

### SECTION 1: Identification

#### 1.1. Identification

Product form	: Substance
Trade name	: Methyl tert-Butyl Ether
Chemical name	: Methyl tert-Butyl Ether
CAS-No.	: 1634-04-4
Product code	: HP-040900-FP
Formula	: C <sub>5</sub> H <sub>12</sub> O
Synonyms	: tert-Butyl methyl ether / Ether, methyl tert-butyl / Ether, tert-butyl methyl / 2-Methoxy-2-methylpropane / Propane, 2-methoxy-2-methyl- / Methyl tertiary-butyl ether / MTBE / tertiary-Butyl methyl ether / 2-Methyl-2-methoxypropane / Methyl t-butyl ether / Methyl-tert-butyl ether / T-BUTYL METHYL ETHER

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Octane booster for gasolines; manufacture of isobutene; extraction solvent, etc.

#### 1.3. Supplier

Monument Chemical  
16717 Jacintoport Blvd.  
Houston, TX 77015 - USA  
T (281) 452-5951 - F (281) 457-1127  
[sds@monumentchemical.com](mailto:sds@monumentchemical.com) - [www.monumentchemical.com](http://www.monumentchemical.com)

#### 1.4. Emergency telephone number

Emergency number : 24 HR CHEMTREC: 1-800-424-9300 (International +1 703-741-5970); 24 HR Emergency Assistance: 1-832-376-2026

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture


##### GHS US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapor
Skin corrosion/irritation Category 2	H315	Causes skin irritation

Full text of H- and EUH-statements: see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US)	:	
Signal word (GHS US)	:	Danger
Hazard statements (GHS US)	:	H225 - Highly flammable liquid and vapor H315 - Causes skin irritation
Precautionary statements (GHS US)	:	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, lighting, ventilating equipment.

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P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P264 - Wash hands thoroughly after handling.  
P280 - Wear eye protection, protective clothing, protective gloves.  
P302+P352 - If on skin: Wash with plenty of water.  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P321 - Specific treatment (see a doctor on this label).  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO<sub>2</sub>), dry extinguishing powder, Water spray to extinguish.  
P403+P235 - Store in a well-ventilated place. Keep cool.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name	Product identifier	%
Methyl tert-Butyl Ether (Main constituent)	CAS-No.: 1634-04-4	100

Full text of hazard classes, H- and EUH-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).  
First-aid measures after inhalation : Allow affected person to breathe fresh air. Allow the victim to rest.  
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water, Get medical advice/attention. Get medical advice/attention. Specific treatment (see Consult a doctor/medical service on this label).  
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.  
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

### 4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.  
Symptoms/effects after skin contact : Causes skin irritation.

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### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.  
Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Highly flammable liquid and vapor.  
Explosion hazard : May form flammable/explosive vapor-air mixture.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

#### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.  
Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.  
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools.  
Hygiene measures : Wash hands thoroughly after handling.

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### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting, Ventilation equipment.
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Ignition sources, Incompatible materials. Keep in fireproof place. Keep container tightly closed.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Methyl tert-Butyl Ether (1634-04-4)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Methyl tert-butyl ether
ACGIH OEL TWA [ppm]	50 ppm
Remark (ACGIH)	URT irr; kidney dam
Regulatory reference	ACGIH 2021

### 8.2. Appropriate engineering controls

No additional information available

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

<b>Hand protection:</b>
Wear protective gloves.
<b>Eye protection:</b>
Chemical goggles or safety glasses
<b>Skin and body protection:</b>
Wear suitable protective clothing
<b>Respiratory protection:</b>
Wear appropriate mask

#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, colorless liquid.
Color	: Colorless clear
Odor	: characteristic ether-like

