

Material Safety Data Sheet

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Version 1.1
According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name	TETRABUTYLMAMMONIUM HYDROXIDE, 1.0M SOLUTION IN METHANOL
Product Number	230189
Company	Sigma-Aldrich Pty. Ltd. 12 Anella Avenue Castle Hill NSW 2154 Australia
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number	
TETRABUTYLAMMONIUM HYDROXIDE, ~25% SOLUTION IN METHANOL	None	None	None	
Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
TETRABUTYLAMMONIUM HYDROXIDE	>= 25 <= 26	2052-49-5	218-147-6	None
Symbols: C				
R-Phrases: 34				
Causes burns.				
METHANOL	>= 74 <= 75	67-56-1	200-659-6	603-001-00-X
Symbols: F-T				
R-Phrases: 11-23/24/25-39/23/24/25				
Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.				
Formula	C16H37NO			
Molecular Weight	259.48 AMU			

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Causes burns.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

ENVIRONMENTAL PRECAUTION(S)

Do not allow material to enter drains or water courses. Avoid contaminating sewers and waterways with this material.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Do not use if skin is cut or scratched. Wash thoroughly after handling.

STORAGE

Conditions of Storage: Store under inert gas. Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place.

SPECIAL REQUIREMENTS: Store under inert gas. Hygroscopic.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse. Discard contaminated shoes.

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	100 MG/M3
Poland		NDSCh	300 MG/M3
Poland		NDSP	-

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	260 mg/m3
		200 ppm

Remarks: H, methanol

EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	260 mg/m3
		200 ppm

Remarks: 4

Remarks: H, methanol

EXPOSURE LIMITS - NORWAY

Source	Type	Value
OEL	TWA	130 mg/m3
		100 ppm

Remarks: H, methanol

EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level 250 mg/m3	
		200 ppm

Remarks: H

Remarks: methanol

EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	260 mg/m3
		200 ppm

Remarks: H M C

Remarks: methanol

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	266 mg/m3
		200 ppm

Remarks: methanol

OEL

STEL

333 mg/m³

250 ppm

Remarks: Skin Indicative limit value

Remarks: methanol

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Faceshield (8-inch minimum).

9 - Physical and Chemical Properties

Appearance	Physical State: Liquid Color: Colorless	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Flash Point	11 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	0.83 g/cm ³	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Reducing agents, Alkali metals, Oxidizing agents, Acid anhydrides, Acid chlorides, Acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

SIGNS AND SYMPTOMS OF EXPOSURE

Confusion. Drowsiness. Unconsciousness. To the best of our

knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Methyl alcohol may be fatal or cause blindness if swallowed. Cannot be made non-poisonous. Ingestion can cause: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Nausea, headache, and vomiting. Gastrointestinal disturbances. Dizziness. Weakness.

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: Toxic if absorbed through skin.

Eye Contact: Causes burns.

Inhalation: Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: Toxic if swallowed.

TARGET ORGAN INFORMATION

Heart. Liver. Kidneys. Eyes.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 2924

Class: 3

PG: II

Subrisk: 8

Proper Shipping Name: Flammable liquid, corrosive, n.o.s.

IMDG

UN#: 2924

Class: 3

PG: II

Subrisk: 8

Proper Shipping Name: FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Marine Pollutant: No

Severe Marine Pollutant: No

Technical Name: Required

IATA

UN#: 2924

Class: 3

PG: II
Subrisk: 8
Proper Shipping Name: Flammable liquid, corrosive,
n.o.s.
Inhalation Packing Group I: No
Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: F-T

Highly Flammable. Toxic.

R-PHRASES: 11-23/24/25-39/23/24/25-34

Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Causes burns.

S-PHRASES: 7-16-26-36/37/39-45

Keep container tightly closed. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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