

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 1 of 11

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

1.1. Product identifier

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

REACH Registration Number: 01-2119970562-34-XXXX
CAS No: 10424-65-4
EC No: 200-882-9

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
Telefax: 0203/5194-290
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 telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, 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 accepted)

Further Information

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 1; H310
Acute Tox. 2; H300
Skin Corr. 1A; H314
STOT SE 1; H370
STOT RE 1; H372
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 2 of 11

Pictograms:



Hazard statements

H300+H310	Fatal if swallowed or in contact with skin.
H314	Causes severe skin burns and eye damage.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula:	C ₄ H ₁₃ NO·5H ₂ O
Molecular weight:	181,23 g/mol

Hazardous components

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	Classification (Regulation (EC) No 1272/2008)	
10424-65-4	Tetramethylammonium-5-hydrat	100 %
	01-2119970562-34-XXXX	
	Acute Tox. 1, Acute Tox. 2, Skin Corr. 1A, STOT SE 1, STOT RE 1, Aquatic Chronic 2; H310 H300 H314 H370 H372 H411	

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. Limits, M-factors and ATE	
10424-65-4		Tetramethylammonium-5-hydrat	100 %
		dermal: LD50 = 1000 - 2000 mg/kg; oral: LD50 = 300 - 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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 3 of 11

General information

Self-protection of the first aider

After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

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

Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Do NOT induce vomiting.

Rinse mouth.

Call a physician immediately.

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

Cough, Dyspnoea

Headache, Gastrointestinal complaints

Vomiting

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

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

In case of fire may be liberated:

Nitrogen oxides (NO_x)

Carbon monoxide

Carbon dioxide

Danger of dust explosion.

5.3. Advice for firefighters

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

Avoid contact with skin, eyes and clothes.

Additional information

Suppress gases/vapours/mists with water spray jet.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 4 of 11

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.

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.
Take up carefully when dry. Take up dust-free and set down dust-free.

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

Avoid dust formation.
Do not breathe dust.
Read label before use.
Use extractor hood (laboratory).

Advice on protection against fire and explosion

Danger of dust explosion.

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

Wash hands and face before breaks and after work and take a shower if necessary.
Take off immediately all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a place accessible by authorized persons only.
Keep container tightly closed. Store in a dry place.
Store in a well-ventilated place. Keep cool.

Further information on storage conditions

Protect against: Light, Humidity
Handle and store contents under inert gas. Protect from moisture.

7.3. Specific end use(s)

Laboratory chemicals

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 5 of 11

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
10424-65-4	Tetramethylammonium-5-hydrat			
Worker DNEL, long-term		inhalation	systemic	0,49 mg/m ³
Worker DNEL, long-term		dermal	systemic	0,14 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	0,29 mg/m ³
Consumer DNEL, long-term		dermal	systemic	0,083 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,042 mg/kg bw/day

PNEC values

CAS No	Substance	Value
10424-65-4	Tetramethylammonium-5-hydrat	
Freshwater		0,0005 mg/l
Freshwater (intermittent releases)		0,03 mg/l
Marine water		0,00005 mg/l
Freshwater sediment		0,03 mg/kg
Marine sediment		0,003 mg/kg
Micro-organisms in sewage treatment plants (STP)		5 mg/l
Soil		0,0057 mg/kg

8.2. Exposure controls

Appropriate engineering controls

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

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection:
goggles
Face protection umbrella

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

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
Trade name/designation: KCL 741 Dermatril® L

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 6 of 11

Recommended material: NBR (Nitrile rubber) 0,11 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): > 480 min

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

Wear suitable protective clothing.

Wear full chemical protective clothing.

Respiratory protection

Respiratory protection necessary at: dust formation

Filtering device with filter or ventilator filtering device of type: P3

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	white
Odour:	No data available
Melting point/freezing point:	67-70 °C
Boiling point or initial boiling point and boiling range:	No data available
Flammability:	No data available
Lower explosion limits:	6,7
Upper explosion limits:	36
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH-Value:	No data available
Viscosity / kinematic:	No data available
Water solubility:	No data available
Solubility in other solvents	No data available
No data available	
Vapour pressure:	No data available
Vapour pressure:	No data available
Density:	No data available
Bulk density:	No data available
Relative vapour density:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

 Danger of dust explosion.

