

Methyl t-Butyl Ether**242-1L**

Version 0.0

Revision Date 02/21/2018

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SECTION 1. IDENTIFICATION

Product name : Methyl t-Butyl Ether

Number : 000000022851

Product Use Description : Solvent

Manufacturer or supplier's details : Manufactured by:
Honeywell International Inc.
1953 South Harvey Street
Muskegon, MI 49442
USA

Distributed by:
VWR International
2360 Argentia Road
Mississauga, Ontario L5N 5Z7
CANADA

For more information call : 1-800-932-5000
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**
: **Transportation (CHEMTREC): 1-800-424-9300 or**
: **+1-703-527-3887**
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid, clear

Color : colourless

Odor : pungent organic

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Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 2
Skin irritation, Category 2

GHS Label elements, including precautionary statements

Symbol(s) :



Signal word : Danger

Hazard statements : Highly flammable liquid and vapour.
Causes skin irritation.

Precautionary statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash skin thoroughly after handling.
Wear protective gloves/ eye protection/ face protection.

Response:

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep cool.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity

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ACGIH: Methyl t-butyl ether 1634-04-4
A3: Confirmed animal carcinogen

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₅H₁₂O
Chemical nature : Substance

Chemical name	CAS-No.	Concentration
Methyl t-butyl ether	1634-04-4	100.00 %

SECTION 4. FIRST AID MEASURES

Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.

Ingestion : Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Call a physician immediately. Never give anything by mouth to an unconscious person.

Notes to physician

Indication of immediate medical attention and special treatment needed, if necessary : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO₂)

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		Dry chemical Foam Cool closed containers exposed to fire with water spray.
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	Extremely flammable. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO ₂)
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Wear personal protective equipment. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Do not swallow. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Do not allow run-off from fire fighting to enter drains or water courses.
Methods and materials for containment and cleaning up	:	Ventilate the area. No sparking tools should be used. Use explosion-proof equipment. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

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SECTION 7. HANDLING AND STORAGE**Handling**

Precautions for safe handling : Wear personal protective equipment.
Use only in well-ventilated areas.
Keep container tightly closed.
Do not smoke.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.
Take precautionary measures against static discharges.
Ensure all equipment is electrically grounded before beginning transfer operations.
Use explosion-proof equipment.
Keep product and empty container away from heat and sources of ignition.
No sparking tools should be used.
No smoking.

Storage

Conditions for safe storage, including any incompatibilities : Store in area designed for storage of flammable liquids. Protect from physical damage.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep away from heat and sources of ignition.
Keep away from direct sunlight.
Store away from incompatible substances.
Container hazardous when empty.
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures : Use with local exhaust ventilation.

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- Prevent vapour buildup by providing adequate ventilation during and after use.
- Eye protection : Do not wear contact lenses.
Wear as appropriate:
Safety glasses with side-shields
If splashes are likely to occur, wear:
Goggles or face shield, giving complete protection to eyes
- Hand protection : Solvent-resistant gloves
Gloves must be inspected prior to use.
Replace when worn.
- Skin and body protection : Wear as appropriate:
Solvent-resistant apron
Flame retardant antistatic protective clothing.
If splashes are likely to occur, wear:
Protective suit
- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
Use NIOSH approved respiratory protection.
- Hygiene measures : When using, do not eat, drink or smoke.
Wash hands before breaks and immediately after handling the product.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
Methyl t-butyl ether	1634-04-4	TWA : Time weighted average	180 mg/m3 (50 ppm)	07 2009	CAD AB OEL:Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

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Methyl t-butyl ether	1634-04-4	TWA : Time weighted average	(50 ppm)	07 2007	CAD BC OEL:Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)
Methyl t-butyl ether	1634-04-4	TWA : Time weighted average	(50 ppm)	03 2011	CAD MB OEL:Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)
Methyl t-butyl ether	1634-04-4	TWA : Time weighted average	(40 ppm)	12 2007	CAD ON OEL:Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)
Methyl t-butyl ether	1634-04-4	8 HR ACL : 8 hour average contamin ation limit:	(50 ppm)	05 2009	CAD SK OEL:Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

