# POTASSIUM HYDROXIDE

**Bio-Strategy Pty Ltd**

Chemwatch: 1813
Version No: 9.1.1.1
Safety Data Sheet according to WHS and ADG requirements

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## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>POTASSIUM HYDROXIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemical Name</strong></td>
<td>potassium hydroxide</td>
</tr>
<tr>
<td><strong>Synonyms</strong></td>
<td>KOH, caustic potash - flake, potassa, potassium hydrate, hydroxide de potassium, potash lye, Sigma Aldrich 306568, APS TECH100004753 UL00001072 TECH100004436 TECH100001183, TECH100004389 AR00000405 UL00000406 BP00005760 BP00004851, CAPOTA12 CPOT.HYD, potassium hydroxide pellets, Pronalysis</td>
</tr>
<tr>
<td><strong>Proper shipping name</strong></td>
<td>POTASSIUM HYDROXIDE, SOLID</td>
</tr>
<tr>
<td><strong>Chemical formula</strong></td>
<td>KOH</td>
</tr>
<tr>
<td><strong>Other means of identification</strong></td>
<td>32058608, 26668263</td>
</tr>
<tr>
<td><strong>CAS number</strong></td>
<td>1310-58-3</td>
</tr>
</tbody>
</table>

### Relevant identified uses of the substance or mixture and uses advised against

Manufacture of liquid soaps, paint and varnish removers; manufacture of potassium salts such as potassium carbonate and potassium pyrophosphate; used as the electrolyte in alkaline storage batteries, in electroplating, lithography and photoengraving; printing inks; in dyestuffs, liquid fertilizers, herbicides and as a food additive; mordant for wood; absorbent for carbon dioxide and hydrogen sulphide; in analytical chemistry and in organic syntheses.

### Details of the supplier of the safety data sheet

- **Registered company name**: Bio-Strategy Pty Ltd
- **Address**: Unit 1A/60 Enterprise Place QLD 4173 Australia
- **Telephone**: 1300 727 696
- **Fax**: Not Available
- **Website**: www.bio-strategy.com.au
- **Email**: csaus@bio-strategy.com

### Emergency telephone number

- **Association / Organisation**: Not Available
- **Emergency telephone numbers**: 07 3009 4188
- **Other emergency telephone numbers**: Not Available

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## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

### HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

<table>
<thead>
<tr>
<th><strong>Poisons Schedule</strong></th>
<th>S6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification</strong></td>
<td>Metal Corrosion Category 1, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1</td>
</tr>
</tbody>
</table>

### Label elements

**Hazard pictogram(s)**

[![Hazard pictogram](image)](image)

**SIGNAL WORD**: DANGER
Hazard statement(s)

| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P234: Keep only in original container.
- P270: Do not eat, drink or smoke when using this product.

Precautionary statement(s) Response

- 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.
- 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.

Precautionary statement(s) Storage

- P405: Store locked up.

Precautionary statement(s) Disposal

- P501: Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS No</th>
<th>% [weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1310-58-3</td>
<td>&gt;85</td>
<td>potassium hydroxide</td>
</tr>
<tr>
<td></td>
<td>7732-18-5</td>
<td>&lt;15</td>
<td>water</td>
</tr>
<tr>
<td></td>
<td>Not Available</td>
<td>&lt;2</td>
<td>may contain potassium carbonate</td>
</tr>
</tbody>
</table>

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact

- 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.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

- 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.

Inhalation

- If fumes or combination 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.
- Transport to hospital, or doctor, without delay.
- Inhalation of vapours 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.

This must definitely be left to a doctor or person authorised by him/her.

Ingestion

- 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.

Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e., becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay.

Indication of any immediate medical attention and special treatment needed

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.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.
- Alkalis continue to cause damage after exposure.

INGESTION:
- Milk and water are the preferred diluents.
- No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.
- * Catharsis and emesis are absolutely contra-indicated.
- * Activated charcoal does not absorb alkali.
- * Gastric lavage should not be used.

Supportive care involves the following:
- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:
- Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media
- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

Special hazards arising from the substrate or mixture

| Fire Incompatibility | None known. |

Advice for firefighters

**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.

**Fire/Explosion Hazard**
- 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.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

**Minor Spills**
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact with the substance, 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.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling
### Safe 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.

### Other information
- 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 foodstuffs.
- **DO NOT** store near acids, or oxidising agents.
- No smoking, naked lights, heat or ignition sources.

### Conditions for safe storage, including any incompatibilities
- Glass container is suitable for laboratory quantities
- **DO NOT** use aluminium, galvanised or tin-plated containers
- Lined metal can, lined metal pallet, can
- Plastic pallet
- Polyliner drum
- Packing as recommended by manufacturer

### Suitable container
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 end closure.

For materials with a viscosity of at least 2680 cSt (23 deg. C) and solids (between 15 C deg. and 40 deg C.):
- Removable head packaging
- Cans with friction closures and
- low pressure tubes and cartridges may be used.

