


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

<b>1.1 Product identifier</b>	
Trade name	<b><u>tert-Butyl methyl ether</u></b>
Stock number:	L14030
CAS Number:	1634-04-4
EC number:	216-653-1
Index number:	603-181-00-X
<b>1.2 Relevant identified uses of the substance or mixture and uses advised against.</b>	No further relevant information available.
Identified use:	SU24 Scientific research and development
<b>1.3 Details of the supplier of the safety data sheet</b>	
Manufacturer/Supplier:	Alfa Aesar GmbH & Co.KG A Johnson Matthey Company Zeppelinstr. 7b 76185 Karlsruhe / Germany Tel: +49 (0) 721 84007 280 Fax: +49 (0) 721 84007 300 Email: tech@alfa.com www.alfa.com
Informing department:	Product safety Tel + +049 (0) 7275 988687-0
<b>1.4 Emergency telephone number:</b>	Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number) Poison Information Center Mainz www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**


Classification according to Regulation (EC) No 1272/2008

 GHS02 flame

Flam. Liq. 2, H225 Highly flammable liquid and vapour.

 GHS07

Skin Irrit. 2, H315 Causes skin irritation.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Xi; Irritant

R38: Irritating to skin.

 F; Highly flammable

R11: Highly flammable.

**Information concerning particular hazards for human and environment:**

Not applicable

**Other hazards that do not result in classification**

No information known.

**2.2 Label elements**

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Hazard statements

Precautionary statements

The substance is classified and labelled according to the CLP regulation.

GHS02, GHS07

Danger

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

P210

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241

Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P302+P352

IF ON SKIN: Wash with plenty of soap and water.

P403+P235

Store in a well-ventilated place. Keep cool.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

**2.3 Other hazards**

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

CAS# Designation: 1634-04-4 tert-Butyl methyl ether

Identification number(s):

EC number:

216-653-1

Index number:

603-181-00-X

**SECTION 4: First aid measures****4.1 Description of first aid measures**

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.  
Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.

After swallowing

Rinse opened eye for several minutes under running water. Then consult doctor.

**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing agents

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

**5.2 Special hazards arising from the substance or mixture**If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide**5.3 Advice for firefighters**

Protective equipment:

Wear self-contained breathing apparatus.

Trade name **tert-Butyl methyl ether**

(Contd. of page 1)

Wear full protective suit.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Keep away from ignition sources  
Do not allow product to reach sewage system or water bodies.  
Do not allow to enter the ground/soil.

**6.2 Environmental precautions:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.

**6.3 Methods and material for containment and cleaning up:**

Keep away from ignition sources.

**Prevention of secondary hazards:**

See Section 7 for information on safe handling  
See section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

**6.4 Reference to other sections****SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.

**Information about protection against explosions and fires:**

Protect against electrostatic charges.  
Fumes can combine with air to form an explosive mixture.

**7.2 Conditions for safe storage, including any incompatibilities****Storage Requirements to be met by storerooms and containers:**

Store in cool location.

**Information about storage in one common storage facility:**

Store away from oxidizing agents.

**Further information about storage conditions:**

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.

**7.3 Specific end use(s)**

No further relevant information available.

**SECTION 8: Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**8.1 Control parameters****Components with critical values that require monitoring at the workplace:****1634-04-4 tert-Butyl methyl ether (100,0%)**

AGW (Germany) 180 mg/m<sup>3</sup>, 50 ppm  
1,5(l);DFG, EU, Y

TLV (USA) 180 mg/m<sup>3</sup>, 50 ppm

**Additional information:**

No data

**8.2 Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Avoid contact with the skin.

**Breathing equipment:**

Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.  
Use breathing protection with high concentrations.  
Use breathing protection in case of insufficient ventilation.

**Protection of hands:**

Check protective gloves prior to each use for their proper condition.  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Material of gloves**

Impervious gloves

**Penetration time of glove material**

Not determined

**Eye protection:**

Safety glasses

**Body protection:**

Face protection  
Protective work clothing.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Liquid

**Form:**

Colourless

**Colour:**

Mild

**Smell:**

Not determined.

**Odour threshold:**

Not determined.

**pH-value:**

Not determined.

**Change in condition****Melting point/Melting range:**

-109 °C

**Boiling point/Boiling range:**

55-56 °C

**Sublimation temperature / start:**

Not determined

**Flash point:**

-25 °C

**Inflammability (solid, gaseous)**

Not determined.

