

# **Safety Data Sheet**

according to Regulation (EC) No 1907/2006

# tert-Butyl methyl ether > 99 % (Methyl-tert-butyl ether) pure

Revision date: 13.07.2023 Product code: 19927 Page 1 of 12

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

## 1.1. Product identifier

tert-Butyl methyl ether > 99 % (Methyl-tert-butyl ether) pure

REACH Registration Number: 01-2119452786-27-XXXX

CAS No: 1634-04-4 Index No: 603-181-00-X EC No: 216-653-1

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

### Use of the substance/mixture

Laboratory chemical

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

### 1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH Street: Stempelstraße 6 Place: D-47167 Duisburg Telephone: 0203/5194-0

E-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit Telephone: 0203/5194-107/117

E-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de

Responsible Department: Abteilung Produktsicherheit

1.4. Emergency telephoneFor Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,number:Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada:

1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls

Telefax: 0203/5194-290

accepted)

## **Further Information**

No data available

## **SECTION 2: Hazards identification**

### 2.1. Classification of the substance or mixture

# Regulation (EC) No 1272/2008

Flam. Liq. 2; H225 Skin Irrit. 2: H315

Full text of hazard statements: see SECTION 16.

#### 2.2. Label elements

### Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:





#### **Hazard statements**

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.



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### **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smokina.

P233 Keep container tightly closed.

P280

P302+P352 IF ON SKIN: Wash with plenty of 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

No information available.

### **SECTION 3: Composition/information on ingredients**

#### 3.1. Substances

Sum formula: C5H12O Molecular weight: 88,15 g/mol

#### **Hazardous components**

CAS No	Chemical name			Quantity	
	EC No	Index No	REACH No		
	Classification (Regulation (EC) No 1272/2008)				
1634-04-4	tert-butyl methyl ether		212000)		
	216-653-1	603-181-00-X	01-2119452786-27-XXXX		
	Flam. Liq. 2, Skin Irrit. 2; H225 I	H315			

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

# Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity		
	Specific Conc. L	imits, M-factors and ATE			
1634-04-4	216-653-1	tert-butyl methyl ether	100 %		
	inhalation: LC5	nhalation: LC50 = 85 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg			

### **Further Information**

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

### **SECTION 4: First aid measures**

# 4.1. Description of first aid measures

## **General information**

No data available

# After inhalation

Provide fresh air.

### After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

### After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

#### After ingestion

Observe risk of aspiration if vomiting occurs.

Call a physician immediately.



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

Irritant

Dizziness

The product causes narcotic-like effects.

Inebriation

Vomiting

Vapours may cause drowsiness and dizziness.

Agitation

Spasms

Unconsciousness

Has degreasing effect on the skin.

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

No data available

# **SECTION 5: Firefighting measures**

### 5.1. Extinguishing media

### Suitable extinguishing media

Carbon dioxide (CO2).

Foam.

Extinguishing powder

# Unsuitable extinguishing media

no restriction

## 5.2. Special hazards arising from the substance or mixture

Combustible liquid.

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Hazardous combustion products

In case of fire may be liberated:

Carbon dioxide (CO2)

Carbon monoxide

### 5.3. Advice for firefighters

Remove persons to safety. Do not inhale explosion and combustion gases.

Avoid contact with skin, eyes and clothes.

In case of fire: Wear self-contained breathing apparatus.

Use water spray jet to protect personnel and to cool endangered containers.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Suppress gases/vapours/mists with water spray jet.

Move undamaged containers from immediate hazard area if it can be done safely.

## **SECTION 6: Accidental release measures**

# 6.1. Personal precautions, protective equipment and emergency procedures

## General advice

Keep away from sources of ignition - No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

### For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.



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Remove persons to safety.

**Emergency procedures** 

Do not breathe dust/fume/gas/mist/vapours/spray.

### For emergency responders

Precautionary statements For emergency responders: Personal protection equipment: see section 8

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

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

#### For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

## For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

#### Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

## 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

### **SECTION 7: Handling and storage**

### 7.1. Precautions for safe handling

#### Advice on safe handling

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff. Keep container tightly closed.

Use personal protection equipment. Use extractor hood (laboratory).

Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

### Advice on protection against fire and explosion

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

# Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink

## Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

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

#### Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.



