Dear Customer,

This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI\(^1\) format to the GHS\(^2\) format (see note below). In order to ensure that you receive complete labeling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

Why It Matters:

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label

1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond. ANSI labels: pictograms, if present, will be inside individual black boxes.

2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number. Directly to the left will be a string of control characters, followed by a single letter. For GHS labels, the string of characters will end in “GHS:”

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Label in ANSI Format

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C\(_8\)H\(_{11}\)O\(_2\)  F.W. 212.24

CAUTION!

May explode if exposed to flame or excessive heat.

Keep away from heat, hot work, and all sources of ignition.

KEEP OUT OF REACH OF CHILDREN

SIZ SY

Benzyl Benzoate

(Benzonic Acid Phenylethyl Ester)

U.S.P.

CAS 120-54-4

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AN ISO 9001:2008 REGISTERED COMPANY  www.spectrumchemical.com

CORPORATE OFFICES
14422 South San Pedro Street
Gardena, California 90248
PHONE 310.516.8000
FAX 310.516.9843
Sincerely,

Regulatory Affairs
SAFETY DATA SHEET

Product code: P1315
Product Name: POTASSIUM HYDROXIDE, PELLETS, REAGENT, ACS

Other means of identification
Synonyms: Caustic Potash
CAS #: 1310-58-3
RTECS #: TT2100000
CI#: Not available

Recommended use of the chemical and restrictions on use
Recommended use:
Electroplating; photoengraving & lithography; printing inks; in analytical chemistry & in organic synthesis; manufucturing of liquid soap; pharmaceutical aid (as alkalizing agent); mordant for woods; absorbing carbon dioxide; mercerizing cotton; paint & varnish removers.
Principle uses of KOH include chemicals, particularly the production of potassium carbonate and potassium permaganate; pesticides, fertilizers, and other agricultural products; soaps and detergents; scrubbing and cleaning operations, e.g., industrial gases; dyes and colorants; and rubber chemicals.

Uses advised against
No information available

Supplier:
Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number
Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

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

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 3</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Corrosive to metals</td>
<td>Category 1</td>
</tr>
</tbody>
</table>
Label elements

Danger

Hazard statements
Toxic if swallowed
Causes severe skin burns and eye damage
May be corrosive to metals

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response
Specific treatment (see .? on this label)
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see .? on this label)
Absorb spillage to prevent material damage
IF IN EYES: 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.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Reacts with water to evolve heat

Product code: P1315
Product name: POTASSIUM HYDROXIDE, PELLETS, REAGENT, ACS
Precautionary Statements - Storage
Store locked up
Store in corrosive resistant/ container with a resistant inner liner

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>1310-58-3</td>
<td>100</td>
<td>*</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice:
Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact:
Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

Eye Contact:
Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation:
Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or 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. Immediate medical attention is required. Call a physician immediately.

Ingestion:
Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Most important symptoms and effects, both acute and delayed

Symptoms
Severe skin and eye irritation or burns. Causes digestive (gastrointestinal) tract irritation. May cause gastrointestinal (digestive) tract burns. May cause abdominal pain, nausea, vomiting, diarrhea. Causes chemical burns to the respiratory tract. May cause inflammation of the lungs (pneumonitis). May cause pulmonary edema. Coughing. Dyspnea (Shortness of breath and difficulty breathing).

Indication of any immediate medical attention and special treatment needed
Notes to Physician:
Treat symptomatically

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Product code: P1315
Product name: POTASSIUM HYDROXIDE, PELLETS, REAGENT, ACS
5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Sodium oxides

Specific hazards: No information available.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment: Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up: Use appropriate tools to put the spilled solid in a suitable waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Use only in area provided with appropriate exhaust ventilation. Keep away from incompatible materials.

Safe Handling Advice: Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions: Deliquescent. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.
Incompatible Materials:

---

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

#### National occupational exposure limits

**United States**

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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<tr>
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<td>2 mg/m³ Ceiling</td>
<td>2 mg/m³ Ceiling</td>
<td>None</td>
</tr>
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</table>

**Canada**

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide - 1310-58-3</td>
<td>2 mg/m³ Ceiling</td>
<td>2 mg/m³ Ceiling</td>
<td>2 mg/m³ Ceiling</td>
<td>2 mg/m³ Ceiling</td>
</tr>
</tbody>
</table>

