## SECTION 1: Identification

### 1.1. Identification

<table>
<thead>
<tr>
<th>Product form</th>
<th>Mixtures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Hydrochloric Acid, 0.5N (0.5M)</td>
</tr>
<tr>
<td>Product code</td>
<td>LC15280</td>
</tr>
</tbody>
</table>

### 1.2. Recommended use and restrictions on use

<table>
<thead>
<tr>
<th>Use of the substance/mixture</th>
<th>For laboratory and manufacturing use only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended use</td>
<td>Laboratory chemicals</td>
</tr>
<tr>
<td>Restrictions on use</td>
<td>Not for food, drug or household use</td>
</tr>
</tbody>
</table>

### 1.3. Supplier

LabChem, Inc.
1010 Jackson's Pointe Ct.
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

### 1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 or +1-703-741-5970

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS US classification**

<table>
<thead>
<tr>
<th>Skin corrosion/irritation Category 1B</th>
<th>H314 - Causes severe skin burns and eye damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation Category 1</td>
<td>H318 - Causes serious eye damage</td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

### 2.2. GHS Label elements, including precautionary statements

**GHS US labeling**

**Hazard pictograms (GHS US):**

- **Signal word (GHS US):** Danger
- **Hazard statements (GHS US):** H314 - Causes severe skin burns and eye damage
- **Precautionary statements (GHS US):**
  - P260 - Do not breathe mist, vapors, spray.
  - P264 - Wash exposed skin thoroughly after handling.
  - P280 - Wear protective gloves, eye protection, protective clothing, face protection.
  - P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
  - P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - 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.
  - P363 - Wash contaminated clothing before reuse.
  - P405 - Store locked up.
  - P501 - Dispose of contents/container to comply with local, state and federal regulations.

### 2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification: None.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable
SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>98.19</td>
<td>Not classified</td>
</tr>
<tr>
<td>Hydrochloric Acid, 37% w/w</td>
<td>(CAS-No.) 7647-01-0</td>
<td>1.81</td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

Symptoms/effects: Causes severe skin burns and eye damage.

Symptoms/effects after inhalation: Possible inflammation of the respiratory tract.

Symptoms/effects after skin contact: Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact: Causes serious eye damage.

Symptoms/effects after ingestion: Nausea. Vomiting.

Chronic symptoms: Affection/discolouration of the teeth.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard: Not flammable.

Explosion hazard: Not applicable.

Reactivity in case of fire: Thermal decomposition generates: Corrosive vapors.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Other information: Not applicable.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Try to stop release. Dike and contain spill.

6.1.1. For non-emergency personnel


Emergency procedures: Evacuate unnecessary personnel.
### Hydrochloric Acid, 0.5N (0.5M)

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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**6.1.2. For emergency responders**

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

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**6.2. Environmental precautions**

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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**6.3. Methods and material for containment and cleaning up**

For containment: Take up liquid spill into inert absorbent material. Take account of toxic/corrosive precipitation water.

Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

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**6.4. Reference to other sections**

See Heading 8. Exposure controls and personal protection.

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### SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray.

Hygiene measures: Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

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**7.2. Conditions for safe storage, including any incompatibilities**

Technical measures: Comply with applicable regulations.

Storage conditions: Keep only in the original container in a cool, well ventilated place away from: incompatible materials. Keep container closed when not in use.


Incompatible materials: Direct sunlight.

Packaging materials: Do not store in corrosible metal.