Sustaining combustion:

No data available

Self-ignition temperature

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 7 of 11

Solid: No data available
Gas: No data available
Oxidizing properties
Not oxidising.

Other safety characteristics

Evaporation rate: No data available
Solvent separation test: No data available
Solvent content: No data available
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: No data available
Flow time: No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Danger of dust explosion.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.
Protect against: Light, Humidity

10.3. Possibility of hazardous reactions

Violent reaction with:
Oxidising agent, strong
Acids

10.4. Conditions to avoid

Light
Humidity

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

In case of fire may be liberated:
Nitrogen oxides (NO_x)
Carbon monoxide
Carbon dioxide

Further information

No data available

SECTION 11: Toxicological information

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

Toxicokinetics, metabolism and distribution

No data available

Acute toxicity

Fatal in contact with skin.
Fatal if swallowed.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 8 of 11

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
10424-65-4	Tetramethylammonium-5-hydrat				
	oral	LD50 300 - 2000 mg/kg	Rat	Study report (2005)	OECD Guideline 423
	dermal	LD50 1000 - 2000 mg/kg	Rat	Study report (2005)	OECD Guideline 402

Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

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

Causes damage to organs. (Tetramethylammonium-5-hydrat)

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure. (Tetramethylammonium-5-hydrat)

Aspiration hazard

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

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

Other information

Cough, Dyspnoea

Headache, Gastrointestinal complaints

Vomiting

Further information

No data available

SECTION 12: Ecological information

12.1. Toxicity

No data available

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 9 of 11

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
10424-65-4	Tetramethylammonium-5-hydrat					
	Acute fish toxicity	LC50 462 mg/l	96 h	Pimephales promelas	Center for Lake Superior Environmental S	OECD Guideline 203
	Acute algae toxicity	ErC50 96,3 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2005)	OECD Guideline 201
	Acute crustacea toxicity	EC50 3 mg/l	48 h	Daphnia magna	Study report (2001)	OECD Guideline 202
	Acute bacteria toxicity	(EC50 > 1000 mg/l)	3 h	activated sludge of a predominantly domestic sewage	Study report (2013)	OECD Guideline 209

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
10424-65-4	Tetramethylammonium-5-hydrat	< 0,036

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.

No data available

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

Discharge into the environment must be avoided.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

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

Do not mix with other wastes.

Do not empty into drains.

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 3423

14.2. UN proper shipping name:

TETRAMETHYLAMMONIUM HYDROXIDE, SOLID

14.3. Transport hazard class(es):

8

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 10 of 11

14.4. Packing group: II
 Hazard label: 8
 Classification code: C8
 Limited quantity: 1 kg
 Excepted quantity: E2
 Transport category: 2
 Hazard No: 80
 Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 3423
14.2. UN proper shipping name: TETRAMETHYLAMMONIUM HYDROXIDE, SOLID
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8
 Classification code: C8
 Limited quantity: 1 kg
 Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 3423
14.2. UN proper shipping name: TETRAMETHYLAMMONIUM HYDROXIDE, SOLID
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8
 Special Provisions: -
 Limited quantity: 1 kg
 Excepted quantity: E2
 EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3423
14.2. UN proper shipping name: TETRAMETHYLAMMONIUM HYDROXIDE, SOLID
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8
 Limited quantity Passenger: 5 kg
 Passenger LQ: Y844
 Excepted quantity: E2
 IATA-packing instructions - Passenger: 859
 IATA-max. quantity - Passenger: 15 kg
 IATA-packing instructions - Cargo: 863
 IATA-max. quantity - Cargo: 50 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes
 Danger releasing substance: Tetramethylammonium-5-hydrat

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Tetramethylammonium hydroxide pentahydrate for analysis, Reag. Ph. Eur.

Revision date: 15.03.2023

Product code: 27646

Page 11 of 11

Information according to 2012/18/EU
(SEVESO III):

H1 ACUTE TOXIC

Additional information:

E2

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

2 - obviously hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1.

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%

Relevant H and EUH statements (number and full text)

H300	Fatal if swallowed.
H300+H310	Fatal if swallowed or in contact with skin.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

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