**Australia and Mexico**

<table>
<thead>
<tr>
<th>Components</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide 1310-58-3</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Appropriate engineering controls

**Engineering measures to reduce exposure:** Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- **Eye protection:** Goggles. Face-shield.
- **Skin and body protection:** Chemical resistant protective suit. Gloves. boots.
- **Respiratory protection:** Wear respirator with dust filter.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

---

**Product code:** P1315  
**Product name:** POTASSIUM HYDROXIDE, PELLETS, REAGENT, ACS
<table>
<thead>
<tr>
<th>Physical and Chemical Properties</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state:</strong></td>
<td>Solid.</td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
<td>Pellets. Flakes.</td>
</tr>
<tr>
<td><strong>Color:</strong></td>
<td>White.</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Odorless.</td>
</tr>
<tr>
<td><strong>Taste</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Formula:</strong></td>
<td>KOH</td>
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<tr>
<td><strong>Molecular/Formula weight:</strong></td>
<td>56.11</td>
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<td><strong>Flash point (°C):</strong></td>
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<tr>
<td><strong>Flashpoint (°C/°F):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Flash Point Tested according to:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Lower Explosion Limit (%):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Upper Explosion Limit (%):</strong></td>
<td>No information available</td>
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<tr>
<td><strong>Autoignition Temperature (°C/°F):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>13 (1% solution)</td>
</tr>
<tr>
<td><strong>Decomposition temperature(°C/°F):</strong></td>
<td>1384 °C/2523°F</td>
</tr>
<tr>
<td><strong>Density (g/cm³):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Boiling point/range(°C/°F):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Vapor pressure @ 20°C (kPa):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Density (g/cm³):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Evaporation rate:</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Vapor density:</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Odor threshold (ppm):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Miscibility:</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Solubility:</strong></td>
<td>Easily soluble in water</td>
</tr>
<tr>
<td><strong>Insoluble in diethyl ether</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
<td>Pellets. Flakes.</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Odorless.</td>
</tr>
<tr>
<td><strong>Taste</strong></td>
<td>No information available</td>
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<td><strong>Formula:</strong></td>
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<tr>
<td><strong>Flash Point Tested according to:</strong></td>
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<tr>
<td><strong>Vapor pressure @ 20°C (kPa):</strong></td>
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<tr>
<td><strong>Evaporation rate:</strong></td>
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<td><strong>Vapor density:</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Odor threshold (ppm):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Miscibility:</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Solubility:</strong></td>
<td>Easily soluble in water</td>
</tr>
<tr>
<td><strong>Insoluble in diethyl ether</strong></td>
<td></td>
</tr>
</tbody>
</table>

**10. STABILITY AND REACTIVITY**

**Reactivity**
10. STABILITY AND REACTIVITY

Deliquescent.
When dissolved in water or alcohol or when the solution is treated with acid, much heat is generated.
Reacts violently with acids, halogens, halogenated hydrocarbons, maleic anhydride, organic anhydrides, isocyanates, alkylene oxides, epichlorhydrin, aldehydes, alcohols, glycols, phenols, cresols, caprolactum solution.
Also incompatible with nitro compounds (nitrobenzene, nitromethane, nitrogen trichloride), organic materials, acid anhydrides, acid chlorides, magnesium, peroxidized tetrahydrofuran, trichloethylene, chlorine dioxide, maleic dicarbide, sugars.
Solid potassium hydroxide in contact with moisture or water may generate sufficient heat to ignite combustible materials.
When wet attacks metals such as aluminum, tin, lead, and zinc.
Violent reaction or ignition under appropriate conditions with acids, alcohols, p-bis(1,3-dibromoethyl) benzene, cyclopentadiene, germanium, hyponitrous acid, maleic anhydride, nitroalkanes, 2-nitrophenol, potassium peroxodisulfate, sugars, 2,2,3,3-tetrafluoropropanol, thorium dicarbide.
Molten ortho -nitrophenol reacts violently with potassium hydroxide. When potassium hydroxide and tetrachloroethane are heated, a spontaneously flammable gas, chloroacetyleylene, is formed.
When phosphorus is boiled in a solution of potassium hydroxide, phosphine gas is evolved which is spontaneously flammable.
1,2-Dichloroethylene and Potassium hydroxide reaction produces chloroacetyleylene which is spontaneously flammable in air.
Potassium Persulfate and a little Potassium hydroxide and water will ignite.
When wet, attacks metals such as aluminum, tin, lead, and zinc, producing flammable hydrogen gas.
When heated to decomposition it emits toxic fumes of K2O.
Potentially explosive reaction with bromoform + crown ethers, chlorine dioxide, nitrobenzene, nitromethane, nitrogen trichloride, peroxidized tetrahydrofuran, 2,4,6-trinitrotoluene.
Reaction with ammonium hexachloroplatiate(2-) + heat forms heat sensitive explosive product.
Potassium hydroxide will cause explosive decomposition of maleic anhydride.
Detonation will occur when potassium hydroxide is mixed with n-methyl-nitroso urea and methylene chloride.
Nitrogen trichloride explodes on contact with potassium hydroxide.
WHEN HEATED, TRICHLOROETHYLENE & POTASSIUM HYDROXIDE FORM EXPLOSIVE MIXT OF DICHLOROACETYLENE.
NITROGEN TRICHLORIDE EXPLODES ON CONTACT WITH CONCENTRATED POTASSIUM HYDROXIDE.

