Potassium hydroxide

sc-215739

Material Safety Data Sheet

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Potassium hydroxide

STATEMENT OF HAZARDOUS NATURE

NFPA

SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
KOH, "caustic potash -flake", potassa, "potassium hydrate", "hydroxyde de potassium", "potash lye", "Sigma Aldrich 306568", APS, TECH00004753, UL00001072, TECH00004435, TECH00001183, TECH00004389, AR00000405, UL00000406, BP00005760, BP00004851, CAPOTA12, CPOT.HYD, "potassium hydroxide pellets, Pronalys"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
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</tr>
<tr>
<td>Toxicity</td>
<td>2</td>
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<tr>
<td>Body Contact</td>
<td>4</td>
<td></td>
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<tr>
<td>Reactivity</td>
<td>0</td>
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<tr>
<td>Chronic</td>
<td>2</td>
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</table>

CANADIAN WHMIS SYMBOLS

MinNil=0
Low=1
Moderate=2
High=3
Extreme=4
CANADIAN WHMIS CLASSIFICATION

CAS 1310-58-3 Potassium hydroxide 10%
- Toxic Material Causing Immediate and Serious Toxic Effects 1
  D1B-Corrosive Material 2
  E-Corrosive Material 1

EMERGENCY OVERVIEW

RISK
Harmful if swallowed.
Causes severe burns.
Risk of serious damage to eyes.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
- The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.
- Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
- Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow.
  Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow.

EYE
- The material can produce severe chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating.
- If applied to the eyes, this material causes severe eye damage.
- Direct eye contact with corrosive bases can cause pain and burns.
  There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris.

SKIN
- The material can produce severe chemical burns following direct contact with the skin.
- Potassium hydroxide burns are not immediately painful; onset of pain may be delayed minutes or hours; thus care should be taken to avoid contamination of gloves and boots.
- Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop.
  The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
  Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED
- The material can cause respiratory irritation in some persons.
  The body's response to such irritation can cause further lung damage.
- Inhaling corrosive bases may irritate the respiratory tract.
  Symptoms include cough, choking, pain and damage to the mucous membrane.
- Inhalation of potassium hydroxide dust may be fatal due to spasm, throat pain, redness, hoarseness of voice, and difficulty in swallowing and breathing.
  There may be inflammation with accumulation of fluid in the lungs.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
  If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

CHRONIC HEALTH EFFECTS
- Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.
  Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis.
- Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
  Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
- Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.
Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>potassium hydroxide</td>
<td>1310-58-3</td>
<td>&gt;85</td>
</tr>
<tr>
<td>water</td>
<td>7732-18-5</td>
<td>&lt;15</td>
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<tr>
<td>may contain potassium carbonate</td>
<td>&lt;2</td>
<td></td>
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</table>

Section 4 - FIRST AID MEASURES

SWALLOWED
- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

EYE
- If this product comes in contact with the eyes
  - Immediately hold eyelids apart and flush the eye continuously with running water.
  - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
  - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.

SKIN
- If skin or hair contact occurs
  - Immediately flush body and clothes with large amounts of water, using safety shower if available.
  - Quickly remove all contaminated clothing, including footwear.
  - Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
  - Transport to hospital, or doctor.

INHALED
- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Inhalation of vapors or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

NOTES TO PHYSICIAN
- For acute or short-term repeated exposures to highly alkaline materials
  - Respiratory stress is uncommon but present occasionally because of soft tissue edema.
  - Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
  - Oxygen is given as indicated.
  - The presence of shock suggests perforation and mandates an intravenous line and fluid administration.

Section 5 - FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Vapor Pressure (mmHG)</th>
<th>Negligible</th>
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<tbody>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not applicable</td>
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<tr>
<td>Specific Gravity (water=1)</td>
<td>2.04 @ 20 C</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not applicable</td>
</tr>
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</table>

EXTINGUISHING MEDIA
- Water spray or fog.
- Foam.
- Dry chemical powder.
● BCF (where regulations permit).