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### SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

- **Hydrochloric Acid, 0.5N (0.5M)**
  No additional information available

- **Hydrochloric Acid, 37% w/w (7647-01-0)**
  - **USA - ACGIH - Occupational Exposure Limits**
    - ACGIH Ceiling (mg/m³): 2.98 mg/m³
    - ACGIH Ceiling (ppm): 2 ppm
  - **USA - OSHA - Occupational Exposure Limits**
    - OSHA PEL (Ceiling) (mg/m³): 7 mg/m³
    - OSHA PEL (Ceiling) (ppm): 5 ppm
  - **USA - IDLH - Occupational Exposure Limits**
    - US IDLH (ppm): 50 ppm
  - **USA - NIOSH - Occupational Exposure Limits**
    - NIOSH REL (ceiling) (mg/m³): 7 mg/m³
    - NIOSH REL (ceiling) (ppm): 5 ppm
  - **Water (7732-18-5)**
    No additional information available

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**8.2. Appropriate engineering controls**

Appropriate engineering controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.
Hydrochloric Acid, 0.5N (0.5M)
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Chemical resistant apron. Face shield. Gloves. Safety glasses.

Hand protection:
Wear protective gloves.

Eye protection:
Chemical goggles or face shield

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Respiratory protection not required in normal conditions

Personal protective equipment symbol(s):

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>0.3</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific gravity / density</td>
<td>1 – 1.1</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>36.46 g/mol</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water. Soluble in ethanol. Soluble in methanol.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None.</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available
### SECTION 10: Stability and reactivity

#### 10.1. Reactivity
Thermal decomposition generates: Corrosive vapors.

#### 10.2. Chemical stability
Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions
Reacts violently with (some) bases: release of heat.

#### 10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials
Metals, cyanides, strong bases.

#### 10.6. Hazardous decomposition products

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

#### Hydrochloric Acid, 37% w/w (7647-01-0)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>700 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>5010 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>700 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>5010 mg/kg body weight</td>
</tr>
</tbody>
</table>

**Water (7732-18-5)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>≥ 90000 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>90000 mg/kg body weight</td>
</tr>
</tbody>
</table>

#### Skin corrosion/irritation
- Causes severe skin burns.
  - pH: 0.3

#### Serious eye damage/irritation
- Causes serious eye damage.
  - pH: 0.3

#### Respiratory or skin sensitization
- Not classified

#### Germ cell mutagenicity
- Not classified

#### Carcinogenicity
- Not classified

#### Reproductive toxicity
- Not classified

#### STOT—single exposure
- Not classified

#### Hydrochloric Acid, 37% w/w (7647-01-0)

<table>
<thead>
<tr>
<th>Test</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT—single exposure</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>STOT—repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Likely routes of exposure</td>
<td>Skin and eye contact.</td>
</tr>
<tr>
<td>Potential Adverse human effects and symptoms</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Symptoms/effects</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Symptoms/effects after inhalation</td>
<td>Possible inflammation of the respiratory tract.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>Caustic burns/corrosion of the skin.</td>
</tr>
</tbody>
</table>
Hydrochloric Acid, 0.5N (0.5M)  
Safety Data Sheet  
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Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: Nausea. Vomiting.
Chronic symptoms: Affection/discolouration of the teeth.

SECTION 12: Ecological information

12.1. Toxicity

Hydrochloric Acid, 37% w/w (7647-01-0)
LC50 fish 1 282 mg/l (96 h, Gambusia affinis, Pure substance)
EC50 Daphnia 1 < 56 mg/l (72 h, Daphnia magna, Pure substance)

12.2. Persistence and degradability

Hydrochloric Acid, 0.5N (0.5M)
Persistence and degradability: Not established.

Hydrochloric Acid, 37% w/w (7647-01-0)
Persistence and degradability: Biodegradability: not applicable.
Chemical oxygen demand (COD): Not applicable
ThOD: Not applicable
BOD (% of ThOD): Not applicable

Water (7732-18-5)
Persistence and degradability: Not established.

12.3. Bioaccumulative potential

Hydrochloric Acid, 0.5N (0.5M)
Bioaccumulative potential: Not established.

Hydrochloric Acid, 37% w/w (7647-01-0)
Log Pow 0.25 (QSAR)
Bioaccumulative potential: Low potential for bioaccumulation (Log Kow < 4).

Water (7732-18-5)
Bioaccumulative potential: Not established.