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Methyl t-butyl ether	1634-04-4	15 MIN ACL : 15 minute average contamin ation limit:	(75 ppm)	05 2009	CAD SK OEL:Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)
Methyl t-butyl ether	1634-04-4	TWA : Time weighted average	144 mg/m3 (40 ppm)	12 2008	OEL (QUE):Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid, clear
Color	: colourless
Odor	: pungent organic
Odor threshold	: Note: no data available
pH	: Note: Not applicable
Melting point/range	: -108.6 °C
Boiling point/boiling range	: 55.2 °C
Flash point	: -17 °F (-27 °C) Method: closed cup
Evaporation rate	: < 1 Method: Compared to Ether (anhydrous).

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Lower explosion limit	: 2.5 %(V)
Upper explosion limit	: 15.1 %(V)
Vapor pressure	: 320 hPa at 20 °C(68 °F)
Vapor density	: 3.1 Note: (Air = 1.0)
Density	: 0.74 g/cm ³ at 20 °C
Water solubility	: ca. 50 g/l
Partition coefficient: n-octanol/water	: Note: no data available
Ignition temperature	: 193 °C
Decomposition temperature	: Note: no data available
Viscosity, dynamic	: Note: no data available
Viscosity, kinematic	: Note: no data available
Molecular weight	: 88.14 g/mol

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Hazardous polymerization does not occur.
Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.

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Incompatible materials : Strong oxidizing agents
Strong acids

Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50: 3,870 mg/kg
Species: Rat

Acute inhalation toxicity : LC50: > 85 mg/l
Exposure time: 4 h
Species: Rat

Acute dermal toxicity : LD50: > 10,000 mg/kg
Species: Rabbit

Skin irritation : Species: Rabbit
Result: Irritating to skin.

Eye irritation : Species: Rabbit
Result: slight irritation

Further information : Note: Confirmed animal carcinogen with unknown relevance to humans.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : LC50: 672 mg/l

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Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates : LC50: 651 mg/l
Exposure time: 48 h
Species: Daphnia (water flea)

Toxicity to bacteria : EC50: 8.23 mg/l
Exposure time: 5 min
Species: Photobacterium phosphoreum

: EC50: 9.67 mg/l
Exposure time: 15 min
Species: Photobacterium phosphoreum

: EC50: 11.4 mg/l
Exposure time: 30 min
Species: Photobacterium phosphoreum

Further information on ecology

Additional ecological information : Harmful to aquatic organisms.
Accumulation in aquatic organisms is unlikely.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

TDG UN/ID No. : UN 2398
Proper shipping name : METHYL tert-BUTYL ETHER
Class : 3
Packing group : II
Hazard Labels : 3

IATA UN/ID No. : UN 2398
Description of the goods : METHYL tert-BUTYL ETHER
Class : 3

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Packaging group : II
 Hazard Labels : 3
 Packing instruction (cargo aircraft) : 364
 Packing instruction (passenger aircraft) : 353
 Packing instruction (passenger aircraft) : Y341

IMDG UN/ID No. : UN 2398
 Description of the goods : METHYL tert-BUTYL ETHER
 Class : 3
 Packaging group : II
 Hazard Labels : 3
 EmS Number : F-E, S-D
 Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

Inventories

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI) : On the inventory, or in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

New Zealand. Inventory of : On the inventory, or in compliance with the inventory

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Chemicals (NZIoC), as published by ERMA New Zealand

National regulatory information

US. EPA CERCLA Hazardous Substances (40 CFR 302) : The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 1000 lbs
: Methyl t-butyl ether 1634-04-4

WHMIS

WHMIS Ingredient Disclosure List IDL: No component is listed on the WHMIS ingredients disclosure list.

NPRI

Components : Methyl t-butyl ether 1634-04-4

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 2*	1
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous

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versions.

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group