**FIRE FIGHTING**

● Alert Fire Brigade and tell them location and nature of hazard.
● Wear full body protective clothing with breathing apparatus.
● Prevent, by any means available, spillage from entering drains or water course.
● Use fire fighting procedures suitable for surrounding area.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

**GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

● Non combustible.
● Not considered a significant fire risk, however containers may burn.

May emit corrosive fumes.

Solid in contact with water or moisture is highly alkaline and may cause severe skin burns.

**FIRE INCOMPATIBILITY**

None known.

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**Section 6 - ACCIDENTAL RELEASE MEASURES**

**MINOR SPILLS**

● Remove all ignition sources.
● Clean up all spills immediately.
● Avoid contact with skin and eyes.
● Control personal contact by using protective equipment.
● Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
● Check regularly for spills and leaks.

**MAJOR SPILLS**

● Clear area of personnel and move upwind.
● Alert Fire Brigade and tell them location and nature of hazard.
● Wear full body protective clothing with breathing apparatus.
● Prevent, by any means available, spillage from entering drains or water course.

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**Section 7 - HANDLING AND STORAGE**

**PROCEDURE FOR HANDLING**

● Avoid all personal contact, including inhalation.
● Wear protective clothing when risk of exposure occurs.
● Use in a well-ventilated area.
● **WARNING** To avoid violent reaction, ALWAYS add material to water and NEVER water to material.

**RECOMMENDED STORAGE METHODS**

● Glass container is suitable for laboratory quantities
● DO NOT use aluminium, galvanised or tin-plated containers
● Lined metal can, lined metal pail/ can.
● Plastic pail.
● Polyliner drum.
● Packing as recommended by manufacturer.

For low viscosity materials

● Drums and jerricans must be of the non-removable head type.
● Where a can is to be used as an inner package, the can must have a screwed enclosure.

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**STORAGE REQUIREMENTS**

● Plastic bag
● **NOTE** Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.
● Store in original containers.
● Keep containers securely sealed.
● Store in a cool, dry, well-ventilated area.
● Store away from incompatible materials and foodstuff containers.
● DO NOT store near acids, or oxidizing agents
● No smoking, naked lights, heat or ignition sources.
### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

#### EXPOSURE CONTROLS

<table>
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<tr>
<th>Source</th>
<th>Material</th>
<th>TWA ppm</th>
<th>TWA mg/m³</th>
<th>STEL ppm</th>
<th>STEL mg/m³</th>
<th>Peak ppm</th>
<th>Peak mg/m³</th>
<th>TWA F/CC</th>
<th>Notes</th>
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<td>Canada - Alberta Occupational Exposure Limits</td>
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<td>Canada - British Columbia Occupational Exposure Limits</td>
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<td>C 2</td>
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<td>US ACGIH Threshold Limit Values (TLV)</td>
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<td>US - Minnesota Permissible Exposure Limits (PELs)</td>
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<td>Location</td>
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<td>Canada - Nova Scotia Occupational Exposure Limits</td>
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<td>TLV® Basis upper respiratory tract, eye &amp; skin irritation</td>
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<td>Canada - Prince Edward Island Occupational Exposure Limits</td>
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<td>TLV Basis URT, eye, &amp; skin irritation</td>
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The following materials had no OELs on our records
- water CAS7732-18-5

**PERSONAL PROTECTION**

**RESPIRATOR**
- Particulate. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

**EYE**
- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

**HANDS/FEET**
- Elbow length PVC gloves
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include frequency and duration of contact, chemical resistance of glove material, glove thickness and dexterity

**OTHER**
- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
ENGINEERING CONTROLS

- Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- Process controls which involve changing the way a job activity or process is done to reduce the risk.
- Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

- Solid.
- Mixes with water.
- Corrosive.
- Alkaline.