12.4. Mobility in soil

Hydrochloric Acid, 37% w/w (7647-01-0)
Ecology - soil: No (test)data on mobility of the components available. May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Transport document description: UN1789 Hydrochloric acid, 8, II
UN-No.(DOT): UN1789
Proper Shipping Name (DOT): Hydrochloric acid
Transport hazard class(es) (DOT): 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT): II - Medium Danger
Hydrochloric Acid, 0.5N (0.5M)
Safety Data Sheet

Hazard labels (DOT) : 8 - Corrosive

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Special Provisions (49 CFR 172.102) : A3 - For combination packaging, if glass inner packaging (including ampoules) are used, they must be packed with absorbent material in tightly closed metal receptacles before packing in outer packaging. A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging. B3 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized. B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. N41 - Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L
DOT Vessel Stowage Location : C - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel.

Other information : No supplementary information available.

Transportation of Dangerous Goods

Transport document description : UN1789 HYDROCHLORIC ACID, 8, II
UN-No. (TDG) : UN1789
Proper Shipping Name (Transportation of Dangerous Goods) : HYDROCHLORIC ACID
TDG Primary Hazard Classes : 8 - Class 8 - Corrosives
Packing group : II - Medium Danger
ERAP Index : 3000
Explosive Limit and Limited Quantity Index : 1 L
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 1 L

Transport by sea

Transport document description (IMDG) : UN 1789 HYDROCHLORIC ACID, 8, II
UN-No. (IMDG) : 1789
Proper Shipping Name (IMDG) : HYDROCHLORIC ACID
Class (IMDG) : 8 - Corrosive substances
Packing group (IMDG) : II - substances presenting medium danger
Hydrochloric Acid, 0.5N (0.5M)
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Air transport

| Transport document description (IATA) | : | UN 1789 Hydrochloric acid, 8, II |
| UN-No. (IATA) | : | 1789 |
| Proper Shipping Name (IATA) | : | Hydrochloric acid |
| Class (IATA) | : | 8 - Corrosives |
| Packing group (IATA) | : | II - Medium Danger |

SECTION 15: Regulatory information

15.1. US Federal regulations

| Hydrochloric Acid, 0.5N (0.5M) |
|---|---|---|
| SARA Section 311/312 Hazard Classes | Health hazard - Skin corrosion or irritation |
| | Health hazard - Serious eye damage or eye irritation |

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

| Hydrochloric Acid, 37% w/w (7647-01-0) |
|---|---|---|
| EPA TSCA Regulatory Flag | T - T - indicates a substance that is the subject of a final TSCA section 4 test rule. |
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 5000 lb |
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 5000 lb |
| SARA Section 302 Threshold Planning Quantity (TPQ) | 500 lb |
| SARA Section 311/312 Hazard Classes | Health hazard - Acute toxicity (any route of exposure) |
| | Health hazard - Skin corrosion or irritation |
| | Health hazard - Serious eye damage or eye irritation |
| | Health hazard - Specific target organ toxicity (single or repeated exposure) |

15.2. International regulations

CANADA

| Water (7732-18-5) |
|---|---|
| Listed on the Canadian DSL (Domestic Substances List) |

EU-Regulations

| No additional information available |

National regulations

| No additional information available |

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 07/21/2020

Other information : None.

Full text of H-phrases: see section 16:

| H302 | Harmful if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |
| H335 | May cause respiratory irritation |
**Hydrochloric Acid, 0.5N (0.5M)**

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>NFPA health hazard</th>
<th>3 - Materials that, under emergency conditions, can cause serious or permanent injury.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFPA fire hazard</td>
<td>0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.</td>
</tr>
<tr>
<td>NFPA reactivity</td>
<td>1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.</td>
</tr>
</tbody>
</table>

**Hazard Rating**

**Health**

- 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

**Flammability**

- 0 Minimal Hazard - Materials that will not burn

**Physical**

- 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

**Personal protection**

- C
  - Safety glasses, Gloves, Synthetic apron

SDS US LabChem

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