tert-Butyl methyl ether

34875-1L

Version 1.3 Revision Date 16.12.2022

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

1.1. Product identifier

Product name	:	tert-Butyl methyl ether
SDS-number	:	000000020412
Type of product	:	Substance
Remarks	:	SDS according to Art. 31 of Regulation (EC) 1907/2006.
Chemical name	:	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane
Index-No.	:	603-181-00-X
REACH Registration Number	:	no data available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture	:	Laboratory chemicals
Uses advised against	:	none

1.3. Details of the supplier of the safety data sheet

Company	:	Honeywell International Inc. 115 Tabor Road 07950-2546 Morris Plains USA	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	:		
For further information, please contact:	:	SafetyDataSheet@Honeywell.com	

1.4. Emergency telephone number

Emergency telephone number	:	+1-703-527-3887 (ChemTrec-Transport) +1-303-389-1414 (Medical)
Country based Poison Control Center	:	see chapter 15.1

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable liquids Category 2
H225 Highly flammable liquid and vapour.
Skin irritation Category 2
H315 Causes skin irritation.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms :

Signal word : Danger

Hazard statements :	H225	Highly flammable liquid and vapour.
	H315	Causes skin irritation.
Precautionary statements :	P243	Take precautionary measures against static discharge.
	P280	Wear protective gloves/ eye protection/ face protection.
	P302 + P352	IF ON SKIN: Wash with plenty of water.
	P308 + P313	IF exposed or concerned: Get medical advice/ attention.

2.3. Other hazards

Vapours may form explosive mixtures with air. The material can accumulate static charge and can therefore cause electrical ignition. Aspiration hazard if swallowed - can enter lungs and cause damage.

SECTION 3: Composition/information on ingredients

3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	1634-04-4 603-181-00-X 216-653-1	Flam. Liq. 2; H225 Skin Corr. 2; H315	100 %	

3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:
First aider needs to protect himself. Move out of dangerous area. If unconscious, place in recovery position and seek medical advice. Immediately take off contaminated clothing and rinse body with plenty of water.

Inhalation:
If inhaled, remove to fresh air. If symptoms persist, call a physician.

Skin contact:
After contact with skin, wash immediately with plenty of soap and water. Consult a physician.

Eye contact:
Rinse thoroughly with plenty of water, also under the eyelids. Protect unharmed eye. If eye irritation persists, consult a specialist.

Ingestion:
When swallowed, allow water to be drunk. Do NOT induce vomiting. Call a physician immediately.

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

No data available

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms. :

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Foam
Carbon dioxide (CO2)
Dry powder

Extinguishing media which shall not be used for safety reasons:
High volume water jet

5.2. Special hazards arising from the substance or mixture

Vapours are heavier than air and may spread along floors.
Vapours may form explosive mixtures with air.
Fire or intense heat may cause violent rupture of packages.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.Use a water spray to cool fully closed containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Wear personal protective equipment. Unprotected persons must be kept away. Eliminate all ignition sources if safe to do so.

6.2. Environmental precautions

Do not let product enter drains. Prevent further leakage or spillage if safe to do so.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:
Exhaust ventilation at the object is necessary. Wear personal protective equipment. Avoid contact with skin and eyes. Keep away from heat and sources of ignition. Take precautionary measures against static discharges.

Advice on protection against fire and explosion:
Normal measures for preventive fire protection.

Hygiene measures:
General industrial hygiene practice.

Temperature class:
T1

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:
Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not leave vessels/containers open Avoid product residues in/on containers.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	EH40 WEL TWA	183,5 mg/m3 50 ppm		
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	EH40 WEL STEL	367 mg/m3 100 ppm		
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	EU ELV STEL	367 mg/m3 100 ppm		Indicative
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	EU ELV TWA	183,5 mg/m3 50 ppm		Indicative

TWA - Time weighted average
STEL - Short term exposure limit

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	Workers / Long-term systemic effects		178,5 mg/m3	Inhalation	
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	Workers / Acute local effects		357 mg/m3	Inhalation	
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	Workers / Long-term systemic effects		5100mg/kg bw/d	Skin contact	
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	Consumers / Long-term systemic effects		53,6 mg/m3	Inhalation	
tert-butyl methyl ether;	Consumers /		214 mg/m3	Inhalation	

MTBE; 2-methoxy-2-methylpropane	Acute local effects				
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	Consumers / Long-term systemic effects		7,1mg/kg bw/d	Ingestion	
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	Consumers / Long-term systemic effects		3570mg/kg bw/d	Skin contact	

No PNEC data available.

8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.
Do not breathe vapours/dust.
Recommended preventive skin protection
Take off all contaminated clothing immediately.
When using do not eat, drink or smoke.

Personal protective equipment
Respiratory protection:
In the case of vapour formation use a respirator with an approved filter.

Hand protection:
Glove material: Nitrile rubber
Break through time: > 480 min
Glove thickness: 0,4 mm
Camatril® 730
Gloves must be inspected prior to use.
Replace when worn.

Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer reccomends to use the chemical protective glove in practice not longer than 50% of the recomended permeation time.
Manufacturer´s directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:
Safety goggles

Skin and body protection:
Wear suitable protective equipment.
Flame retardant antistatic protective clothing.

