

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 02/21/2005

Reviewed on 05/20/2004

**1 Identification of substance:****Product details:****Product name:** Tetramethylammonium hydroxide, 25% aqueous solution**Stock number:** 20932**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company  
 Johnson Matthey Catalog Company, Inc.  
 30 Bond Street  
 Ward Hill, MA 01835-8099  
 Emergency Phone: (978) 521-6300  
 CHEMTREC: (800) 424-9300  
 Web Site: www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.  
 After normal hours call Chemtrec at (800) 424-9300.

**2 Composition/Data on components:****Chemical characterization:****Description: (CAS#)**

tetramethylammonium hydroxide (CAS# 75-59-2); 25%  
 water (CAS# 7732-18-5); 75%

**Identification number(s):****EINECS Number:** 200-882-9**3 Hazards identification****Hazard description:**

T+ Very toxic

**Information pertaining to particular dangers for man and environment**

R 10 Flammable.

R 27 Very toxic in contact with skin.

R 34 Causes burns.

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	3
FIRE	0
REACTIVITY	0

Health (acute effects) = 3

Flammability = 0

Reactivity = 0

**4 First aid measures****General information**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

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**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents** Water spray**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Measures for environmental protection:**

Dilute with plenty of water.

Do not allow material to be released to the environment without proper governmental permits.

**Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

**Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:**

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

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**Storage****Requirements to be met by storerooms and receptacles:**

No special requirements.

**Information about storage in one common storage facility:**

Do not store together with oxidizing and acidic materials.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store under lock and key and with access restricted to technical experts or their assistants only.

**8 Exposure controls and personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Components with limit values that require monitoring at the workplace:**

Not required.

**Additional information:** No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

**Breathing equipment:**

Use suitable respirator when high concentrations are present.

**Protection of hands:** Impervious gloves**Eye protection:**

Safety glasses

Tightly sealed goggles

Full face protection

**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

<b>Form:</b>	Solution
<b>Color:</b>	Colorless
<b>Odor:</b>	Amine-like

**Change in condition**

<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined

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<b>Sublimation temperature / start:</b>	Not determined
<b>Flash point:</b>	37°C (99°F)
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure at 20°C (68°F):</b>	23.3 hPa (17 mm Hg)
<b>Density at 20°C (68°F):</b>	1.016 g/cm <sup>3</sup>
<b>Solubility in / Miscibility with Water:</b>	Fully miscible

**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Materials to be avoided:**

Acids

Oxidizing agents

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

**Dangerous reactions** No dangerous reactions known

**Dangerous products of decomposition:**

Nitrogen oxides

Carbon monoxide and carbon dioxide

**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Dermal	LD50	25 mg/kg (gpg)
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**Primary irritant effect:**

**on the skin:** Corrosive effect on skin and mucous membranes.

**on the eye:** Strong corrosive effect.

**Sensitization:** No sensitizing effects known.

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**Subacute to chronic toxicity:**

Solutions of quaternary ammonium hydroxides are extremely corrosive and destructive to tissues that they come in contact with. They cause severe burns on contact with the skin and may cause blindness in contact with the eyes. Inhalation of the solution would be expected to cause burns of the upper respiratory tract along with symptoms such as coughing, wheezing, and shortness of breath. Will cause burns of the digestive tract if ingested. Symptoms of chronic exposure are not known. Dilute solutions have similar but less severe effects.

**Additional toxicological information:**

Danger through skin absorption.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**12 Ecological information:****General notes:**

Do not allow material to be released to the environment without proper governmental permits.

**13 Disposal considerations****Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:****Recommendation:**

Disposal must be made according to official regulations.

**Recommended cleansing agent:**

Water, if necessary with cleansing agents.

**14 Transport information****DOT regulations:****Hazard class:**

8

**Identification number:**

UN1835

**Packing group:**

II

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**Proper shipping name (technical name):** Tetramethylammonium hydroxide

**Land transport ADR/RID (cross-border)**



**ADR/RID class:** 8 Corrosive substances  
**Item:** 51b  
**Danger code (Kemler):** 883  
**UN-Number:** 1835  
**Description of goods:** Tetramethylammonium hydroxide

**Maritime transport IMDG:**



**IMDG Class:** 8  
**UN Number:** 1835  
**Packaging group:** II  
**Proper shipping name:** Tetramethylammonium hydroxide

**Air transport ICAO-TI and IATA-DGR:**



**ICAO/IATA Class:** 8  
**UN/ID Number:** 1835  
**Packaging group:** II  
**Proper shipping name:** Tetramethylammonium hydroxide

**15 Regulations**

**Product related hazard informations:**

**Hazard symbols:**

T+ Very toxic

**Risk phrases:**

10 Flammable.

27 Very toxic in contact with skin.

34 Causes burns.

**Safety phrases:**

16 Keep away from sources of ignition - No smoking.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

27 Take off immediately all contaminated clothing.

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

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36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

**Information about limitation of use:**

For use only by technically qualified individuals.

**16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:** Darrell R. Sanders

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