### Storage incompatibility
- Reacts vigorously with acids
- Avoid strong acids, acid chlorides, acid anhydrides and chlorofomates.
- 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-dibromomethyl), benzene, bromofom, halogenated compounds, nitrogen-containing compounds, organic halogens, chlorine dioxide (isoxides), chloroform, cresol, cyclopentadiene, 4-chloro-2-methylen, cis-dichloroethylen, 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 formate), 2,2,3,3-tetrafluoro-1-propanol, tetrahydrofuran, thorium dicarbide, trichloroethanol, 2,4,6-trinitrotoluene, vinyl acetate
- For materials with a viscosity of at least 2680 cSt (23 deg. C) and solids (between 15 C deg. and 40 deg C.):
- REMOVAL: by automatic, continuous removal systems

### Practice 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.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Control parameters

<table>
<thead>
<tr>
<th>OCCUPATIONAL EXPOSURE LIMITS (OEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INGREDIENT DATA</strong></td>
</tr>
<tr>
<td>Source</td>
</tr>
<tr>
<td>Australia Exposure Standards</td>
</tr>
</tbody>
</table>

#### EMERGENCY LIMITS

<table>
<thead>
<tr>
<th>Ingredient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material name</td>
</tr>
<tr>
<td>TEEL-1</td>
</tr>
<tr>
<td>TEEL-2</td>
</tr>
<tr>
<td>TEEL-3</td>
</tr>
<tr>
<td>potassium hydroxide</td>
</tr>
<tr>
<td>Original IDLH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>may contain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>carbonate</td>
<td></td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

#### Exposure 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.
Personal protection

- 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.

Eye and face protection

- Ear protection for noise if conditions where worker exposure potential is high, wear full-face air-supplied breathing apparatus and full protective suit.

Skin protection

- Elbow length PVC gloves

Hands/feet protection

- The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
- Personal hygiene is a key element of effective hand care.

Body protection

- See Other protection below

Other protection

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

Thermal hazards

- Not Available

Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the: "Forsberg Clothing Performance Index". The effect(s) of the following substance(s) are taken into account in the computer-generated selection:

POTASSIUM HYDROXIDE

<table>
<thead>
<tr>
<th>Material</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTYL</td>
<td>A</td>
</tr>
<tr>
<td>NATURAL+NEOPRENE</td>
<td>A</td>
</tr>
<tr>
<td>NEOPRENE</td>
<td>A</td>
</tr>
<tr>
<td>NITRILE</td>
<td>A</td>
</tr>
<tr>
<td>NITRILE+PVC</td>
<td>A</td>
</tr>
<tr>
<td>PVC</td>
<td>A</td>
</tr>
<tr>
<td>NATURAL RUBBER</td>
<td>B</td>
</tr>
</tbody>
</table>

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

<table>
<thead>
<tr>
<th>Required Minimum Protection Factor</th>
<th>Half-Face Respirator</th>
<th>Full-Face Respirator</th>
<th>Powered Air Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 10 x ES</td>
<td>P1 Air-line*</td>
<td>-</td>
<td>PAPR-P1</td>
</tr>
<tr>
<td>up to 50 x ES</td>
<td>Air-line**</td>
<td>P2</td>
<td>PAPR-P2</td>
</tr>
<tr>
<td>up to 100 x ES</td>
<td>-</td>
<td>P3</td>
<td>-</td>
</tr>
<tr>
<td>100+ x ES</td>
<td>-</td>
<td>Air-line*</td>
<td>-</td>
</tr>
</tbody>
</table>

* - Negative pressure demand ** - Continuous flow
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker’s exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

**Appearance**

White or slightly yellow 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.

**Physical state**

- Divided Solid

**Odour**

- Not Available

**Odour threshold**

- Not Available

**pH (as supplied)**

- Not Applicable

**Relative density (Water = 1)**

- 2.04 @ 20 C

**Partition coefficient n-octanol / water**

- Not Available

**Auto-ignition temperature (°C)**

- Not Applicable

**Decomposition temperature**

- Not Applicable

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Continued...
SECTION 10 STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>See section 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td></td>
</tr>
<tr>
<td>▶ Unstable in the presence of incompatible materials.</td>
<td></td>
</tr>
<tr>
<td>▶ Product is considered stable.</td>
<td></td>
</tr>
<tr>
<td>▶ Hazardous polymerisation will not occur.</td>
<td></td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>See section 7</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>See section 7</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>See section 7</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>See section 5</td>
</tr>
</tbody>
</table>

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

**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. Other symptoms include burning sensation, coughing, wheezing, headache, nausea and vomiting.

