According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Tetrabutylammonium hydroxide 40% in methanol

Version number: 1
Issued: 2023-12-06

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

1.1. Product identifier

Trade name

Tetrabutylammonium hydroxide 40% in methanol

CAS number

2052-49-5

EC number

218-147-6

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

Relevant identified uses

Research and development.

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

Web site
www.molekula.com

Contact person

Kevin Banks

Email

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

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

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Tetrabutylammonium hydroxide 40% in methanol

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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
Skin corrosion, hazard category 1B
Skin sensitisation, hazard category 1
Specific Target Organ Toxicity — Single exposure, hazard category 1
Acute toxicity, oral, hazard category 3
Acute toxicity, dermal, hazard category 3
Acute toxicity, inhalation, hazard category 3

Hazard statements

H225, H301, H311, H314, H317, H318, H331, H370

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.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H370 Causes damage to organs

Precautionary statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P260 Do not breathe dust/fumes/gas/mist/vapours/spray.
P262 Do not get in eyes, on skin, or on clothing.
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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302 + P352 IF ON SKIN: Wash with plenty of water/.
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 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P311 Call a POISON CENTER/doctor
P314 Get medical advice/attention if you feel unwell.
P321 Specific treatment (see on this label).
P330 Rinse mouth.
P333 +P313 If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P403 Store in a well-ventilated place.
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-phrase M factor acute M factor chronic	Note
methanol	67-56-1 200-659-6 01-2119392409-28 603-001-00-X	60%	Flam. Liq. 2, Acute Tox. 3 - oral, Acute Tox. 3 - dermal, Acute Tox. 3 - inhalation, STOT SE 1	H225, H301, H311, H331, H370 - -	STOT SE 1; H370: C ≥ 10 % STOT SE 2; H371: 3 % ≤ C < 10 %;
Tetrabutylammonium hydroxide	2052-49-5 218-147-6 - -	40%	Flam. Liq. 3, Acute Tox. 4 - oral, Skin Corr. 1B, Skin Sens. 1, Eye Dam. 1	H226, H302, H314, H317, H318 - -	-

Molecular weight
259.47

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

IF exposed or concerned: Get medical advice/attention. First aiders/ medical personnel need to protect themselves. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation
Toxic if inhaled. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing stops, provide artificial respiration. For breathing difficulties oxygen may be necessary.

Skin contact
In case of skin contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor. The casualty should be transferred to hospital for further treatment.

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

Ingestion
IF SWALLOWED: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only if the persons are fully conscious and awake).

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

Inhalation
Single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death.

Skin contact
Single exposure may cause the following adverse effects: Unconsciousness, possibly death.

Eye contact
Single exposure may cause the following adverse effects: Severe irritation. Unconsciousness, possibly death.

Ingestion
Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death.

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 alcohol-resistant foam, carbon dioxide or dry powder to extinguish.

Unsuitable extinguishing media
No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: FLAMMABLE. Toxic. Corrosive. Combustible.
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
Carbon monoxide (CO). Carbon dioxide (CO2).
Nitrous gases (NOx).
Pay attention to flashback.
Vapours are heavier than air and may spread near ground to sources of ignition.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. 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 breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin and eyes. Avoid dust formation. For personal protection, see section 8.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Absorb spillage with suitable absorbent material. Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

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. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. This product is toxic. Keep containers tightly closed. Immediate first aid is necessary. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Do not reuse empty containers.

General hygiene
Observe good chemical hygiene practices. Remove contaminated clothing immediately and wash skin with soap and water. 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.

Storage class : Toxic storage.
Hygroscopic. Store contents under inert gas.

7.3. Specific end use(s)
No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Exposure limits
Methanol. CAS: 67-56-1
TWA. 200ppm. 260mg/m3. Europe .
TWA. 200ppm. 266mg/m3. UK. EH40. WEL = Workplace Exposure Limit.
STEL. 250ppm. 333mg/m3. UK. EH40. WEL = Workplace Exposure Limit.

8.2. Exposure controls
Personal Protective Equipment Symbols

Eye / face protection
Wear eye protection.

Hand protection
Wear protective gloves. Recommended gloves: Butyl rubber.
Glove Thickness: 0.3mm
Breakthrough time: 8 hours

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
Colourless.

Odour
No data available

Melting point / freezing point
-98 °C / -144.4°C

Boiling point or initial boiling point and boiling range
65 °C

Flammability
No data available

Lower and upper explosion limit
5.5 - 36.5 %

Flash point
12 °C

Auto-ignition temperature
455 °C

Decomposition temperature
No data available

pH
No data available

Kinematic viscosity
No data available

Solubility
No data available

Partition coefficient n-octanol/water
No data available

Vapour pressure
No data available

Density and/or relative density
No data available

Relative vapour density
No data available

Particle characteristics
No data available

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stable under normal temperature conditions. Stable under the prescribed storage conditions.

