PanReac AppliChem
ITW Reagents

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 25.04.2022
Revision: 25.04.2022
Version number 8.00 (replaces version 7.02)

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

· **1.1 Product identifier**

· **Trade name: Tetrabutylammonium Hydroxide 1 mol/l (1N) in methanol**

· **Article number:** 187139
· **Application of the substance / the mixture**
Chemical analytics
Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
AppliChem GmbH
Ottoweg 4
D-64291 Darmstadt
Tel.: +49 (0)6151 93570
Fax.: +49 (0)6151 935711
msds@applichem.com

· **Further information obtainable from:** Dept. Compliance
· **1.4 Emergency telephone number:** +49(0)6151 93570 (Inside normal buisness hours)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 2	H225 Highly flammable liquid and vapour.
Acute Tox. 3	H301 Toxic if swallowed.
Acute Tox. 3	H311 Toxic in contact with skin.
Acute Tox. 3	H331 Toxic if inhaled.
Skin Corr. 1A	H314 Causes severe skin burns and eye damage.
Eye Dam. 1	H318 Causes serious eye damage.
STOT SE 1	H370 Causes damage to the central nervous system and the visual organs.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.
· **Hazard pictograms**



GHS02 GHS05 GHS06 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
methanol

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Trade name: Tetrabutylammonium Hydroxide 1 mol/l (1N) in methanol

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tetrabutylammonium hydroxide

· **Hazard statements**

H225	Highly flammable liquid and vapour.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H370	Causes damage to the central nervous system and the visual organs.

· **Precautionary statements**

P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P321	Specific treatment (see on this label).
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.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 67-56-1 EINECS: 200-659-6 Reg.nr.: 01-2119433307-44-XXXX	methanol Flam. Liq. 2, H225; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT SE 1, H370 Specific concentration limits: STOT SE 1; H370: C ≥10 % STOT SE 2; H371: 3 % ≤ C < 10 %	>50-<100%
CAS: 2052-49-5 EINECS: 218-147-6	tetrabutylammonium hydroxide Skin Corr. 1A, H314; Eye Dam. 1, H318	>10-≤40%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Personal protection for the First Aider.
Immediately remove any clothing soiled by the product.
Remove breathing equipment only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Involve doctor immediately.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
· **After skin contact:**
Call a doctor immediately.
Immediately wash with water and soap and rinse thoroughly.
Immediately remove any clothing soiled by the product.

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· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Seek medical treatment.
Do not induce vomiting; call for medical help immediately.
Make victim drink ethanol (e.g. 1 drink glass off a 40 % alcoholic beverage).
· **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed**
Mentioning methanol ingestion.

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SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide and carbon dioxide
Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.
Formaldehyde
Vapours ara heavier than air and may spread along floors.
Beware of backfiring.
Forms explosive mixtures with air on intense heating.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Mouth respiratory protective device.
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Contain escaping vapours with water.

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SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources.
Avoid substance contact.
Do not inhale steams/aerosols.
· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Clean up affected area.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
· **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Provide alkali-resistant floor.
· **Information about storage in one common storage facility:**
Away from sources of ignition and heat.
· **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Open receptacle only under localised extractor facilities.
Store receptacle in a well ventilated area.
Store only outside or in explosion proof rooms.
Store under lock and key and with access restricted to technical experts or their assistants only.
· **Recommended storage temperature:** Room Temperature
· **Storage class:** 3
· **7.3 Specific end use(s)** No further relevant information available.

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SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
WEL	Short-term value: 333 mg/m³, 250 ppm Long-term value: 266 mg/m³, 200 ppm Sk

· **DNELs**		
67-56-1 methanol		
Oral	Acute - systemic effects, general population	5 mg/kg
	Long-term - systemic effects, general population	5 mg/kg
Dermal	Acute - systemic effects, worker	20 mg/kg
	Long-term - systemic effects, worker	20 mg/kg
	Acute - systemic effects, general population	5 mg/kg
	Long term - systemic effects, general population	5 mg/kg
Inhalative	Acute - local effects, worker	130 mg/m3
	Acute - systemic effects, worker	130 mg/m3
	Long-term - systemic effects, worker	130 mg/m3
	Long-term - local effects, worker	130 mg/m3
	Acute - systemic effects, general population	26 mg/m3
	Acute - local effects, general population	26 mg/m3

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	Long-term - systemic effects, general population	26 mg/m3
	Long-term - local effects, general population	26 mg/m3

· **PNECs**

67-56-1 methanol	
Aquatic compartment - freshwater	20.8 mg/L
Aquatic compartment - marine water	2.08 mg/L
Aquatic compartment - water, intermittent releases	1,540 mg/L
Aquatic compartment - sediment in freshwater	77 mg/kg
Terrestrial compartment - soil	100 mg/kg
Sewage treatment plant	100 mg/L

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Appropriate engineering controls** No further data; see item 7.
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
· **Respiratory protection:**
Short term filter device:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Use suitable respiratory protective device only when aerosol or mist is formed.
· **Recommended filter device for short term use:** Filter AX
· **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact gloves made of the following materials are suitable:**
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.7 mm
Value for the permeation: Level ≥ 480 min
· **As protection from splashes gloves made of the following materials are suitable:**
Fluorocarbon rubber (Viton)
Recommended thickness of the material: ≥ 0.7 mm
Value for the permeation: Level ≥ 120 min

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· **Eye/face protection**



Gauze goggles

· **Body protection:**
Solvent resistant protective clothing
Use protective suit.
Alkaline resistant protective clothing
Full head, face and neck protection
Flame retardant antistatic protective clothing

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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Physical state**	Fluid
· **Colour:**	Colourless
· **Odour:**	Alcohol-like
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	Undetermined.
· **Boiling point or initial boiling point and boiling range**	64 °C
· **Flammability**	Not applicable.
· **Lower and upper explosion limit**	
· **Lower:**	5.5 Vol %
· **Upper:**	44 Vol %
· **Flash point:**	12 °C
· **Ignition temperature:**	455 °C
· **Decomposition temperature:**	Not determined.
· **pH at 20 °C**	>12
· **Viscosity:**	
· **Kinematic viscosity**	Not determined.
· **Dynamic:**	Not determined.
· **Solubility**	
· **water:**	Fully miscible.
· **Partition coefficient n-octanol/water (log value)**	Not determined.
· **Vapour pressure at 20 °C:**	128 hPa
· **Density and/or relative density**	
· **Density at 20 °C:**	~0.9 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.

