

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Potassium tert-butoxide, 1M in Tetrahydrofuran



Version number: 2
 Issued: 2024-04-18
 Replaces SDS: 2019-01-11

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

1.1. Product identifier

Trade name

Potassium tert-butoxide, 1M in Tetrahydrofuran

CAS number

865-47-4

EC number

212-740-3

Synonyms

Potassium-2-methylpropan-2-olate solution

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

Relevant identified uses

Research and development. Laboratory Chemicals. Manufacture of substances.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,
 DL1 4XX Darlington
 United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

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www.molekula.com

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1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Serious eye damage, hazard category 1

Carcinogenicity, hazard category 2

Skin corrosion, hazard category 1A

Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation

Acute toxicity, oral, hazard category 4

Flammable liquids, hazard category 2

Self reactive substances and mixtures, Type A

Hazard statements

H225, H260, H302, H314, H318, H335, H351

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H260 In contact with water releases flammable gases which may ignite spontaneously.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

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Precautionary statements

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P261 Avoid breathing dust/fumes/gas/mist/vapours/spray.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P314 Get medical advice/attention if you feel unwell.
 P362 + P364 Take off contaminated clothing and wash it before reuse.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents/container to local regulations.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
tetrahydrofuran	109-99-9 203-726-8 01-2119444314-46 603-025-00-0	80 - 90%	Flam. Liq. 2, Acute Tox. 4 - oral, Eye Irrit. 2, STOT SE 3 - resp. tract irrit., STOT SE 3 - nar- cosis, Carc. 2	H225, H302, H319, H335, H336, H351, EUH019 - -	STOT SE 3; H335: C ≥ 25 % Eye Irrit.2; H319: C ≥ 25 %;
potassium tert-butanolate	865-47-4 212-740-3 - -	10 - 20%	Flam. Sol. 1, Water react. 1, Skin Corr. 1A, Eye Dam. 1, Self- react. B	H228, H252, H260, H314, H318 - -	-

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Molecular weight

112.21

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. Continue to rinse for at least 15 minutes. Get medical advice/attention if you feel unwell.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

Information for doctors

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

Eye contact

May cause temporary eye irritation.

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Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use carbon dioxide or dry powder to extinguish.

Unsuitable extinguishing media

Water. Foam.

5.2. Special hazards arising from the substance or mixture

Specific hazards: FLAMMABLE. Combustible.

Containers can burst violently when heated, due to excess pressure build-up.

Vapours may form explosive mixture with air at room temperature.

Carbon monoxide (CO). Carbon dioxide (CO₂).

Potassium oxides

Vapours are heavier than air and may travel along the floor and in the bottom of containers.

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

Pay attention to flashback.

Do not allow contact with water.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours and spray mist and contact with skin and eyes. For personal protection, see section 8. Provide adequate ventilation. Remove sources of ignition. Beware of the explosion danger. Take action to prevent static discharges.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Risk of explosion.

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6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Work under hood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges. Use spark-proof tools and explosion-proof equipment. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at room temperature. Store in a dry place. Store in a closed container.

Hydrolyzes readily. Handle and store contents under inert gas. Test for peroxide formation periodically and before distillation.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

TWA: 50ppm. 150mg/m³. Europe Directive: 2000/39/EU.

STEL: 100ppm. 300mg/m³. Europe Directive: 2000/39/EC

TWA: 50ppm. 150mg/m³. UK. EH40. WEL = Workplace Exposure Limit.

STEL: 100ppm. 300mg/m³. UK. EH40. WEL = Workplace Exposure Limit.

8.2. Exposure controls

Personal Protective Equipment Symbols



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Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves.

Splash Contact Recommended gloves: Butyl rubber.

Glove Thickness: 0.3mm

Breakthrough time: 10 minutes

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Yellow.

Odour

No data available

Melting point / freezing point

256 - 258 °C

Boiling point or initial boiling point and boiling range

No data available

Flammability

No data available

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Lower and upper explosion limit

No data available

Flash point

No data available

Auto-ignition temperature

No data available

Decomposition temperature

No data available

pH

No data available

Kinematic viscosity

No data available

Solubility

No data available

Partition coefficient n-octanol/water

Reacts violently with water.

Vapour pressure

0.00000174 hPa

Density and/or relative density

1.188 g/cm³

Relative vapour density

No data available

Explosive properties

Not classified as explosive.

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Formation of peroxides possible. Vapours may form explosive mixture with air at room temperature.