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Exposure to moisture. Exposure to moist air. Incompatible materials.


Hazardous decomposition products: No information available

Other Information

Corrosivity: Extremely corrosive in presence of aluminum, brass, and zinc.
Slightly corrosive in presence of copper, of stainless steel(304).
Non-corrosive in presence of stainless steel(316).

Special Remarks on Corrosivity: Severe corrosive effect on brass and bronze.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Eyes. Skin. Ingestion. Inhalation.

Acute Toxicity

Product code: P1315
Product name: POTASSIUM HYDROXIDE, PELLETS, REAGENT, ACS
Component Information

Potassium Hydroxide - 1310-58-3

LD50/oral/rat = 284 mg/kg Oral LD50 Rat (LOLI)
273 mg/kg (RTECS)
214-429 mg/kg (European Commission IUCLID dataset)
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 214mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Severe skin irritation. Causes skin burns.

Eye Contact: Severe eye irritation. Causes eye burns. May cause permanent injury.

Inhalation Causes severe irritation and burns of the respiratory tract and mucous membranes, coughing, difficulty breathing. Irritation may lead to chemical pneumonitis, and pulmonary edema.

Ingestion Toxic if swallowed. May cause severe and permanent damage to the digestive tract. Causes severe irritation and burns of the gastrointestinal (digestive) tract with abdominal pain, vomiting, bloody diarrhea, cardiovascular collapse, and possible death. May cause perforation of the digestive tract.

Aspiration hazard No information available

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

Prolonged or repeated skin contact with dilute solutions of potassium hydroxide can cause dermatitis. Prolonged or repeated eye contact with dilute solutions can cause conjunctivitis. Prolonged or repeated Inhalation can produce chronic productive cough, and shortness of breath.

Sensitization:

No information available

Mutagenic Effects:

May affect genetic material

Cytogenic analysis - Hamster ovary 12mmol/L (Registry of Toxic Effects of Chemical Substances)

Carcinogenic effects:

Not considered carcinogenic

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH - Carcinogens</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
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</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
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<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
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</tr>
</tbody>
</table>

Reproductive toxicity

No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure: No information available

STOT - repeated exposure: No information available

Target Organs: Skin. Respiratory system. Eyes.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.
Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
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<td>None</td>
<td>None</td>
</tr>
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### 14. TRANSPORT INFORMATION

**DOT**
- **UN-No:** UN1813
- **Proper Shipping Name:** Potassium hydroxide, solid
- **Hazard Class:** 8
- **Subsidiary Risk:**
- **Packing Group:** II
- **ERG No:** 154
- **Marine Pollutant:** No data available
- **DOT RQ (lbs):** No information available
- **Symbol(s):** R4

**TDG (Canada)**
- **UN-No:** UN1813
- **Proper Shipping Name:** Potassium hydroxide, solid
- **Hazard Class:** 8
- **Subsidiary Risk:** No information available
- **Packing Group:** II
- **Description:** No information available

**ADR**
- **UN-No:** UN1813
- **Proper Shipping Name:** Potassium hydroxide, solid
- **Hazard Class:** 8
- **Packing Group:** II
- **Subsidiary Risk:** No information available
- **Classification Code:** No information available
- **Description:** No information available
- **CEFIC Tremcard No:** No information available