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	colourless
Odour	:	aromatic
molecular weight	:	88,15 g/mol
Melting point/range	:	-109 °C
Boiling point/boiling range	:	55,3 °C at 1.013 hPa
Flammability	:	Not applicable
Upper explosion limit	:	8,5 %(V)

Lower explosion limit	:	1,5 %(V)
Flash point	:	-28 °C closed cup Method: DIN 51755
Auto-ignition temperature	:	460 °C Method: DIN 51794
Decomposition temperature	:	No decomposition if used as directed.
pH	:	Not applicable
Viscosity, kinematic	:	0,464 mm2/s at 20 °C
Viscosity, kinematic	:	0,409 mm2/s at 40 °C
Water solubility	:	ca. 42 g/l at 20 °C Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	:	log Pow 1,06 at: 20 °C Method: OECD Test Guideline 107
Vapour pressure	:	267 hPa at 20 °C
Vapour pressure	:	330 hPa at 25 °C Method: OECD Test Guideline 104
Density	:	ca. 0,74 g/cm3 at 20 °C
Relative vapour density	:	No data available

9.2 Other Information

Evaporation rate	:	No data available
Viscosity, dynamic	:	0,36 mPa.s at 20 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Heat, flames and sparks.

10.5. Incompatible materials

Oxidizing agents
Strong acids
Strong bases
Halogens

10.6. Hazardous decomposition products

Fire may cause evolution of:
Carbon dioxide (CO2)
Carbon monoxide

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:
LD50
Species: Rat
Value: > 2.000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity:
LD50
Species: Rat
Value: > 2.000 mg/kg
Method: OECD Test Guideline 402

Acute inhalation toxicity:
LC50
Species: Rat
Value: 85 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403

Skin irritation:
Species: Rabbit
Result: irritating
Exposure time: 4 h
Method: OECD Test Guideline 404

Eye irritation:
Species: Rabbit
Result: non-irritant
Method: OECD Test Guideline 405

Respiratory or skin sensitisation:
No data available

Repeated dose toxicity:
Note: Not classified due to data which are conclusive although insufficient for classification.

Carcinogenicity:
Note: Not classified due to data which are conclusive although insufficient for classification.

Germ cell mutagenicity:
Note: Not classified due to data which are conclusive although insufficient for classification.

Reproductive toxicity:
Remarks: Not classified due to data which are conclusive although insufficient for classification.

Aspiration hazard:
Not classified due to data which are conclusive although insufficient for classification.

11.2. Information on other hazards

Endocrine disrupting properties
No data available

Other information:
Not mutagenic in Ames Test
Solvent removes skin oil from the skin.
Solvent vapours have a narcotic effect if inhaled in high concentrations.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:
LC50
Species: Leuciscus idus (Golden orfe)
Value: > 1.000 mg/l
Exposure time: 48 h

LC50
Species: Pimephales promelas (fathead minnow)
Value: 672 mg/l
Exposure time: 96 h

LC50
Species: Menidia beryllina (Silverside)
Value: 574 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

NOEC
Species: Pimephales promelas (fathead minnow)
Value: 450 mg/l

Exposure time: 31 d
mortality

Toxicity to aquatic plants:
EC50
Species: scenedesmus subspicatus
Value: > 800 mg/l
Exposure time: 72 h

IC50
Species: Pseudokirchneriella subcapitata (green algae)
Value: 491 mg/l
Exposure time: 96 h

Toxicity to Microorganisms:
EC10
Cell multiplication inhibition test
Species: Pseudomonas putida
Value: ca. 710 mg/l
Exposure time: 18 h

Toxicity to aquatic invertebrates:
EC50
static test
Species: Daphnia magna (Water flea)
Value: 651 mg/l
Exposure time: 48 h
EC50
flow-through test
Species: Daphnia magna (Water flea)
Value: 472 mg/l
Exposure time: 48 h
EC50
Species: Mysidopsis bahia (opossum shrimp)
Value: 187 mg/l
Exposure time: 96 h
Method: US-EPA OPPTS 850.1035

Chronic toxicity to aquatic invertebrates:
NOEC
Species: Mysidopsis bahia (opossum shrimp)
Value: 26 mg/l

Exposure time: 28 d
Method: OPPTS 850.1350

Chronic toxicity to aquatic invertebrates:
NOEC
Species: Daphnia magna (Water flea)
Value: 51 mg/l
Exposure time: 21 d
Method: OPPTS 850.1300

12.2. Persistence and degradability

Biodegradability:
Biodegradation: 0 %
Exposure time: 28 d
Result: Not readily biodegradable.
Method: OECD Test Guideline 301D

12.3. Bioaccumulative potential

No bioaccumulation is to be expected (log Pow <= 4).

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
Dispose according to legal requirements.

Packaging:
Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:
Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number
ADR/RID:2398 IMDG:2398 IATA:2398

14.2 UN proper shipping name
ADR/RID:METHYL tert-BUTYL ETHER
IMDG:METHYL tert-BUTYL ETHER
IATA:Methyl tert-butyl ether

14.3 Transport hazard class(es)
ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packaging group
ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards
ADR/RID:no Marine pollutant: no

14.6 Special precautions for user
No data available

14.7 Maritime transport in bulk according to IMO instruments
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Basis	Value	Remarks
Directive 2012/18/EC Listed in Regulation : P5c: FLAMMABLE LIQUIDS	**Quantity**: 5.000.000 kg **Quantity**: 50.000.000 kg	

Number in Regulation: 1.2.5.3		
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of ≥ 0.1 % (w/w).

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+)35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	0382 24444
Germany	Berlin : 030/19240
	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240
	Göttingen : 0551/19240

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	800250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Giftinformation);+46104566786
Switzerland	145
United Kingdom	(+44) 844 892 0111

	Homburg : 06841/19240
	Mainz : 06131/19240
	Munich : 089/19240
Latvia	+37167042473

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
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. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

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

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

Honeywell
Riedel-de Haën™

tert-Butyl methyl ether

34875-1L

Version 1.3 Revision Date 16.12.2022

SECTION 16: Other information

Text of H-statements referred to under heading 3

tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	:	H225	Highly flammable liquid and vapour.
		H315	Causes skin irritation.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:
EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very biaccumulative substance
PBT Persistent, bioaccmulative und toxic substance

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