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10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions. Moisture Sensitive.

10.3. Possibility of hazardous reactions

There are no known conditions that are likely to result in a hazardous situation.

10.4. Conditions to avoid

Heat, sparks, flames. Moisture.

10.5. Incompatible materials

Strong acids. Strong oxidising agents. Alcohols Carbon dioxide (CO₂). Esters. halogens Ketones. Moist air. Water.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

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

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals
potassium tert-butanolate 865-47-4 / 212-740-3	LD50	690 mg/kg	Oral	-	Rat
tetrahydrofuran 109-99-9 / 203-726-8	Acute Toxicity (Oral LD50):	1650 mg/kg	-	-	Rat
tetrahydrofuran 109-99-9 / 203-726-8	Acute Toxicity (Inhalation LC50):	14.7 mg/l	vapour	6 hours	Rat
tetrahydrofuran 109-99-9 / 203-726-8	Acute Toxicity (Dermal LD50):	> 2,000mg/kg	-	-	Rabbit

Skin corrosion/irritation

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Product / Substance name CAS / EC no.	Result	Value / Dose	Species
potassium tert-butanolate 865-47-4 / 212-740-3	Causes severe burns.	3 minutes	Rabbit

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
potassium tert-butanolate 865-47-4 / 212-740-3	Not a skin sensitiser.	Guinea Pig	Maximization Test

Aspiration hazard

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

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute fish toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
tetrahydrofuran 109-99-9 / 203-726-8	LC50	2160 mg/l	96 hours	Pimephales promelas (Fat-head Minnow)

Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
tetrahydrofuran 109-99-9 / 203-726-8	EC50	3485 mg/l	48 hours	Daphnia magna

Chronical toxicity

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Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
tetrahydrofuran 109-99-9 / 203-726-8	NOEC	216 mg/l	33 days	Pimephales promelas (Fat-head Minnow)

12.2. Persistence and degradability

Persistence and degradability

Product / Substance name CAS / EC no.	Type of test	Duration	Result
tetrahydrofuran 109-99-9 / 203-726-8	aerobic	28 days	39% - Not readily biodegradable.

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

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

SECTION 14: Transport information

14.1. UN number

3129

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14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

WATER-REACTIVE LIQUID, CORROSIVE, N.O.S. (Potassium tert-butoxide, 1M in Tetrahydrofuran)

IMDG proper shipping name

WATER-REACTIVE LIQUID, CORROSIVE, N.O.S. (Potassium tert-butoxide, 1M in Tetrahydrofuran)

IATA proper shipping name

Water-reactive liquid, corrosive, n.o.s. (Potassium tert-butoxide, 1M in Tetrahydrofuran)

14.3. Transport hazard class(es)

Label

ADR/RID/ADN



4.3



8

IMDG



4.3



8

IATA



4.3



8

ADR / RID Class

4.3

ADR / RID Classification code

WC1

ADR / RID hazard identification number

X382

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IMDG Class

4.3 (8)

IATA Class

4.3 (8)

ADN Class

4.3

ADN Class Code

WC1

14.4. Packing group

ADR / RID / ADN: I

IMDG: I

IATA: I

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Special precautions for user

Tunnel restriction code: B/E

Transport category: 0

IMDG EmS

F-G, S-N

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 regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations

Directive: 2012/18/EU

P5c FLAMMABLE LIQUIDS

O1 OTHER HAZARDS

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

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SECTION 16: Other information

Phrase meaning

Eye Dam. 1 - Serious eye damage, hazard category 1

Carc. 2 - Carcinogenicity, hazard category 2

Skin Corr. 1A - Skin corrosion, hazard category 1A

STOT SE 3 - resp. tract irrit. - Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation

Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4

Flam. Liq. 2 - Flammable liquids, hazard category 2

Self-react. A - Self reactive substances and mixtures, Type A

Flam. Sol. 1 - Flammable solids, hazard category 1

Water react. 1 - Substances and mixtures, which in contact with water, emit flammable gases, hazard category 1

Self-react. B - Self reactive substances and mixtures, Type B

Eye Irrit. 2 - Eye irritation, hazard category 2

STOT SE 3 - narcosis - Specific Target Organ Toxicity — Single exposure, hazard category 3 - narcosis

H225 Highly flammable liquid and vapour.

H228 Flammable solid.

H252 Self-heating in large quantities; may catch fire.

H260 In contact with water releases flammable gases which may ignite spontaneously.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

EUH019 May form explosive peroxides.