

# SAFETY DATA SHEET

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

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MATERIAL NAME: **TETRAMETHYLAMMONIUM HYDROXIDE (TMAH) 4.35-25%**

REVISED: August 2012

CHEMICAL FAMILY: Alkyl ammonium hydroxide

SYNONYMS: Alkali

Product Number for 25%: 060-TMAH

For 20%: 060-TMAH20

## SECTION 2. HEALTH HAZARD INFORMATION

### GHS Classifications

Oxidizing liquids : Not classified

Corrosive to Metals: Category 1

Acute toxicity Oral : Category 3

Acute toxicity Inhalation : Category 3

Skin corrosion / Skin irritation : Category 1B

Serious eye damage / Eye irritation : Category 1

Respiratory or skin sensitization : Not classified

Special target organ systemic toxicity single exposure: Not classified

Special target organ systemic toxicity repeated exposure : Not classified

Acute aquatic environmental hazards : Not classified

Chronic aquatic environmental hazards: Not classified

### Pictograms or Hazard symbols



Warning: May be corrosive to metals.

Danger: Causes severe skin burns and eye damage. Causes serious eye damage.



Danger: Toxic if swallowed or inhaled.

### Precautionary Statement Prevention

Use only in a well-ventilated area. Do not eat, drink or smoke when using this product. Do not breathe fume/gas/mist/vapors/spray.

Wear protective gloves/protective clothing /eye protection/face protection.  
Wash hands thoroughly after handling.  
Avoid release to the environment

### **SECTION 3.COMPOSITION/INFORMATION ON INGREDIENTS**

Material		Wt %
Tetramethylammonium hydroxide	CAS# 75-59-2	4.35-25
Water	CAS# 7732-18-5	75-95.65
Total		100

### **SECTION 4. FIRST AID MEASURES**

#### **EFFECTS OF OVEREXPOSURE**

##### **FIRST AID:**

**Eye Contact:** Corrosive to naked eye; in case of contact flush eyes well for 15 minutes, lifting the lower and upper eyelids occasionally. May cause permanent eye damage or blindness. Seek medical attention.

**Skin Contact:** Corrosive to exposed skin. Flush skin well with water for 15 minutes, wash with soap and water. Remove affected clothing.

**Inhalation:** If inhaled, remove to fresh air. If not breathing give artificial respiration. Seek medical attention. Inhalation of vapors may cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract. In severe cases, may pulmonary edema, circulatory failure, and death.

**Ingestion:** Will cause severe burns to the mouth and damage to the digestive tract. Causes gastrointestinal burns and perforation of the digestive tract. May be fatal if swallowed. Get medical attention immediately. Induce vomiting with soap solution.

### **SECTION 5. FIRE FIGHTING MEASURES**

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air	<u>LOWER</u>	<u>UPPER</u>
non-flammable	NA		NA	NA

**Extinguishing media:** Suitable for surrounding fire.

**Special fire fighting procedures:** Wear chemically retardant gear and NIOSH approved self-contained breathing apparatus. Thermal decomposition produces irritating and toxic fumes. Do not allow to come in contact with acids. Toxic gases released: Contact with acids may release heat.

### **SECTION 6. ACCIDENTAL RELEASE MEASURES**

**SPILLS, LEAKS:** Ventilate area of leak or spill. Stop leak if possible to do so without risk. Clean-up personnel should wear protective clothing and NIOSH approved respirator. Dike and cover the contaminated areas with absorbent, non-combustible material such as earth, sand, or vermiculite. Decontaminate area with sodium or calcium hypochlorite. Do not use combustibles. Do not flush to sewer or waterways.

### **SECTION 7. HANDLING AND STORAGE**

Wash thoroughly after handling. Remove contaminated clothing and wash before re-use. Do not breathe mist or vapor. Do not expose eyes, skin, or clothing. Keep container closed tightly. Avoid contact with open flame and acids. Do not use with metal tools or items. Use with adequate ventilation or respiratory protection. Do not store near acids or in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances. Residue in empty containers may still be hazardous.

## SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

**Respiratory protection:** Wear NIOSH/MESA approved full or half face piece (with goggles) respiratory protective equipment to avoid exposure to iodine vapors above 0.1ppm. A respiratory protection program complying with requirements of 29CFR 1910.134 is recommended.

**Ventilation:** Where adequate ventilation is not available, use NIOSH approved vapor respirator with dust, fume and mist filters. Local ventilation through fume hoods or laminar flow stations is also preferred. Keep fumes away from strong bases.

**Protective gloves:** Skin contact should be minimized through use of rubber gloves.

Other protective equipment: Steel tipped shoes/eye wash station/chemical safety chemical retardant clothing.

Eye protection: Safety goggles / face shield

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form :</b>	Liquid
<b>Appearance :</b>	Colorless to light yellow
<b>Odor :</b>	Ammonia
<b>pH :</b>	> 13
<b>Melting point:</b>	0 °C
<b>Boiling point/Boiling range :</b>	102 °C
<b>Flash point :</b>	Non-flammable.
<b>Ignition point :</b>	Will not ignite.
<b>Danger of explosion:</b>	Product is not explosive
<b>Decomposition temperature:</b>	Not available
<b>Vapor density (Air = 1) :</b>	No information
<b>Volatiles, %:</b>	100
<b>Vapor pressure at 15° C, mm Hg:</b>	Not available
<b>Specific gravity :</b>	1.014
<b>Solubility in / Miscibility:</b>	Completely miscible in water
<b>Evap. Rate (Water = 1):</b>	No information found

## SECTION 10. STABILITY AND REACTIVITY

Stability                                Stable    X    Conditions to avoid: Excess heat , sunlight, confined spaces  
  Unstable

Incompatible with:

Most common metals, acids.

Hazardous decomposition products: Heat, trimethylamine, methanol, nitrogen oxides, carbon monoxide

          Hazardous                May occur                                Conditions to avoid: Excess heat, direct sunlight.  
polymerization:            Will not occur    X

## SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE:

Oral, rat LD<sub>50</sub>: 34-50 mg/kg

Dermal, guinea pig LD<sub>50</sub>: 25 mg/kg

Ingredients investigated as a tumorigen, mutagen, reproductive effector

Not mutagenic per AMES test.

Carcinogenicity: NTP: No IARC: No Z List: No OSHA reg: No

IARC Category No

**OTHER DATA:**

Corrosive to skin, eyes, and mucous membranes. May be fatal if swallowed or inhaled.

**SECTION 12. ECOLOGICAL INFORMATION**

**Bioaccumulation :** When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater.

**Environmental Toxicity:** This material is suspected of being harmful to aquatic life. Water flea (Daphnia magna) LC<sub>50</sub>: 55.6 mg/L/48hr

**SECTION 13. DISPOSAL CONSIDERATIONS**

**DISPOSAL:** Dispose of in accordance with all federal state and local regulations. Send waste to an approved waste disposal facility.  
D002 hazardous waste

**SECTION 14. TRANSPORTATION INFORMATION**

Class 8

PG II

UN1835

Shipping Name: Tetramethylammonium Hydroxide Solution

**SECTION 15. REGULATORY**

Symbol: C, Corrosive

R-Phrase: 35, causes severe burns

S-Phrases: 23-36/37/39-45 Do not breathe vapor. 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).

**SECTION 16. OTHER INFORMATION**

NFPA Codes:

Health: 3

Flammability: 0

Reactivity: 2

R35: Causes severe burns.

Ingredients are TSCA listed.