1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Tetrabutylammonium hydroxide solution
Product Number: 86854
Brand: Fluka
Supplier: Sigma-Aldrich Corporation
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Corrosive

GHS Classification
Skin corrosion (Category 1B)
Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram: Danger

Signal word: Danger

Hazard statement(s)
H314 Causes severe skin burns and eye damage.

Precautionary statement(s)
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification
Health hazard: 3
Flammability: 0
Physical hazards: 0

NFPA Rating
Health hazard: 3
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

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

Skin  
May be harmful if absorbed through skin. Causes skin burns.

Eyes  
Causes eye burns. Causes severe eye burns.

Ingestion  
May be harmful if swallowed.

<table>
<thead>
<tr>
<th>3. COMPOSITION/INFORMATION ON INGREDIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formula</strong>: C(<em>{16})H(</em>{37})NO</td>
</tr>
<tr>
<td><strong>Molecular Weight</strong>: 259.47 g/mol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabutylammonium hydroxide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>2052-49-5</td>
<td>Skin Corr. 1B; H314</td>
</tr>
<tr>
<td>EC-No.</td>
<td>218-147-6</td>
<td>30 - 60 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

<table>
<thead>
<tr>
<th>4. FIRST AID MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General advice</strong></td>
</tr>
<tr>
<td>Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.</td>
</tr>
</tbody>
</table>

If inhaled  
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact  
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed  
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

<table>
<thead>
<tr>
<th>5. FIREFIGHTING MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conditions of flammability</strong></td>
</tr>
<tr>
<td>Not flammable or combustible.</td>
</tr>
</tbody>
</table>

Suitable extinguishing media  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters  
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products  
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx) |

<table>
<thead>
<tr>
<th>6. ACCIDENTAL RELEASE MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal precautions</strong></td>
</tr>
<tr>
<td>Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.</td>
</tr>
</tbody>
</table>

Environmental precautions  
Do not let product enter drains.

Methods and materials for containment and cleaning up  
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

<table>
<thead>
<tr>
<th>7. HANDLING AND STORAGE</th>
</tr>
</thead>
</table>
Precautions for safe handling
Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form liquid
Colour colourless

Safety data
pH 14.0
Melting point/freezing point no data available
Boiling point > 100 °C (> 212 °F) at 1,013 hPa (760 mmHg)
Flash point no data available
Ignition temperature no data available
Autoignition temperature no data available
Lower explosion limit no data available
Upper explosion limit no data available
Vapour pressure no data available
Density 0.995 g/cm³
Water solubility no data available
Partition coefficient: n-octanol/water no data available
10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong acids, Corrodes metal

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
no data available

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
Eyes: no data available

Respiratory or skin sensitization

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

- **Inhalation**
  May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

- **Ingestion**
  May be harmful if swallowed.

- **Skin**
  May be harmful if absorbed through skin. Causes skin burns.

- **Eyes**
  Causes eye burns. Causes severe eye burns.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

- **Toxicity**
  no data available

- **Persistence and degradability**
  no data available

- **Bioaccumulative potential**
  no data available

- **Mobility in soil**
  no data available

- **PBT and vPvB assessment**
  no data available

- **Other adverse effects**

13. DISPOSAL CONSIDERATIONS

- **Product**
  Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

- **Contaminated packaging**
  Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3267  Class: 8  Packing group: II
Proper shipping name: Corrosive liquid, basic, organic, n.o.s. (Tetrabutylammonium hydroxide)
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 3267  Class: 8  Packing group: II  EMS-No: F-A, S-B
Proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Tetrabutylammonium hydroxide)
Marine pollutant: No

IATA
UN number: 3267  Class: 8  Packing group: II
Proper shipping name: Corrosive liquid, basic, organic, n.o.s. (Tetrabutylammonium hydroxide)

15. REGULATORY INFORMATION

OSHA Hazards
Corrosive

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 3
H314 Causes severe skin burns and eye damage.
Skin Corr. Skin corrosion

Further information
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