<table>
<thead>
<tr>
<th>State</th>
<th>Divided solid</th>
<th>Molecular Weight</th>
<th>56.11</th>
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<tr>
<td>Melting Range (°F)</td>
<td>Approx.680</td>
<td>Viscosity</td>
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<tr>
<td>Boiling Range (°F)</td>
<td>2401</td>
<td>Solubility in water (g/L)</td>
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<td>Flash Point (°F)</td>
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<td>pH (1% solution)</td>
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<td>Decomposition Temp (°F)</td>
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<td>pH (as supplied)</td>
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<tr>
<td>Autoignition Temp (°F)</td>
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<td>Vapor Pressure (mmHG)</td>
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<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not applicable</td>
<td>Specific Gravity (water=1)</td>
<td>2.04 @ 20 C</td>
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<tr>
<td>Lower Explosive Limit (%)</td>
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<td>Relative Vapor Density (air=1)</td>
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<tr>
<td>Volatile Component (%vol)</td>
<td>Negligible</td>
<td>Evaporation Rate</td>
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</tbody>
</table>

APPEARANCE

- Solid, in the form of pellets, flakes, sticks or lumps; hygroscopic; soluble in water, alcohol and glycerol. HIGHLY CORROSIVE in solid and solution form. Generates heat when dissolved in water. Reacts violently with strong acids and many organic chemicals.

CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

STORAGE INCOMPATIBILITY

- Reacts vigorously with acids.
- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
- Avoid contact with copper, aluminium and their alloys.
- Sodium hydroxide/ potassium hydroxide
- reacts with water evolving heat and corrosive fumes
- reacts violently with acids, trans-acetylene dichloride, aminotetrazole, p-bis(1,3-dibromoethyl), benzene, bromoform, halogenated compounds, nitrogen-containing compounds, organic halogens, chlorine dioxide ((explodes), chloroform, cresols, cyclopentadiene, 4-chloro-2-methylphenol, cis-dichloroethylene, 2,2-dichloro-3,3-dimethylbutane, ethylene chlorohydrin, germanium, iodine pentfluoride, maleic anhydride, p-nitrotoluene,nitrogen trichloride, o-nitrophenol, phosphonium iodide, potassium peroxodisulfate, propylene oxide, 1,2,4,5-tetrachlorobenzene (highly toxic substance is forme), 2,2,3,3-tetrafluoro-1-propanol, tetrahydrofuran, thorium dicarbide, trichloroethanol, 2,4,6-trinitrotoluene, vinyl acetate
- reacts with fluorine, nitroalkanes, (forming explosive compounds)
- incompatible with acetic acid, acetaldehyde, acetic anhydride, acrolein, acrylonitrile, allyl chloride, organic anhydride, acrylates, alcohols, aldehydes, alkyne oxides, substituted allyle, ammonium chloroplatinate, benzanthrone, bromine, benzene-1,4-diol, carbon dioxide, cellulose nitrate, chlorine trifluoride, 4-chlorobutyronitrile, chlorohydrin, chloronitrotoluenes, chlorosulfonic acid, cinnamaldehyde, caprolactam solution, chlorocresols, 1,2-dichloroethylene, epichlorohydrin, ethylene cyanhydrin, formaldehyde (forms formic acid and flammable hydrogen gas), glycols, glyoxal, hexachloroplatinate, hydrogen sulfide, hydroquinone, iron-silicon, isocyanates, ketones, methyl azide, 4-methyl-2-nitrophenol, mineral acids (forming corresponding salt),nitrobenzene, N-nitrosohydroxylamine, nitrates pentol, phenols, phosphorus, phosphorus pentaoxide, beta-propiolactone, sodium, sulfur dioxide,
tetrahydroborate, 1,1,1,2-tetrachloroethane, 2,2,2-trichloroethanol, trichloronitromethane, zirconium

For incompatible materials - refer to Section 7 - Handling and Storage.

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Section 11 - TOXICOLOGICAL INFORMATION

potassium hydroxide

TOXICITY AND IRRITATION

- Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.
- The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
- The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

CARCINOGEN

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>US - Rhode Island Hazardous Substance List</th>
<th>IARC</th>
</tr>
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<tbody>
<tr>
<td>potassium hydroxide</td>
<td></td>
<td></td>
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Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
<th>Bioaccumulation</th>
<th>Mobility</th>
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</thead>
<tbody>
<tr>
<td>potassium hydroxide</td>
<td>No Data Available</td>
<td>No Data Available</td>
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GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