· **9.2 Other information**	
· **Appearance:**	
· **Form:**	Liquid
· **Important information on protection of health and environment, and on safety.**	
· **Auto-ignition temperature:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· **Solvent content:**	
· **Organic solvents:**	60.0 %
· **VOC (EC)**	60.00 %

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· **Change in condition**	
· **Evaporation rate**	Not determined.
· **Information with regard to physical hazard classes**	
· **Explosives**	Void
· **Flammable gases**	Void
· **Aerosols**	Void
· **Oxidising gases**	Void
· **Gases under pressure**	Void
· **Flammable liquids**	Highly flammable liquid and vapour.
· **Flammable solids**	Void
· **Self-reactive substances and mixtures**	Void
· **Pyrophoric liquids**	Void
· **Pyrophoric solids**	Void
· **Self-heating substances and mixtures**	Void
· **Substances and mixtures, which emit flammable gases in contact with water**	Void
· **Oxidising liquids**	Void
· **Oxidising solids**	Void
· **Organic peroxides**	Void
· **Corrosive to metals**	Void
· **Desensitised explosives**	Void

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:** Heating
· **10.3 Possibility of hazardous reactions** No dangerous reactions known.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:**
Risk of explosion with:
oxidizing agent
Exothermic reactions with:
reducing agents
acid anhydrides
· **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5
· **Additional information:**
sensitive to air
Incompatible with:
varous plastics
various alloys
Explosible with air in a vaporous/ gaseous state.

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SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Toxic if swallowed, in contact with skin or if inhaled.
· **LD/LC50 values relevant for classification:**
Quantitative data on the toxicological effect of this product are not available.

· **Components**	**Type**	**Value**	**Species**
ATE (Acute Toxicity Estimates)			
Oral	LD50	167 mg/kg (rat)	
Dermal	LD50	500 mg/kg (rabbit)	
Inhalative	LC50/4 h	5 mg/l (rat)	

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67-56-1 methanol		
Oral	LD50	100 mg/kg (rat)
Dermal	LD50	300 mg/kg (rabbit)
Inhalative	LC50/4 h	3 mg/l (rat)

· **Skin corrosion/irritation** Causes severe skin burns and eye damage.
· **Serious eye damage/irritation** Causes serious eye damage.
· **After inhalation:** Strong caustic effect on skin and mucous membranes.

· **Reproductive toxicity**	
67-56-1 methanol	
NOAEL (Fertility)	0.13 mg/kg bw/day (rat)

· **STOT-single exposure** Causes damage to the central nervous system and the visual organs.
· **Other information (about experimental toxicology):**
After swallowing:
pain
· **Additional toxicological information:**

· **Repeated dose toxicity**		
67-56-1 methanol		
Inhalative	NOAEL	1.06 mg/l (rat)

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**
None of the ingredients is listed.

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SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.

· **Type of test**	**Effective concentration**	**Method**	**Assessment**
67-56-1 methanol			
EC50/48 h	>10,000 mg/l (daphnia magna)		
EC50/96 h	12,000 mg/l (Crustacea)		
LC50/96 h	15,400 mg/l (fish)		

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
· **12.7 Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even small quantities leak into the ground.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

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Trade name: Tetrabutylammonium Hydroxide 1 mol/l (1N) in methanol

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SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Chemicals must be disposed of in compliance with the respective national regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**
· **Recommendation:**
Disposal must be made according to official regulations.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

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SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR, IMDG, IATA**	UN3286
· **14.2 UN proper shipping name**	
· **ADR, IMDG, IATA**	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (METHANOL, Tetrabutyl ammoniumhydroxide)
· **14.3 Transport hazard class(es)**	
· **ADR**	



· **Class**	3 (FTC) Flammable liquids.
· **Label**	3+6.1+8
· **IMDG**	



· **Class**	3 Flammable liquids.
· **Label**	3/6.1/8
· **IATA**	



· **Class**	3 Flammable liquids.
· **Label**	3 (6.1, 8)
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	II
· **14.5 Environmental hazards:**	Not applicable.
· **14.6 Special precautions for user**	Warning: Flammable liquids.
· **Hazard identification number (Kemler code):**	368
· **EMS Number:**	F-E,S-C
· **Stowage Category**	B
· **Stowage Code**	SW2 Clear of living quarters.

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Trade name: Tetrabutylammonium Hydroxide 1 mol/l (1N) in methanol

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· **Segregation Code**	SG5 Segregation as for class 3 SG8 Stow "away from" class 4.1
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Transport category**	2
· **Tunnel restriction code**	D/E
· **IMDG**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 3286 FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (METHANOL, TETRABUTYL AMMONIUMHYDROXIDE), 3 (6.1+8), II

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Seveso category**
H2 ACUTE TOXIC
P5c FLAMMABLE LIQUIDS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

· **National regulations:**

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H370 Causes damage to organs.

· **Department issuing SDS:** Dept. Compliance

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· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

· *** Data compared to the previous version altered.**