**IMO / IMDG**
- **UN-No:** UN1813
- **Proper Shipping Name:** Potassium hydroxide, solid
- **Hazard Class:** 8
- **Subsidiary Risk:** No information available
- **Packing Group:** II
- **Description:** No information available
- **IMDG Page:** No information available
- **Marine Pollutant:** No information available
- **EMS:** F-A
- **MFAG:** No information available
- **Maximum Quantity:** No information available

**RID**
- **UN-No:** UN1813
- **Proper Shipping Name:** Potassium hydroxide, solid

**Product code:** P1315
**Product name:** POTASSIUM HYDROXIDE, PELLETS, REAGENT, ACS
14. TRANSPORT INFORMATION

Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO
UN-No: UN1813
Proper Shipping Name: Potassium hydroxide, solid
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA
UN-No: UN1813
Proper Shipping Name: Potassium hydroxide, solid
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 8L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>Present</td>
<td>Present KE-29139</td>
<td>Present</td>
<td>Present (1)-369</td>
<td>Present</td>
<td>Present</td>
<td>Present 215-181-3</td>
</tr>
</tbody>
</table>

U.S. Regulations

Potassium Hydroxide

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: Present
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
RI RTK - Hazardous Substances List: Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
1000 lb RQ
100 lb RQ
Louisiana Reportable Quantity List for Pollutants: 1000 lbfinal RQ
454kgfinal RQ
California Directors List of Hazardous Substances: Present
FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1631


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)
### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

### CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>1000 lb final RQ 454 kg final RQ</td>
<td>None</td>
<td>None</td>
<td>None</td>
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### U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

### Canada

**WHMIS hazard class:**
- D1B  Toxic materials
- E  Corrosive material

**Potassium Hydroxide**
- D1B  E
- E 0.056% in aqueous solution, 0.11%, 0.56% in aqueous solution, 2.5%, 2.8%, 5.6% in aqueous solution, 25%, 28%, 33.3%, 40%, 50% in aqueous solution

**Canada Controlled Products Regulation:**
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

### EU Classification

**R-phrase(s)**
- R22 - Harmful if swallowed.
- R35 - Causes severe burns.

**Product code:** P1315

**Product name:** POTASSIUM HYDROXIDE, PELLETS, REAGENT, ACS
S -phrase(s)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 1/2 - Keep locked up and out of the reach of children.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>Xn; R22</td>
<td>No information</td>
<td>S1/2 S26 S36/37/39 S45</td>
</tr>
<tr>
<td></td>
<td>C; R35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
C - Corrosive.
Xn - Harmful.

16. OTHER INFORMATION

Preparation Date: 3/13/2015
Revision Date: 3/13/2015
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet
Material Safety Data Sheet

**Section 1. Chemical Product and Company Identification**

<table>
<thead>
<tr>
<th>Common Name/Trade Name</th>
<th>Potassium hydroxide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>SPECTRUM LABORATORY PRODUCTS INC.</td>
</tr>
<tr>
<td>14422 S. SAN PEDRO STREET</td>
<td></td>
</tr>
<tr>
<td>GARDENA, CA 90248</td>
<td></td>
</tr>
<tr>
<td>CAS#</td>
<td>1310-58-3</td>
</tr>
<tr>
<td>RTECS</td>
<td>TT2100000</td>
</tr>
<tr>
<td>TSCA</td>
<td>TSCA 8(b) inventory: Potassium hydroxide</td>
</tr>
<tr>
<td>Supplier</td>
<td>SPECTRUM LABORATORY PRODUCTS INC.</td>
</tr>
<tr>
<td>14422 S. SAN PEDRO STREET</td>
<td></td>
</tr>
<tr>
<td>GARDENA, CA 90248</td>
<td></td>
</tr>
</tbody>
</table>

**Section 2. Composition and Information on Ingredients**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
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</thead>
<tbody>
<tr>
<td>1) Potassium hydroxide</td>
<td>1310-58-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Toxicological Data on Ingredients**

Potassium hydroxide:

ORAL (LD50): Acute: 273 mg/kg [Rat].