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.

**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.

**Skin Contact**
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.

Skin exposure to corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.

**Eye**
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. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.

**Chronic**
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.

Long term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body 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.

**Potassium hydroxide**

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (rat) LD50: 273 mg/kg</td>
<td>Eye (rabbit): 1mg/24h rinse-moderate</td>
</tr>
<tr>
<td>Skin (human): 50 mg/24h SEVERE</td>
<td>Skin (rabbit): 50 mg/24h SEVERE</td>
</tr>
</tbody>
</table>

**Water**

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**Legend:**
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data.
POTASSIUM HYDROXIDE

Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.

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.

WATER

No significant acute toxicological data identified in literature search.

<table>
<thead>
<tr>
<th>Acute Toxicity</th>
<th>Carcinogenicity</th>
<th>Reproductivity</th>
<th>Serious Eye Damage/Irritation</th>
<th>STOT - Single Exposure</th>
<th>STOT - Repeated Exposure</th>
<th>Aspiration Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity**

<table>
<thead>
<tr>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>80mg/L</td>
<td>4</td>
</tr>
<tr>
<td>NOEC</td>
<td>96</td>
<td>Fish</td>
<td>56mg/L</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**Legend:**
- Data available but does not fill the criteria for classification
- Data available to make classification
- Data Not Available to make classification

**Prevent, by any means available, spillage from entering drains or water courses. DO NOT discharge into sewer or waterways.**

**Persistence and degradability**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>LOW</td>
<td>LOW</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>LOW (LogKOW = -1.38)</td>
</tr>
</tbody>
</table>

**Mobility in soil**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>LOW (KOC = 14.3)</td>
</tr>
</tbody>
</table>

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

- 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 authorised landfill.
  - Where possible retain label warnings and SDS 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
  - 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.

- 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 licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers.

SECTION 14 TRANSPORT INFORMATION

Labels Required

- Marine Pollutant: NO
- HAZCHEM: 2W

Land transport (ADG)

- UN number: 1813*
- UN proper shipping name: POTASSIUM HYDROXIDE, SOLID
- Transport hazard class(es): Class 8
- Subrisk: Not Applicable
- Packing group: II
- Environmental hazard: Not Applicable
- Special precautions for user: Special provisions: Not Applicable
- Limited quantity: 1 kg

Air transport (ICAO-IATA / DGR)

- UN number: 1813*
- UN proper shipping name: Potassium hydroxide, solid
- Transport hazard class(es): ICAO/IATA Class 8
- ICAO / IATA Subrisk: Not Applicable
- ERG Code: 8L
- Packing group: II
- Environmental hazard: Not Applicable
- Special precautions for user: Special provisions: Not Applicable
- Cargo Only Packing Instructions: 863
- Cargo Only Maximum Qty / Pack: 50 kg
- Passenger and Cargo Packaging Instructions: 859
- Passenger and Cargo Maximum Qty / Pack: 15 kg
- Passenger and Cargo Limited Quantity Packing Instructions: Y844
- Passenger and Cargo Limited Maximum Qty / Pack: 5 kg

Sea transport (IMDG-Code / GGVSee)

- UN number: 1813*
- UN proper shipping name: POTASSIUM HYDROXIDE, SOLID
- Transport hazard class(es): IMDG Class 8
- IMDG Subrisk: Not Applicable
- Packing group: II
- Environmental hazard: Not Applicable
- Special precautions for user: Special provisions: Not Applicable
- Limited Quantities: 1 kg

Chemwatch: 1813
Version No: 9.1.1.1
Page 8  of 9
POTASSIUM HYDROXIDE
Issue Date: 27/06/2017
Print Date: 16/08/2017

Continued...
Transport in bulk according to Annex II of MARPOL and the IBC code

<table>
<thead>
<tr>
<th>Source</th>
<th>Product name</th>
<th>Pollution Category</th>
<th>Ship Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk</td>
<td>Potassium hydroxide solution</td>
<td>Y</td>
<td>3</td>
</tr>
</tbody>
</table>

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

**POTASSIUM HYDROXIDE (1310-58-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- Australia Exposure Standards
- Australia Inventory of Chemical Substances (AICS)
- Australia Hazardous Substances Information System - Consolidated Lists

**WATER (7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- Australia Inventory of Chemical Substances (AICS)

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - NDSL</td>
<td>N (water; potassium hydroxide)</td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Y</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>Y</td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>N (potassium hydroxide)</td>
</tr>
<tr>
<td>Korea - KECI</td>
<td>Y</td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>Y</td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>Y</td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>Y</td>
</tr>
</tbody>
</table>

Legend:  
Y = All ingredients are on the inventory  
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information

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.

The 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. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average  
PC – STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL: No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LDL: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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TEL (+61 3) 9572 4700.