Fisher Scientific

Part of Thermo Fisher Scientific

# SAFETY DATA SHEET

**Creation Date** 18-May-2010 **Revision Date** 15-May-2014 **Revision Number** 1

## 1. Identification

**Product Name** **Tetramethylammonium hydroxide pentahydrate**

**Cat No. :** **O4645-25**

**Synonyms** N,N,N-Trimethylmethanaminium hydroxide pentahydrate (Reagent)

**Recommended Use** Laboratory chemicals.

**Uses advised against** No Information available

**Details of the supplier of the safety data sheet**

**Company**
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

**Emergency Telephone Number**
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

## 2. Hazard(s) identification

**Classification**
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---|---|
| Corrosive to metals | Category 1 |
| Acute oral toxicity | Category 3 |
| Acute dermal toxicity | Category 3 |
| Skin Corrosion/irritation | Category 1 |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |

**Label Elements**

**Signal Word**
Danger

**Hazard Statements**
May be corrosive to metals

Toxic if swallowed
Toxic in contact with skin
Causes severe skin burns and eye damage
May cause respiratory irritation

**Precautionary Statements**
**Prevention**
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
**Response**
Immediately call a POISON CENTER or doctor/physician
**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
**Skin**
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
**Ingestion**
Rinse mouth
Do NOT induce vomiting
**Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed
**Disposal**
Dispose of contents/container to an approved waste disposal plant
**Hazards not otherwise classified (HNOC)**
None identified

## 3. Composition / information on ingredients

| Component | CAS-No | Weight % |
|---|---|---|
| Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate | 10424-65-4 | >95 |
| Tetramethylammonium hydroxide | 75-59-2 | - |

## 4. First-aid measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

**Ingestion** Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Most important symptoms/effects** Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Notes to Physician** Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** $CO_2$, dry chemical, dry sand, alcohol-resistant foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available
**Method -** No information available

**Autoignition Temperature** 470 °C / 878 °F

**Explosion Limits**
**Upper** No data available
**Lower** No data available
**Sensitivity to Mechanical Impact** No information available
**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**
Corrosive Material. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**
Carbon monoxide (CO) Carbon dioxide ($CO_2$) Nitrogen oxides (NOx)
**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 3 | 1 | 1 | N/A |

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions** Avoid release to the environment. See Section 12 for additional ecological Information.

**Methods for Containment and Clean Up** Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

## 7. Handling and storage

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Corrosives area.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures** Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Solid |
| **Appearance** | White |
| **Odor** | Ammonia-like |
| **Odor Threshold** | No information available |
| **pH** | No information available |
| **Melting Point/Range** | 62 - 71 °C / 143.6 - 159.8 °F |
| **Boiling Point/Range** | No information available |
| **Flash Point** | No information available |
| **Evaporation Rate** | Not applicable |
| **Flammability (solid,gas)** | No information available |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | No information available |
| **Vapor Density** | Not applicable |
| **Relative Density** | No information available |
| **Solubility** | No information available |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | 470 °C / 878 °F |
| **Decomposition temperature** | No information available |
| **Viscosity** | Not applicable |
| **Molecular Formula** | C4 H13 N O . 5 H2 O |
| **Molecular Weight** | 181.23 |

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions. Hygroscopic. Air sensitive.

**Conditions to Avoid** Avoid dust formation. Incompatible products. Excess heat. Exposure to air. Exposure to moisture.

**Incompatible Materials** Strong oxidizing agents, Strong acids

**Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide ($CO_2$), Nitrogen oxides (NOx)

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

**Acute Toxicity**

**Product Information**

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Tetramethylammonium hydroxide | 34 - 50 mg/kg ( Rat ) | 25-50 mg/kg ( Rabbit ) | Not listed |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** Causes burns by all exposure routes

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate | 10424-65-4 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Tetramethylammonium hydroxide | 75-59-2 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system
**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**
Do not empty into drains.

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT**
- **UN-No** UN3423
- **Proper Shipping Name** TETRAMETHYLAMMONIUM HYDROXIDE, SOLID
- **Hazard Class** 8
- **Packing Group** II

**TDG**
- **UN-No** UN3423
- **Proper Shipping Name** TETRAMETHYLAMMONIUM HYDROXIDE, SOLID
- **Hazard Class** 8
- **Packing Group** II

**IATA**

| | |
|---|---|
| **UN-No** | UN3423 |
| **Proper Shipping Name** | Tetramethylammonium hydroxide, solid |
| **Hazard Class** | 8 |
| **Packing Group** | II |

**IMDG/IMO**

| | |
|---|---|
| **UN-No** | UN3423 |
| **Proper Shipping Name** | Tetramethylammonium Hydroxide, solid |
| **Hazard Class** | 8 |
| **Packing Group** | II |

## 15. Regulatory information

**International Inventories**

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate | X | - | X | - | - | | X | X | X | X | - |
| Tetramethylammonium hydroxide | X | X | - | 200-882-9 | - | | X | X | X | X | X |

**Legend:**
**X - Listed**
**E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.**
**F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.**
**N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.**
**P - Indicates a commenced PMN substance**
**R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.**
**S - Indicates a substance that is identified in a proposed or final Significant New Use Rule**
**T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.**
**XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).**
**Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.**
**Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.**

**U.S. Federal Regulations**

**TSCA 12(b)** Not applicable

**SARA 313** Not applicable

**SARA 311/312 Hazardous Categorization**

| | |
|---|---|
| **Acute Health Hazard** | Yes |
| **Chronic Health Hazard** | No |
| **Fire Hazard** | No |
| **Sudden Release of Pressure Hazard** | No |
| **Reactive Hazard** | No |

**Clean Water Act** Not applicable

**Clean Air Act** Not applicable

**OSHA** Occupational Safety and Health Administration
Not applicable

**CERCLA**
Not applicable

**California Proposition 65** This product does not contain any Proposition 65 chemicals

**State Right-to-Know**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---|---|---|---|---|---|
| Tetramethylammonium hydroxide | - | X | - | - | - |

**U.S. Department of Transportation**

| | |
|---|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

**U.S. Department of Homeland Security**
This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Canada**
**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR**

**WHMIS Hazard Class** D1A Very toxic materials
E Corrosive material

## 16. Other information

**Prepared By** Regulatory Affairs
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Email: EMSDS.RA@thermofisher.com

**Creation Date** 18-May-2010
**Revision Date** 15-May-2014
**Print Date** 15-May-2014
**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

**Disclaimer**
**The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.**

**End of SDS**