**Section 3. Hazards Identification**

**Potential Acute Health Effects**

Very hazardous in case of skin contact (corrosive, irritant), of eye contact (irritant, corrosive), of ingestion, of inhalation. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

**Potential Chronic Health Effects**

CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Continued on Next Page
### Section 4. First Aid Measures

| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately. |
| Skin Contact | In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately. |
| Serious Skin Contact | Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. |
| Serious Inhalation | Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention. |
| Ingestion | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband. |
| Serious Ingestion | Not applicable. |

### Section 5. Fire and Explosion Data

| Flammability of the Product | Non-flammable. |
| Auto-Ignition Temperature | Not applicable. |
| Flash Points | Not applicable. |
| Flammable Limits | Not applicable. |
| Products of Combustion | Not available. |
| Fire Hazards in Presence of Various Substances | metals, acids |
| Fire Fighting Media and Instructions | Not applicable. |

**Special Remarks on Fire Hazards**

Violent reaction or ignition under appropriate conditions with acids, alcohols, p-bis(1,3-dibromoethyl) benzene, cyclopentadiene, germanium, hyponitrous acid, maleic anhydride, nitroalkanes, 2-nitrophenol, potassium peroxodisulfate, sugars, 2,2,3,3-tetrafluoropropanol, thorium dicarbide. Molten ortho-nitrophenol reacts violently with potassium hydroxide. When potassium hydroxide and tetrachloroethane are heated, a spontaneously flammable gas, chloroacetylene, is formed. When phosphorus is boiled in a solution of potassium hydroxide, phosphine gas is evolved which is spontaneously flammable. 1,2-Dichloroethylene and Potassium hydroxide reaction produces chloroacetylene which is spontaneously flammable in air. Potassium Persulfate and a little Potassium hydroxide and water will ignite. When wet, attacks metals such as aluminum, tin, lead, and zinc, producing flammable hydrogen gas. When heated to decomposition it emits toxic fumes of K2O.

**Special Remarks on Explosion Hazards**

Potentially explosive reaction with bromoform + crown ethers, chlorine dioxide, nitrobenzene, nitromethane, nitrogen trichloride, peroxidized tetrahydrofuran, 2,4,6-trinitrotoluene. Reaction with ammonium hexachloroplatiate(2-) + heat forms heat sensitive explosive product. Potassium hydroxide will cause explosive decomposition of maleic anhydride. Detonation will occur when potassium hydroxide is mixed with n-methyl-nitroso urea and methylene chloride. Nitrogen trichloride explodes on contact with potassium hydroxide. WHEN HEATED, TRICHLOROETHYLENE & ... POTASSIUM HYDROXIDE FORM EXPLOSIVE MIXT OF DICHLOROACETYLENE. NITROGEN TRICHLORIDE EXPLODES ON CONTACT WITH CONCN ... POTASSIUM HYDROXIDE.
Section 6. Accidental Release Measures

Small Spill
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill
Corrosive solid.
Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions
Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as organic materials, metals, acids, moisture.

Storage
Keep container tightly closed. Keep container in a cool, well-ventilated area. Deliquescent.

Section 8. Exposure Controls/Personal Protection

Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits
CEIL: 2 (mg/m³) from OSHA (PEL) [United States]
CEIL: 2 (mg/m³) from ACGIH (TLV) [United States]
Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance
Solid. (Solid pellets. Deliquescent solid. Flakes solid.)

Molecular Weight
56.11 g/mole

pH (1% soln/water)
13 [Basic.]

Boiling Point
Decomposition temperature: 1384°C (2523.2°F)

Melting Point
380°C (716°F)

Critical Temperature
Not available.

Specific Gravity
2.044 (Water = 1)

Vapor Pressure
Not applicable.

Vapor Density
Not available.

Volutility
Not available.

Odor Threshold
Not available.

Water/Oil Dist. Coeff.
Not available.

Ionicity (in Water)
Not available.

Dispersion Properties
See solubility in water.

Solubility
Easily soluble in cold water, hot water. Insoluble in diethyl ether.

Continued on Next Page
Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Incompatible materials, dust generation, exposure to moist air or water.</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Highly reactive with acids. Reactive with oxidizing agents, organic materials, metals, moisture.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Extremely corrosive in presence of aluminum, brass, and zinc. Slightly corrosive in presence of copper, of stainless steel(304). Non-corrosive in presence of stainless steel(316).</td>
</tr>
</tbody>
</table>

Special Remarks on Reactivity
Hygroscopic (absorbs moisture from air). When dissolved in water or alcohol or when the solution is treated with acid, much heat is generated. Reacts violently with acids, halogens, halogenated hydrocarbons, maleic anhydride, organic anhydrides, isocyanates, alkylene oxides, epichlorhydrin, aldehydes, alcohols, glycols, phenols, cresols, caprolactum solution. Also incompatible with nitro compounds (nitrobenzene, nitromethane, nitrogen trichloride), organic materials, acid anhydrides, acid chlorides, magnesium, peroxidized tetrahydrofuran, trichlorethylene, chlorine dioxide, maleic dicarboide, sugars. Solid potassium hydroxide in contact with moisture or water may generate sufficient heat to ignite combustible materials. When wet attacks metals such as aluminum, tin, lead, and zinc.