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Odor threshold	: No data available
pH	: No data available
Melting point	: -108.6 °C ; -163.5 °F
Freezing point	: No data available
Boiling point	: 55.2 °C ; 131.0 °F
Flash point	: -33 °C ; -27.4 °F (closed cup)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 268 hPa (at 20 °C)
Relative vapor density at 20 °C	: 3
Relative density	: 0.74
Density	: 0.74 g/cm <sup>3</sup> (at 20 °C)
Molecular mass	: 88.2 g/mol
Solubility	: Water: 50 g/l (at 25 °C)
Partition coefficient n-octanol/water (Log Pow)	: 1.06 (at 23 °C)
Auto-ignition temperature	: 375 °C ; 705.2 °F
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 1.5 – 8.5 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

### 10.5. Incompatible materials

Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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Methyl tert-Butyl Ether (1634-04-4)	
LD50 oral rat	2963 mg/kg
LC50 Inhalation - Rat	85 mg/l/4h
ATE US (oral)	2963 mg/kg body weight
ATE US (vapors)	85 mg/l/4h
ATE US (dust, mist)	85 mg/l/4h
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects after skin contact	: Causes skin irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Methyl tert-Butyl Ether (1634-04-4)	
LC50 - Fish [1]	672 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	542 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	929 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

### 12.2. Persistence and degradability

Methyl tert-Butyl Ether (1634-04-4)	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

Methyl tert-Butyl Ether (1634-04-4)	
BCF - Fish [1]	(no bioaccumulation expected)
Partition coefficient n-octanol/water (Log Pow)	1.06 (at 23 °C)
Bioaccumulative potential	Not established.

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other information : Avoid release to the environment.

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### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	: Avoid release to the environment.

### SECTION 14: Transport information

In accordance with Department of Transport / IMDG / IATA

#### 14.1. UN number

DOT NA No	: UN2398
UN-No. (IMDG)	: 2398
UN-No. (IATA)	: 2398

#### 14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Methyl tert-butyl ether
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IMDG)	: METHYL tert-BUTYL ETHER
Proper Shipping Name (IATA)	: Methyl tert-butyl ether
Transport document description (DOT)	: UN2398 Methyl tert-butyl ether, 3, II
Transport document description (IMDG)	: UN 2398 METHYL tert-BUTYL ETHER, 3, II (< -18°C c.c.)
Transport document description (IATA)	: UN 2398 Methyl tert-butyl ether, 3, II

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT)	: 3
Hazard labels (DOT)	: 3



##### IMDG

Transport hazard class(es) (IMDG)	: 3
Hazard labels (IMDG)	: 3



##### IATA

Transport hazard class(es) (IATA)	: 3
Hazard labels (IATA)	: 3



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### 14.4. Packing group

Packing group (DOT)	: II
Packing group (IMDG)	: II
Packing group (IATA)	: II

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### DOT

UN-No.(DOT)	: UN2398
DOT Special Provisions (49 CFR 172.102)	: IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
DOT Vessel Stowage Location	: E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

#### IMDG

Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP1
EmS-No. (Fire)	: F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage)	: S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS
Stowage category (IMDG)	: E
Flash point (IMDG)	: below -18°C c.c.

#### IATA

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y341
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 353
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
ERG code (IATA)	: 3L

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable



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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Methyl tert-Butyl Ether (1634-04-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313  
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	1000 lb
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All components of this product are listed as Active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Methyl tert-Butyl Ether	CAS-No. 1634-04-4	100%
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#### 15.2. International regulations

##### CANADA

##### Methyl tert-Butyl Ether (1634-04-4)

Listed on the Canadian DSL (Domestic Substances List)

##### EU-Regulations

##### Methyl tert-Butyl Ether (1634-04-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### National regulations

##### Methyl tert-Butyl Ether (1634-04-4)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on KECL/KECI (Korean Existing Chemicals Inventory)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on the TCSI (Taiwan Chemical Substance Inventory)  
Listed on the NCI (National Chemicals Inventory)

#### 15.3. US State regulations

##### Methyl tert-Butyl Ether (1634-04-4)

State or local regulations	U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
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California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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### SECTION 16: Other information

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Revision date : 05/07/2021  
Other information : None.

Full text of H-phrases	
H225	Highly flammable liquid and vapor
H315	Causes skin irritation

Safety Data Sheet (SDS), USA

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