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
Incompatible materials. Heating. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials
Acids. Acid anhydrides. Acid chlorides Metals. Reducing Agents.

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	Test animals
Tetrabutylammonium hydroxide 2052-49-5 / 218-147-6	LD50	1000 mg/kg	Oral	Rat
methanol 67-56-1 / 200-659-6	ATE = Acute Toxicity Estimate.	100.1 mg/kg	Oral	-
methanol 67-56-1 / 200-659-6	ATE = Acute Toxicity Estimate.	3.1 mg/l (vapours)	Inhalation.	-
methanol 67-56-1 / 200-659-6	ATE = Acute Toxicity Estimate.	300.1 mg/kg	Dermal	-

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Species
Tetrabutylammonium hydroxide 2052-49-5 / 218-147-6	Causes skin burns.	-
methanol 67-56-1 / 200-659-6	No skin irritation.	Rabbit

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Species
Tetrabutylammonium hydroxide 2052-49-5 / 218-147-6	Causes serious eye damage.	-
methanol 67-56-1 / 200-659-6	No eye irritation.	Rabbit

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species
Tetrabutylammonium hydroxide 2052-49-5 / 218-147-6	May cause an allergic skin reaction.	-
methanol 67-56-1 / 200-659-6	Negative.	Guinea Pig

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
methanol 67-56-1 / 200-659-6	Negative.	Salmonella typhimurium	Ames test
methanol 67-56-1 / 200-659-6	Negative.	Chinese hamster lung cells	In vitro mammalian cell gene mutation test.
methanol 67-56-1 / 200-659-6	Negative.	Mouse	-

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
methanol 67-56-1 / 200-659-6	LC50	15,400.0 mg/l	96 hours	Lepomis macrochirus (Bluegill)

Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
methanol 67-56-1 / 200-659-6	ErC50	22,000.0 mg/l	96 hours	Pseudokirchneriella subcapitata

Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
methanol 67-56-1 / 200-659-6	EC50	18,260 mg/l	96 hours	Daphnia magna

Micro-/macro organism toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
methanol 67-56-1 / 200-659-6	IC50	>1000 mg/l	3 hours	Activated sludge.

Chronical toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
methanol 67-56-1 / 200-659-6	NOEC	7,900 mg/l	200 hours	Oryzias latipes (Red killifish)

12.2. Persistence and degradability

No data available

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

3286

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (Tetrabutylammonium hydroxide 40% in methanol)

IMDG proper shipping name

FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (Tetrabutylammonium hydroxide 40% in methanol)

IATA proper shipping name

Flammable liquid, toxic, corrosive, n.o.s. (Tetrabutylammonium hydroxide 40% in methanol)

Tetrabutylammonium hydroxide 40% in methanol

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14.3. Transport hazard class(es)

Label

ADR/RID/ADN

3 *6.1* *8*

IMDG

3 *6.1* *8*

IATA

3 *6.1* *8*

ADR / RID Class

3

ADR / RID Classification code

FTC

ADR / RID hazard identification number

368

IMDG Class

3 (6.1/8)

IATA Class

3 (6.1, 8)

ADN Class

3

ADN Class Code

FTC

14.4. Packing group

ADR / RID / ADN: II
IMDG: II
IATA: II

14.5. Environmental hazards

IMDG EmS

F-E, S-C

14.6. Special precautions for user

Tunnel restriction code: D/E
Transport category: 2

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC99

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

REACH Methanol.
Directive:
ACUTE TOXIC
FLAMMABLE LIQUIDS
Methanol.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

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SECTION 16: Other information

Phrase meaning

Eye Dam. 1 - Serious eye damage, hazard category 1
Skin Corr. 1B - Skin corrosion, hazard category 1B
Skin Sens. 1 - Skin sensitisation, hazard category 1
STOT SE 1 - Specific Target Organ Toxicity — Single exposure, hazard category 1
Acute Tox. 3 - oral - Acute toxicity, oral, hazard category 3
Acute Tox. 3 - dermal - Acute toxicity, dermal, hazard category 3
Acute Tox. 3 - inhalation - Acute toxicity, inhalation, hazard category 3
Flam. Liq. 3 - Flammable liquids, hazard category 3
Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4
Flam. Liq. 2 - Flammable liquids, hazard category 2
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H370 Causes damage to organs