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<tr>
<th>Name / EHS</th>
<th>TRN</th>
<th>A1a</th>
<th>A1b</th>
<th>A1</th>
<th>A2</th>
<th>B1</th>
<th>B2</th>
<th>C1</th>
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<th>D1</th>
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<th>E1</th>
<th>E2</th>
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<tr>
<td>Potassium hydroxide (sol.)</td>
<td>117</td>
<td>616</td>
<td>Ino</td>
<td>0</td>
<td>Ino</td>
<td>2</td>
<td>NI</td>
<td>2</td>
<td>(2)</td>
<td>(3)</td>
<td>3C</td>
<td>3</td>
<td>D</td>
<td>3</td>
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</table>

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships)
NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acute aquatic toxicity LC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation & corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal ammunities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitizing, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

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Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions
A. General Product Information
Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)

Disposal Instructions
All waste must be handled in accordance with local, state and federal regulations.
Containers may still present a chemical hazard/danger when empty.
Return to supplier for reuse/recycling if possible.
Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorized landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.
Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Treat and neutralise at an approved treatment plant. Treatment should involve: Mixing or slurrying in water; Neutralisation followed by: burial in a land-fill specifically licenced to accept chemical and/or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

### Section 14 - TRANSPORTATION INFORMATION

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<tr>
<td>Vessel stowage: Other:</td>
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</table>

Hazardous materials descriptions and proper shipping names:
Potassium hydroxide, solid

**Air Transport IATA:**

| ICAO/IATA Class: | 8 |
| UN/ID Number: | 1813 |
| Packing Group: | II |
| Special provisions: | None |

Cargo Only

| Packing Instructions: | 863 |
| Maximum Qty/Pack: | 50 kg |
| Passenger and Cargo |
| Packing Instructions: | 859 |
| Maximum Qty/Pack: | 15 kg |
| Passenger and Cargo |
| Limited Quantity
| Packing Instructions: | Y844 |
| Maximum Qty/Pack: | 5 kg |

Shipping name: POTASSIUM HYDROXIDE, SOLID
potassium hydroxide (CAS: 1310-58-3) is found on the following regulatory lists:
- "Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)";
- "Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)";
- "Canada - Saskatchewan Industrial Hazardous Substances","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada CEPA Environmental Registry Substance Lists - List of substances on the DSL that meet the human health criteria for categorization (English)";
- "Canada Domestic Substances List (DSL)";
- "Canada Ingredient Disclosure List (SOR/88-64)";
- "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)";
- "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","International Council of Chemical Associations (ICCA) - High Production Volume List";
- "US ACGIH Threshold Limit Values (TLVs)";
- "US CWA (Clean Water Act) - List of Hazardous Substances","US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances";
- "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US DOE Temporary Emergency Exposure Limits (TEELs)";
- "US EPA High Production Volume Chemicals Additional List","US FDA CFSAN GRAS Substances evaluated by the Select Committee on GRAS Substances (SCOGS)";
- "US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use as Components of Coatings - Acrylate ester copolymer coating","US Food Additive Database","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)";
- "US Postal Service (USPS) Hazardous Materials Table - Phone Service Mailability Guide","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US USDA National Organic Program - Nonagricultural (nonorganic) substances allowed as ingredients in or on processed products labeled as “organic” or “made with organic (specified ingredients or food group(s))”

Regulations for ingredients

water (CAS: 7732-18-5) is found on the following regulatory lists:
- "Canada Domestic Substances List (DSL)"
- "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)"
- "US FMA Air Freshener Fragrance Ingredient Survey Results","US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory";
- "US TSCA Section 8 (a) Inventory Update Rule (IUR) - Partial Exemptions"

LIMITED EVIDENCE

- Cumulative effects may result following exposure*.
- * (limited evidence).

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.
- For detailed advice on Personal Protective Equipment, refer to the following U.S. Regulations and Standards:
  - OSHA Standards - 29 CFR
1910.132 - Personal Protective Equipment - General requirements
1910.133 - Eye and face protection
1910.134 - Respiratory Protection
1910.136 - Occupational foot protection
1910.138 - Hand Protection
Eye and face protection - ANSI Z87.1
Foot protection - ANSI Z41
Respirators must be NIOSH approved.

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Issue Date: Aug-12-2010
Print Date: Jan-27-2012