



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Material name** TETRABUTYLAMMONIUM HYDROXIDE, 55% AQUEOUS  
**Catalog #** 3575  
**Version #** 02  
**Revision date** 21-Aug-2009  
**CAS #** Mixture  
**CAS #** 2052-49-5  
**Manufacturer information** GFS Chemicals, Inc.  
P.O. Box 245  
Powell, OH 43065 US  
www.gfschemicals.com  
Fax 740-881-5989  
Phone 740-881-5501  
Toll Free 800-858-9682  
Emergency Assistance Chemtrec 800-424-8300

## 2. Hazards Identification

**Emergency overview** DANGER  
Corrosive. Causes skin and eye burns.

**OSHA regulatory status** This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

**Potential health effects**

**Routes of exposure** Inhalation. Ingestion. Skin contact. Eye contact.

**Eyes** Causes chemical burns. Causes eye burns. Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes. Do not get this material in contact with eyes.

**Skin** Causes chemical burns. Causes skin burns. Do not get this material in contact with skin.

**Inhalation** Corrosive to tissue. Causes burns. Do not breathe dust/fume/gas/mist/vapors/spray.

**Ingestion** Harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Do not ingest.

**Potential environmental effects** Ecological injuries are not known or expected under normal use.

## 3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
TETRABUTYLAMMONIUM HYDROXIDE	2052-49-5	40 - 60
Non-hazardous components	CAS #	Percent
WATER	7732-18-5	40 - 60

## 4. First Aid Measures

**First aid procedures**

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Skin contact** Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

**Inhalation** Move to fresh air. For breathing difficulties, oxygen may be necessary. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

**Ingestion** If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Seek medical attention.

**Notes to physician** In case of shortness of breath, give oxygen. Keep victim warm.

**General advice** Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire Fighting Measures

**Flammable properties** No unusual fire or explosion hazards noted. The product is not flammable.

### Extinguishing media

**Suitable extinguishing media** Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

### Protection of firefighters

**Protective equipment and precautions for firefighters** In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.

**Specific methods** In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

## 6. Accidental Release Measures

**Personal precautions** Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Keep upwind. Keep out of low areas. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

**Methods for containment** Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.

**Methods for cleaning up** Large Spills: Dike far ahead of spill for later disposal. Neutralize with acid. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water.

Never return spills in original containers for re-use. Neutralize the spilled material before disposal.

## 7. Handling and Storage

**Handling** Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Do not use in areas without adequate ventilation. Wash thoroughly after handling. Handle and open container with care.

**Storage** Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

## 8. Exposure Controls / Personal Protection

**Engineering controls** Ensure adequate ventilation, especially in confined areas.

### Personal protective equipment

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe dust/fume/gas/mist/vapors/spray.

**Hand protection** Chemical resistant gloves.

**Eye / face protection** Do not get in eyes. Wear chemical goggles.

<b>Skin protection</b>	Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Chemical resistant gloves.
<b>General hygiene considerations</b>	Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.
<b>General</b>	Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations.

## 9. Physical & Chemical Properties

<b>Appearance</b>	Clear.
<b>Color</b>	Colorless to light yellow.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid. Solids may form which will redissolve upon heating to about 40 C.
<b>pH</b>	> 13
<b>Melting point</b>	33.8 °F (1 °C)
<b>Freezing point</b>	Not available.
<b>Boiling point</b>	215.6 °F (102 °C) Approximately
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Specific gravity</b>	0.97
<b>Relative density</b>	0.97 g/cm <sup>3</sup>
<b>Solubility (water)</b>	Miscible.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Molecular weight</b>	259.4800 g/mol
<b>Molecular formula</b>	(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> NOH

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	This product may react with oxidizing agents. Exothermic reaction with strong acids.
<b>Incompatible materials</b>	Oxidizing agents. Acids.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

**Acute effects** Causes burns.

### Toxicology data for the preparation

Acute LD<sub>50</sub>: 19 mg/kg, Mouse, Other

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.  
**Corrosivity** Hazardous by OSHA criteria.

## 12. Ecological Information

**Ecotoxicity** This product has no known eco-toxicological effects.  
**Persistence and degradability** Not available.

## 13. Disposal Considerations

**Waste codes** D002: Waste Corrosive material [pH  $\leq$ 2 or  $\geq$ 12.5, or corrosive to steel]  
**Disposal instructions** Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose in accordance with all applicable regulations.  
**Waste from residues / unused products** Not applicable.

## 14. Transport Information

### DOT

#### Basic shipping requirements:

**Proper shipping name** Caustic alkali liquids, n.o.s.  
**Hazard class** 8  
**UN number** UN1719  
**Packing group** II

#### Additional information:

**Special provisions** B2, IB2, T11, TP2, TP27  
**Packaging exceptions** 154  
**Packaging non bulk** 202  
**Packaging bulk** 242  
**ERG number** 154



## 15. Regulatory Information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.  
CERCLA/SARA Hazardous Substances - Not applicable.

### CERCLA (Superfund) reportable quantity

None

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** Yes

## Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

## State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

## 16. Other Information

### Further information

HMIS® is a registered trade and service mark of the NPCA.

### HMIS® ratings

Health: 3  
Flammability: 0  
Physical hazard: 1

### NFPA ratings

Health: 3  
Flammability: 0  
Instability: 1

### Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

### Issue date

21-Aug-2009

### This data sheet contains changes from the previous version in section(s):

This document has undergone significant changes and should be reviewed in its entirety.