**Ignition temperature:**

192 °C

**Decomposition temperature:**

Not determined

**Self-inflammability:**

Not determined.

**Critical values for explosion:**

Lower: 1,6 Vol %

**Upper:**

15,1 Vol %

**Steam pressure at 20 °C:**

319 hPa

**Density at 20 °C**

0,74 g/cm<sup>3</sup>

**Relative density**

Not determined.

(Contd. on page 3)  
DE/E

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Revision: 09.07.2013

Printing date 11.07.2013

Trade name **tert-Butyl methyl ether**

(Contd. of page 2)

Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with Water:	Not determined
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	Not determined.
dynamic:	Not determined.
kinematic:	Not determined.
9.2 Other information	No further relevant information available.

**SECTION 10: Stability and reactivity**

10.1 Reactivity	No information known.
10.2 Chemical stability	Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:	No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions	Reacts with strong oxidizing agents
10.5 Incompatible materials:	Oxidizing agents
10.6 Hazardous decomposition products:	Carbon monoxide and carbon dioxide

**SECTION 11: Toxicological information**

11.1 Information on toxicological effects	The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.
Acute toxicity:	

**LD/LC50 values that are relevant for classification:**

Oral LD50 4000 mg/kg (rat)

Skin irritation or corrosion:	Causes skin irritation.
Eye irritation or corrosion:	May cause irritation
Sensitization:	No sensitizing effect known.
Germ cell mutagenicity:	The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.
Carcinogenicity:	ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure. IARC-3: Not classifiable as to carcinogenicity to humans. The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.
Reproductive toxicity:	The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.
Specific target organ system toxicity - repeated exposure:	No effects known.
Specific target organ system toxicity - single exposure:	No effects known.
Aspiration hazard:	No effects known.
Experience with humans:	The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for components in this product.
Additional toxicological information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.



**SECTION 12: Ecological information**

12.1 Toxicity	No further relevant information available.
Aquatic toxicity:	
12.2 Persistence and degradability	
12.3 Bioaccumulative potential	
12.4 Mobility in soil	No further relevant information available.
Additional ecological information:	Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Avoid transfer into the environment.
General notes:	
12.5 Results of PBT and vPvB assessment	Not applicable.
PBT:	
vPvB:	
12.6 Other adverse effects	No further relevant information available.

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods	Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.
Recommendation	
Uncleaned packagings:	Disposal must be made according to official regulations.
Recommendation:	

**SECTION 14: Transport information**

UN-Number	UN2350
ADR, IMDG, IATA	
14.2 UN proper shipping name	2350 BUTYL METHYL ETHER BUTYL METHYL ETHER
ADR	
IMDG, IATA	
14.3 Transport hazard class(es)	3 (F1) Flammable liquids. 3
ADR	
	
Class	3 (F1) Flammable liquids. 3
Label	
IMDG, IATA	
	
Class	3 Flammable liquids.

(Contd. on page 4)  
DE/E

**Safety data sheet**  
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Revision: 09.07.2013

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Trade name **tert-Butyl methyl ether**

(Contd. of page 3)

<b>Label</b>	3
<b>Packing group</b> ADR, IMDG, IATA	II
<b>14.5 Environmental hazards:</b>	Not applicable.
<b>14.6 Special precautions for user</b> <b>Kemler Number:</b>	Warning: Flammable liquids. 33
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>ADR</b>	
<b>Exempted quantities (EQ):</b>	E2
<b>Limited quantities (LQ)</b>	1L
<b>Transport category</b>	2
<b>Tunnel restriction code</b>	D/E
<b>UN "Model Regulation":</b>	UN2350, BUTYL METHYL ETHER, 3, II

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australian Inventory of Chemical****Substances**

Substance is listed.

**Standard for the Uniform Scheduling of****Drugs and Poisons**

Substance is not listed.

**National regulations****Information about limitation of use:**Employment restrictions concerning young persons must be observed.  
For use only by technically qualified individuals.**Water hazard class:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

**Other regulations, limitations and prohibitive****regulations****ELINCS (European List of Notified Chemical****Substances)**

Substance is not listed.

**Substances of very high concern (SVHC)****according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances**

Substance is listed.

**15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:**

Health, Safety and Environmental Department.

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent

DE/E