



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 08/18/2013

Version 1.0

SECTION 1. Identification

Product identifier

Product number 843978
Product name Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

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

Identified uses Chemical for synthesis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | SDS Phone Support: +1-978-715-1335 | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225
Acute toxicity, Category 4, Inhalation, H332
Skin corrosion, Category 1A, H314
Specific target organ systemic toxicity - single exposure, Category 3, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Danger

Hazard Statements

H225 Highly flammable liquid and vapor.
H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

843978

Version 1.0

Product name

Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

P403 + P235 Store in a well-ventilated place. Keep cool.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature

Mixture of organic compounds

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

tert-Butanol (>= 70 % - < 90 %)

75-65-0

potassium tert-butanolate (>= 10 % - < 30 %)

865-47-4

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

Skin contact

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

843978

Version 1.0

Product name

Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, respiratory paralysis, Shortness of breath, Drowsiness, Dizziness, narcosis, inebriation, Nausea, Vomiting, cardiovascular disorders, CNS disorders
Risk of blindness!

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

Water, Foam

Special hazards arising from the substance or mixture

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

843978
Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Version 1.0

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Keep workplace dry. Do not allow product to come into contact with water.

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

No metal or light-weight-metal containers.

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>tert-Butanol 75-65-0</i>			
ACGIH	Time Weighted Average (TWA):	100 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	100 ppm 300 mg/m ³	
	Short Term Exposure Limit (STEL):	150 ppm 450 mg/m ³	
OSHA_TRANS	PEL:	100 ppm 300 mg/m ³	
Z1A	Time Weighted Average (TWA):	100 ppm 300 mg/m ³	
	Short Term Exposure Limit (STEL):	150 ppm 450 mg/m ³	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

843978

Version 1.0

Product name

Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Flame retardant antistatic protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	characteristic
Odor Threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point	No information available.
Flash point	57 °F (14 °C) Method: c.c. Information refers to the main ingredient.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	0.820 g/cm ³

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 843978 Version 1.0
Product name Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Water solubility	No information available.
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.

SECTION 10. Stability and reactivity

Reactivity

Vapors may form explosive mixture with air.

Chemical stability

sensitive to moisture

Possibility of hazardous reactions

Violent reactions possible with:

Alkali metals, Alkaline earth metals, Strong acids, Aluminum, Strong oxidizing agents

Risk of ignition or formation of inflammable gases or vapors with:

Water, Acetone, Alcohols, Chloroform, dichloromethane, acetic acid, ethanol, Esters, Methanol, sulfuric acid, halogens, acids

Exothermic reaction with:

Halogenated hydrocarbon

Conditions to avoid

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Warming.

Moisture.

Incompatible materials

rubber, various plastics, Metals, Light metals, light metal alloys

Hazardous decomposition products

Peroxides

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Target Organs

Eyes

Skin

Respiratory system

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

843978

Version 1.0

Product name

Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Central nervous system

Acute oral toxicity

Acute toxicity estimate: > 2,000 mg/kg

Calculation method

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity

Acute toxicity estimate: 12.75 mg/l

Calculation method

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract

Acute dermal toxicity

absorption

Skin irritation

Mixture causes severe burns.

Eye irritation

Mixture causes serious eye damage. Risk of blindness!

Specific target organ systemic toxicity - single exposure

Mixture may cause respiratory irritation.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Quantitative data on the toxicity of this product are not available.

Further toxicological data:

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

843978

Version 1.0

Product name

Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Properties to be expected based on the main component of the mixture:

After absorption:

CNS disorders, drop in blood pressure, Drowsiness, Dizziness, inebriation, respiratory paralysis, cardiovascular disorders, narcosis, Nausea, Vomiting

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

tert-Butanol

Acute oral toxicity

LD50 rat: 2,733 mg/kg (IUCLID)

Symptoms: Nausea, Vomiting

Acute inhalation toxicity

LC50 rat: > 29.8 mg/l; 4 h (IUCLID)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract

Acute dermal toxicity

LD50 rabbit: > 2,000 mg/kg (IUCLID)

Skin irritation

rabbit

Result: No irritation

(IUCLID)

Sensitization

Sensitization test: guinea pig

Result: negative

Method: OECD Test Guideline 406

Germ cell mutagenicity

Genotoxicity in vivo

Mutagenicity (mammal cell test): micronucleus.

Result: negative

(National Toxicology Program)

Genotoxicity in vitro

Ames test

Result: negative

(IUCLID)

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

(National Toxicology Program)

potassium tert-butanolate

Acute oral toxicity

LD50 rat: 690 mg/kg

OECD Test Guideline 401

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Skin irritation

rabbit

Result: Causes severe burns.

OECD Test Guideline 404

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

843978

Version 1.0

Product name

Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Additional ecological information

Discharge into the environment must be avoided.

Ingredients

tert-Butanol

Toxicity to fish

LC50 Pimephales promelas (fathead minnow): 6,140 mg/l; 96 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 933 mg/l; 48 h (IUCLID)

Toxicity to algae

IC50 Desmodesmus subspicatus (green algae): > 1,000 mg/l; 72 h (IUCLID)

Toxicity to bacteria

EC10 Pseudomonas putida: 6,900 mg/l; 16 h (External MSDS)

Biodegradability

> 99.9 %; 19 d

OECD Test Guideline 302B

Easily eliminable.

potassium tert-butanolate

Biodegradability

decomposes

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 843978 Version 1.0
Product name Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

SECTION 14. Transport information

Land transport (DOT)

UN number UN 2920
Proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (CONT.
POTASSIUM-TERT-BUTYLATE, 2-METHYL-2-PROPANOL)
Class 8 (3)
Packing group I
Environmentally hazardous --

Air transport (IATA)

UN number UN 2920
Proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (CONT.
POTASSIUM-TERT-BUTYLATE, 2-METHYL-2-PROPANOL)
Class 8 (3)
Packing group I
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 2920
Proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (CONT.
POTASSIUM-TERT-BUTYLATE, 2-METHYL-2-PROPANOL)
Class 8 (3)
Packing group I
Environmentally hazardous --
Special precautions for user yes
EmS F-E S-C
Segregation Group 0018 Alkalis

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Flammable Liquid
Target organ effects
Harmful if swallowed.
Corrosive to skin
Corrosive to eyes
Corrosive by inhalation.

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Fire Hazard
Acute Health Hazard

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

843978
Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Version 1.0

Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

tert-Butanol 75-65-0

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

tert-Butanol

Pennsylvania Right To Know

Ingredients

tert-Butanol

potassium tert-butanolate

New Jersey Right To Know

Ingredients

tert-Butanol

potassium tert-butanolate

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

843978

Version 1.0

Product name

Potassium-tert-butylate (1M solution in tert-butanol) for synthesis

Training advice

Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H225

Highly flammable liquid and vapor.

H314

Causes severe skin burns and eye damage.

H332

Harmful if inhaled.

H335

May cause respiratory irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Date of issue:08/18/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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