

**Methyl-t-Butyl Ether (242)**

000000011395 Version 1.0 0

Revision Date 11/26/2012

Print Date 11/26/2012

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****Product information**

Trade name : Methyl-t-Butyl Ether (242)

Number : 000000011395

Use of the Substance/Mixture : Solvent

Importer : Chem-Supply Pty Ltd  
38-50 Bedford Street  
GILLMAN SA 5013

For further information,  
please contact: : Phone: (08) 8440 2000  
(Monday-Friday, 9:00am-5:00pm)  
Fax: (08) 8440 2001

**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**  
**In Australia: +(61)-290372994**  
(24 hours/day, 7 days/week)

**2. HAZARDS IDENTIFICATION****Hazardous classification**

Classified as dangerous goods according to the ADG Code  
Classified as hazardous according to criteria of NOHSC.

**R-phrase(s)**

Highly flammable.  
Irritating to skin.

**S-phrase(s)**

Keep out of the reach of children.  
Keep container in a well-ventilated place.  
Keep away from sources of ignition - No smoking.  
Avoid contact with skin.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C5H12O

Chemical nature : Substance

CAS-No. : 1634-04-4

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**Hazardous components**

Chemical Name	CAS-No.	Concentration
tert-Butyl methyl ether	1634-04-4	<= 100%

**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 : Treat symptomatically.

**5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
 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 : Highly 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<sub>2</sub>)
- Special protective equipment : Wear self-contained breathing apparatus and protective suit.

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for firefighters  
Further information : HAZCHEM CODE: 3YE

**6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions : 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 vapors, 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 for 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).

**7. HANDLING AND STORAGE****Handling**

- Advice on safe handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Do not smoke.  
Do not swallow.  
Avoid breathing vapors, 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**

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Requirements for storage areas and containers : 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.

Materials to avoid : Strong oxidizing agents, Strong acids

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Methyl t-butyl ether	1634-04-4	STEL : Short Term Exposure Limit (STEL):	75 ppm 275 mg/m <sup>3</sup>	08 2005	AU OEL: Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)
		TWA : Time Weighted Average (TWA):	25 ppm 92 mg/m <sup>3</sup>	08 2005	AU OEL: Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)

**Engineering measures**

Use with local exhaust ventilation.  
Prevent vapor buildup by providing adequate ventilation during and after use.

**Personal protective equipment**

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.

Hand protection : Solvent-resistant gloves  
Gloves must be inspected prior to use.  
Replace when worn.

Eye protection : Do not wear contact lenses.

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	Wear as appropriate: Safety glasses with side-shields If splashes are likely to occur, wear: Goggles or face shield, giving complete protection to eyes
Skin and body protection	: Wear as appropriate: Solvent-resistant apron Flame retardant antistatic protective clothing If splashes are likely to occur, wear: Protective suit
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 vapors, mist or gas. Avoid contact with skin, eyes and clothing.
Protective measures	: Ensure that eyewash stations and safety showers are close to the workstation location.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid, clear
Colour	: colourless
Odour	: pungent organic
pH	: Note: not applicable
Melting point/freezing point	: -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).
Lower explosion limit	: 2 %(V)
Upper explosion limit	: 15.1 %(V)
Vapour pressure	: 320 hPa

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	at 20 °C(68 °F)
Vapour density	: 3.1 Note: (Air = 1.0)
Density	: 0.74 g/cm <sup>3</sup> at 20 °C
Water solubility	: ca. 50 g/l
Ignition temperature	: 193 °C
Molecular Weight	: 88.14 g/mol

**10. STABILITY AND REACTIVITY**

Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.
Incompatible materials to avoid	: Strong oxidizing agents Strong acids
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO <sub>2</sub> )

**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

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Species: rabbit

**Further information**

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

**12. Ecological information****Toxicity**Toxicity to fish : LC50: 672 mg/l  
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: DaphniaToxicity 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**Other adverse effects**Additional ecological information : Harmful to aquatic organisms.  
Accumulation in aquatic organisms is unlikely.**13. DISPOSAL CONSIDERATIONS**

Product : In accordance with local and national regulations.

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**14. TRANSPORT INFORMATION**
**ADR**

UN/ID No. : UN 2398  
 Description of the goods : METHYL tert-BUTYL ETHER  
 Class : 3  
 Packing group : II  
 Classification Code : F1  
 Hazard identification No : 33  
 Labels : 3

**ADG\_ROAD**

UN/ID No. : UN 2398  
 Description of the goods : METHYL tert-BUTYL ETHER  
 Class : 3  
 Packing group : II  
 Labels : 3

**IATA**

UN/ID No. : UN 2398  
 Description of the goods : Methyl tert-butyl ether  
 Class : 3  
 Packing group : II  
 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  
 Packing group : II  
 Labels : 3  
 EmS Number 1 : F-E  
 EmS Number 2 : S-D

Marine pollutant : no

HAZCHEM CODE: 3YE

**15. REGULATORY INFORMATION**

Symbol(s) : F Highly flammable  
 : Xi Irritant

R-phrase(s) : R11 Highly flammable.  
 : R38 Irritating to skin.



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S-phrase(s) : S 2 Keep out of the reach of children.  
 S 9 Keep container in a well-ventilated place.  
 S16 Keep away from sources of ignition - No  
 smoking.  
 S24 Avoid contact with skin.

Further information : Classified as dangerous goods according to the ADG Code  
 Classified as hazardous according to criteria of NOHSC.

**National regulatory information**

Standard for the Uniform : No poison schedule number allocated  
 Scheduling of Medicines and  
 Poisons

**Other international regulations**
**Notification status**

US. Toxic Substances : On TSCA Inventory  
 Control Act

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

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

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

Japan. Industrial Safety & : On the inventory, or in compliance with the inventory  
 Health Law (ISHL) List

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

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

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

New Zealand. Inventory of : On the inventory, or in compliance with the inventory  
 Chemicals (NZIoC), as  
 published by ERMA New  
 Zealand

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**16. OTHER INFORMATION****Sources of key data used to compile the Safety Data Sheet:**

1. National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)]
2. Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)]
3. List of Designated Hazardous Substances [NOHSC:10005(1999)]
4. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]
5. Australian Dangerous Goods Code, No. 6 [National Road Transport Commission]
6. Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP), No. 19 [NDPSC: 2004]
7. National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]

**Further information**

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

Prepared by: Honeywell Performance Materials and Technologies Product Stewardship Group

End of Safety Data Sheet