Special Remarks on Corrosivity
When wet, attacks metals such as aluminum, tin, lead, and zinc, producing flammable hydrogen gas. Severe corrosive effect on brass and bronze.

Polymerization
Will not occur.

Section 11. Toxicological Information

Routes of Entry
Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals
Acute oral toxicity (LD50): 273 mg/kg [Rat].

Chronic Effects on Humans
May cause damage to the following organs: upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans
Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, irritant), of eye contact (corrosive), of ingestion,.

Special Remarks on Toxicity to Animals
Not available.

Special Remarks on Chronic Effects on Humans
May affect genetic material based on animal data.

Special Remarks on other Toxic Effects on Humans
Acute Potential Health Effects:
Skin: Causes severe skin irritation and burns.
Eyes: Causes severe eye irritation and burns. May cause irreversible eye injury.
Inhalation: Causes severe irritation and burns of the respiratory tract and mucous membranes, coughing, difficulty breathing. Irritation may lead to chemical pneumonitis, and pulmonary edema.
Ingestion: Harmful if swallowed. May cause severe and permanent damage to the digestive tract. Causes severe irritation and burns of the gastrointestinal (digestive) tract with abdominal pain, vomiting, bloody diarrhea, cardiovascular collapse, and possible death. May cause perforation of the digestive tract.
Chronic Potential Health Effects:
Prolonged or repeated skin contact with dilute solutions of potassium hydroxide can cause dermatitis. Prolonged or repeated eye contact with dilute solutions can cause conjunctivitis. Prolonged or repeated Inhalation can produce chronic productive cough, and shortness of breath.

Continued on Next Page
Section 12. Ecological Information

Ecotoxicity
Ecotoxicity in water (LC50): 80 mg/l 24 hours [Mosquito Fish].

BOD5 and COD
Not available.

Products of Biodegradation
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation
Not available.

Section 13. Disposal Considerations

Waste Disposal
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
Class 8: Corrosive material

Identification
UNNA: 1813 : Potassium hydroxide, solid PG: II

Special Provisions for Transport
Not available.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
New York release reporting list: Potassium hydroxide
Pennsylvania RTK: Potassium hydroxide
Minnesota: Potassium hydroxide
Massachusetts RTK: Potassium hydroxide
New Jersey: Potassium hydroxide
California Director's List of Hazardous Substances: Potassium hydroxide
TSCA 8(b) inventory: Potassium hydroxide
CERCLA: Hazardous substances.: Potassium hydroxide: 1000 lbs. (453.6 kg)

California Proposition 65
Warnings
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 215-1181-3).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications
WHMIS (Canada) CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
CLASS E: Corrosive solid.
DSCL (EEC)
**Potassium hydroxide**

<table>
<thead>
<tr>
<th>R22: Harmful if swallowed.</th>
<th>S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R35: Causes severe burns.</td>
<td>S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.</td>
</tr>
<tr>
<td>S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</td>
<td></td>
</tr>
</tbody>
</table>

### HMIS (U.S.A.)

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Fire Hazard</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>2</td>
<td>i</td>
</tr>
</tbody>
</table>

### National Fire Protection Association (U.S.A.)

- Flammability: 0
- Reactivity: 1
- Specific hazard: 3

### WHMIS (Canada) (Pictograms)

- Health Hazard
  - Skull and crossbones
- Flammable
  - Flaming torch

### DSCL (Europe) (Pictograms)

- Symbol: Chemical symbol

### TDG (Canada) (Pictograms)

- Symbol: Diamond with exclamation mark

### ADR (Europe) (Pictograms)

- Symbol: Diamond with sea symbol

### Protective Equipment

- Gloves.
- Synthetic apron.
- Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Splash goggles.
### Section 16. Other Information

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>P4370</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
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<tr>
<td>Other Special Considerations</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Validated by Sonia Owen on 3/14/2013.  
Verified by Sonia Owen.  
Printed 3/14/2013.

**Notice to Reader**

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