Melting point/Melting range:	-108.6°C
Boiling point/Boiling range:	55.3°C
Flammability (solid, gaseous):	Flammable
Ignition temperature:	460°C
Decomposition temperature:	Not determined
Self-igniting:	Not applicable
Flash point:	-28°C
Danger of explosion:	Not applicable
Explosion limits: Lower:	1.6%
Explosion limits: Upper:	8.4%
Vapour pressure:	33000 Pa

Density at 20 °C:	0.74 g/cm ³
Relative density:	0.74
Vapour density:	Not determined
Evaporation rate:	Not determined
Solubility in / Miscibility with- water at 20 °C:	41850 mg/L
Partition coefficient:(n- octanol/water)	1.06
Viscosity:	0.464 mm ² /s

SECTION 10: Stability and reactivity

10.1 Reactivity	No reaction under storage conditions.
10.2 Chemical stability	This chemical is stable under storage conditions.
10.3 Possibility of hazardous reactions	None
10.4 Conditions to avoid	Incompatible materials, sparks, flame, heat.
10.5 Incompatible materials	Contact with strong acids can decompose this material and generate extremely flammable isobutylene.
10.6 Hazardous decomposition products	carbon monoxide, carbon dioxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	LD50 (Oral, Rat): 2000 mg/kg LD50 (Dermal, Rabbit): 2000 mg/kg LC50 (Inhalation Rat): 85 mg/l (4hr)
Skin corrosion/Irritation:	Causes serious skin irritation.
Serious eye damage/irritation:	No data available
Respiratory damage/irritation:	No data available

Ingestion:	No data available
Germ cell mutagenicity:	No data available
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Specific target organ toxicity - single exposure:	No data available
Specific target organ toxicity - repeated exposure:	No data available
Aspiration hazard:	No data available
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Biodegradability:	low biodegradable

SECTION 12: Ecological information

12.1 Toxicity Aquatic toxicity:	LC50(fish): 15 mg/l EC50(daphnia): 22 mg/l EC50(algae): no data available
12.2 Persistence and degradability:	Low biodegradable and persistent
12.3 Bioaccumulative potential:	Not bioaccumulative
12.4 Mobility in soil:	High mobility
12.5 Other adverse effects:	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	dispose of in accordance with local hazardous waste regulations
Recommended cleansing agents:	Water, Isopropyl alcohol, Water and detergent, Chemical neutralizers, Commercial cleaning agents.

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	2397
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14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	Methyl Tertiary Butyl Ether
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	3
14.4 Packing group · ADR, IMDG, IATA:	2
14.5 Environmental hazards:	Yes, harmful for marine life
14.6 Special precautions for user:	Handle responsibly.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is classified in listed substance as flammable liquid.
Named dangerous substances:	This substance is listed in the annex 1 to the directive.
15.2 Chemical safety assessment:	Chemical assessment has not been carried out.

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.