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## Hints on joint storage

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

## Further information on storage conditions

Vapours may form explosive mixtures with air. storage temperature +2°C - +25°C

Protect against: Light

# 7.3. Specific end use(s)

Laboratory use Laboratory chemical

### **SECTION 8: Exposure controls/personal protection**

## 8.1. Control parameters

## Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
1634-04-4	tert-Butyl-methyl ether	50	183.5		TWA (8 h)	
		100	367		STEL (15 min)	

### **DNEL/DMEL values**

CAS No	Substance					
DNEL type		Exposure route	Effect	Value		
1634-04-4	tert-butyl methyl ether					
Worker DNEL	L, long-term	inhalation	systemic	178,5 mg/m³		
Worker DNEL	L, acute	inhalation	local	357 mg/m³		
Worker DNEL	L, long-term	dermal	systemic	5100 mg/kg bw/day		
Consumer DN	NEL, long-term	inhalation	systemic	53,6 mg/m³		
Consumer DNEL, acute		inhalation	local	214 mg/m³		
Consumer DN	NEL, long-term	dermal	systemic	3570 mg/kg bw/day		
Consumer DN	NEL, long-term	oral	systemic	7,1 mg/kg bw/day		

# **PNEC values**

CAS No	Substance	
Environment	Value	
1634-04-4	tert-butyl methyl ether	
Freshwater		5,1 mg/l
Freshwater (intermittent releases)		47,2 mg/l
Marine water		0,26 mg/l
Freshwater sediment		23 mg/kg
Marine sediment		1,17 mg/kg
Micro-organisms in sewage treatment plants (STP)		71 mg/l
Soil		1,56 mg/kg

## 8.2. Exposure controls

### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.



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### Individual protection measures, such as personal protective equipment

### Eye/face protection

Suitable eye protection: goggles.

#### Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact: No data available

By short-term hand contact

Trade name/designation KCL 730 Camatril® Velours

Suitable material: NBR (Nitrile rubber) 0,4mm

Wearing time with occasional contact (splashes): >120min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

#### Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing

# **Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Filtering device with filter or ventilator filtering device of type: AX

#### **Environmental exposure controls**

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

## **SECTION 9: Physical and chemical properties**

## 9.1. Information on basic physical and chemical properties

Physical state:

Colour:

Odour:

Odour threshold:

Liquid

colourless

characteristic

No data available

Melting point/freezing point:

-108,6 °C

Boiling point or initial boiling point and

55,3 °C

boiling range:

Flammability: not applicable Lower explosion limits: 1,5 vol. % Upper explosion limits: 8,5 vol. % Flash point: -28.2 °C Auto-ignition temperature: 460 °C not determined Decomposition temperature: pH-Value: not applicable Viscosity / kinematic: 0,409 mm<sup>2</sup>/s

(at 40 °C)

Water solubility: 42 g/L

(at 20 °C)

Solubility in other solvents

not determined

Dissolution rate: No data available



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Partition coefficient n-octanol/water:

Dispersion stability:

Vapour pressure:

not applicable

No data available

268 hPa

(at 20 °C)

Vapour pressure:No data availableDensity:0,74 g/cm³Relative density:No data availableBulk density:No data availableRelative vapour density:not determinedParticle characteristics:No data available

#### 9.2. Other information

# Information with regard to physical hazard classes

Explosive properties

Vapours can form explosive mixtures with air.

Sustaining combustion: Sustaining combustion

Self-ignition temperature

Solid: not applicable
Gas: not applicable

Oxidizing properties Not oxidising.

Other safety characteristics

Evaporation rate:

Solvent separation test:

No data available
Solvent content:

100%
Solid content:

No data available
Sublimation point:

No data available
Softening point:

No data available
Pour point:

No data available

No data available:

Viscosity / dynamic: 0,36 mPa·s

(at 20 °C)

Flow time: No data available

Further Information
No data available

# **SECTION 10: Stability and reactivity**

## 10.1. Reactivity

Highly flammable.

Vapours can form explosive mixtures with air.

Formation of: Peroxides

# 10.2. Chemical stability

Protect against: Light

### 10.3. Possibility of hazardous reactions

Oxidising agent Acids Alkali (Iye)

### 10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

# 10.6. Hazardous decomposition products

Peroxides



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#### **Further information**

No data available

### **SECTION 11: Toxicological information**

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Toxicocinetics, metabolism and distribution

No data available

#### **Acute toxicity**

Based on available data, the classification criteria are not met.

CAS No	Chemical name						
	Exposure route	Dose		Species	Source	Method	
1634-04-4	tert-butyl methyl ether	tert-butyl methyl ether					
	oral	LD50 mg/kg	> 2000	Rat	Study report (1996)	OECD Guideline 401	
	dermal	LD50 mg/kg	> 2000	Rat	Study report (1996)	OECD Guideline 402	
	inhalation (4 h) vapour	LC50	85 mg/l	Rat	Study report (1969)	OECD Guideline 403	

### Irritation and corrosivity

Causes skin irritation.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

#### Sensitising effects

Based on available data, the classification criteria are not met.

## Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

#### STOT-single exposure

Based on available data, the classification criteria are not met.

#### STOT-repeated exposure

Based on available data, the classification criteria are not met.

# **Aspiration hazard**

Based on available data, the classification criteria are not met.

# Information on likely routes of exposure

No data available

### Specific effects in experiment on an animal

No data available

#### Additional information on tests

No data available

# **Practical experience**

No data available

### 11.2. Information on other hazards

## **Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

# Other information

Irritant

Dizziness

The product causes narcotic-like effects.

Inebriation

Vomiting



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Vapours may cause drowsiness and dizziness.

Agitation Spasms

Unconsciousness

Has degreasing effect on the skin.

#### **Further information**

Pulmonary oedema

Pneumonia

Observe risk of aspiration if vomiting occurs.

# **SECTION 12: Ecological information**

## 12.1. Toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h]   [d]	Species	Source	Method
1634-04-4	tert-butyl methyl ether						
	Acute fish toxicity	LC50	672 mg/l	96 h	Pimephales promelas	Grey literature (1988)	other: US EPA 1981
	Acute algae toxicity	ErC50	184 mg/l	96 h	Pseudokirchneriella subcapitata	In 15th Annual SETAC Meeting 30 October	other: US EPA, WAF-method
	Acute crustacea toxicity	EC50	472 mg/l	48 h	Daphnia magna	Study report (1999)	EPA OPPTS 850.1010
	Fish toxicity	NOEC	299 mg/l	31 d	Pimephales promelas	Study report (1999)	other: ASTM E1241-92
	Crustacea toxicity	NOEC	51 mg/l	21 d	Daphnia magna	Study report (1999)	EPA OPPTS 850.1300

# 12.2. Persistence and degradability

2 %; 28 d; aerob

Not readily biodegradable (according to OECD criteria)

## 12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

## Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
1634-04-4	tert-butyl methyl ether	1,06

### BCF

CAS No	Chemical name	BCF	Species	Source
1634-04-4	tert-butyl methyl ether	1,5	Cyprinus carpio	Publication (1984)

# 12.4. Mobility in soil

No data available

# 12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

# 12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

### 12.7. Other adverse effects

No data available

#### **Further information**

Avoid release to the environment.

Do not allow to enter into surface water or drains.



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### **SECTION 13: Disposal considerations**

### 13.1. Waste treatment methods

### **Disposal recommendations**

Do not allow to enter into surface water or drains.

Send to a physico-chemical treatment facility under observation of official regulations.

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

### Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Handle contaminated packages in the same way as the substance itself.

# **SECTION 14: Transport information**

### Land transport (ADR/RID)

14.1. UN number or ID number: UN 2398

14.2. UN proper shipping name: METHYL tert-BUTYL ETHER

14.3. Transport hazard class(es): 14.4. Packing group: П Hazard label: 3 Classification code: F1 Limited quantity: 1 I Excepted quantity: F2 Transport category: Hazard No: 33 Tunnel restriction code: D/E

### Inland waterways transport (ADN)

14.1. UN number or ID number: UN 2398

14.2. UN proper shipping name: METHYL tert-BUTYL ETHER

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Classification code:F1Limited quantity:1 LExcepted quantity:E2

### Marine transport (IMDG)

14.1. UN number or ID number: UN 2398

14.2. UN proper shipping name: METHYL tert-BUTYL ETHER

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Special Provisions:-Limited quantity:1 LExcepted quantity:E2EmS:F-E, S-D

## Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 2398

14.2. UN proper shipping name: METHYL tert-BUTYL ETHER

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Limited quantity Passenger:1 L



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Passenger LQ: Y341 Excepted quantity: E2

IATA-packing instructions - Passenger:353IATA-max. quantity - Passenger:5 LIATA-packing instructions - Cargo:364IATA-max. quantity - Cargo:60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

### **SECTION 15: Regulatory information**

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

### **EU** regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

Information according to 2012/18/EU

P5c FLAMMABLE LIQUIDS

(SEVESO III):

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile

work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

## **SECTION 16: Other information**

# Changes

This data sheet contains changes from the previous version in section(s): 9,11,12.

## 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

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service LC50: Lethal concentration, 50%

LD50: Lethal dose, 50% Flam. Liq: Flammable liquid Skin Irrit: Skin irritation

# Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

## **Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be



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transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.