Caustic Soda 50%

Nowchem

Version No: 1.2
Safety Data Sheet according to WHS and ADG requirements

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

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Caustic Soda 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
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</tr>
<tr>
<td>Proper shipping name</td>
<td>SODIUM HYDROXIDE SOLUTION</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

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

Relevant identified uses General Cleaning, Water Treatment, pH Correction

Details of the supplier of the safety data sheet

Registered company name Nowchem
Address 112A Albatross Road NSW Australia
Telephone (02) 4421 4099
Fax (02) 4421 4932
Website www.nowchem.com.au
Email sales@nowchem.com.au

Emergency telephone number

Association / Organisation Nowchem
Emergency telephone numbers (02) 4421 4099
Other emergency telephone numbers 0413 809 255

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>CHEMWATCH HAZARD RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Flammability</td>
</tr>
<tr>
<td>Toxityy</td>
</tr>
<tr>
<td>Body Contact</td>
</tr>
<tr>
<td>Reactivity</td>
</tr>
<tr>
<td>Chronic</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Min</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

Poisons Schedule 6

Classification [1] Serious Eye Damage Category 1, Skin Corrosion/Irritation Category 1A, Metal Corrosion Category 1, Specific target organ toxicity - single exposure Category 3(respiratory tract irritation)


Label elements
GHS label elements

**SIGNAL WORD** DANGER

### Hazard statement(s)

- **H318** Causes serious eye damage.
- **H314** Causes severe skin burns and eye damage.
- **H290** May be corrosive to metals.
- **H335** May cause respiratory irritation.

### Precautionary statement(s) Prevention

- **P101** If medical advice is needed, have product container or label at hand.
- **P102** Keep out of reach of children.
- **P103** Read label before use.
- **P260** Do not breathe dust/fume/gas/mist/vapours/spray.
- **P271** Use only outdoors or in a well-ventilated area.
- **P280** Wear protective gloves/protective clothing/eye protection/face protection.
- **P234** Keep only in original container.

### 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.
- **P304+P340** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- **P310** Immediately call a POISON CENTER or doctor/physician.
- **P363** Wash contaminated clothing before reuse.
- **P390** Absorb spillage to prevent material damage.

### Precautionary statement(s) Storage

- **P405** Store locked up.
- **P403+P233** Store in a well-ventilated place. Keep container tightly closed.

### Precautionary statement(s) Disposal

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

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

**Substances**

See section below for composition of Mixtures

**Mixtures**

<table>
<thead>
<tr>
<th>CAS No</th>
<th>% [weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310-73-2</td>
<td>50</td>
<td>sodium hydroxide</td>
</tr>
</tbody>
</table>

### 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 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.

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).

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).

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.

Observe the patient carefully.

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 casually 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.
- 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.
* 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).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

<table>
<thead>
<tr>
<th>Fire Incompatibility</th>
<th>None known</th>
</tr>
</thead>
</table>

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.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

**Fire/Explosion Hazard**

- Non combestible.
- Not considered a significant fire risk, however containers may burn.
- May emit corrosive fumes.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

**Minor Spills**

- 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.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

**Major Spills**

Chemical Class: bases

For release onto land: recommended sorbents listed in order of priority.

<table>
<thead>
<tr>
<th>SORBENT</th>
<th>RANK</th>
<th>APPLICATION</th>
<th>COLLECTION</th>
<th>LIMITATIONS</th>
</tr>
</thead>
</table>

Continued...
## TYPE

### LAND SPILL - SMALL

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
<th>Equipment</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-linked polymer - particulate</td>
<td>1</td>
<td>shovel, shovel</td>
<td>R, W, SS</td>
</tr>
<tr>
<td>Cross-linked polymer - pillow</td>
<td>1</td>
<td>throw, pitchfork</td>
<td>R, DGC, RT</td>
</tr>
<tr>
<td>Sorbent clay - particulate</td>
<td>2</td>
<td>shovel, shovel</td>
<td>R, I, P</td>
</tr>
<tr>
<td>Foamed glass - pillow</td>
<td>2</td>
<td>throw, pitchfork</td>
<td>R, P, DGC, RT</td>
</tr>
<tr>
<td>Expanded minerals - particulate</td>
<td>3</td>
<td>shovel, shovel</td>
<td>R, I, W, P, DGC</td>
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<tr>
<td>Foamed glass - particulate</td>
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<td>R, W, P, DGC,</td>
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### LAND SPILL - MEDIUM

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<th>Equipment</th>
<th>Effectiveness</th>
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</thead>
<tbody>
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<td>Cross-linked polymer - particulate</td>
<td>1</td>
<td>blower, skiploader</td>
<td>R, W, SS</td>
</tr>
<tr>
<td>Sorbent clay - particulate</td>
<td>2</td>
<td>blower, skiploader</td>
<td>R, I, P</td>
</tr>
<tr>
<td>Expanded mineral - particulate</td>
<td>3</td>
<td>blower, skiploader</td>
<td>R, I, W, P, DGC</td>
</tr>
<tr>
<td>Cross-linked polymer - pillow</td>
<td>3</td>
<td>throw, skiploader</td>
<td>R, DGC, RT</td>
</tr>
<tr>
<td>Foamed glass - particulate</td>
<td>4</td>
<td>throw, skiploader</td>
<td>R, W, P, DGC,</td>
</tr>
</tbody>
</table>

### Legend

- DGC: Not effective where ground cover is dense
- R: Not reusable
- I: Not incinerable
- P: Effectiveness reduced when rainy
- RT: Not effective where terrain is rugged
- SS: Not for use within environmentally sensitive sites
- W: Effectiveness reduced when windy

Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control; R.W Melvold et al; Pollution Technology Review No. 150: Noyes Data Corporation 1988

- 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.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue (see Section 13 for specific agent).
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

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

### SECTION 7 HANDLING AND STORAGE

#### Precautions for 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.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, **DO NOT** eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer’s storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
- **DO NOT** allow clothing wet with material to stay in contact with skin

#### Safe handling

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuffs containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer’s storage and handling recommendations contained within this SDS.
- **DO NOT** store near acids, or oxidising agents
- No smoking, naked lights, heat or ignition sources.

#### Other information

- **DO NOT** use aluminium, galvanised or tin-plated containers
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

### Conditions for safe storage, including any incompatibilities

- **DO NOT** store with acids, or oxidising agents
- Caustic Soda 50%

- **Caution**
- **Warning**
- **Danger**
- **Poison**
- **Flammable**
- **Explosive**
- **Corrosive**

- **Hazard Class**
- **UN Number**
- **Country of Origin**
- **Packaging**
- **Storage Conditions**
- **Stability**
- **Transport Information**
- **Disposal**
- **Additional Information**
- **References**

- **First Aid Measures**
- **Firefighting Measures**
- **Spill Containment and Clean-up**
- **Handling and Storage Precautions**
- **Personal Protective Equipment**
- **Other Protective Measures**
- **Exposure Controls / Personal Protection**
- **Physical and Chemical Properties**
- **Stability and Reactions**
- **Hazardous Decomposition or Materials to Avoid**
- **Disposal Considerations**
- **Other (International)**

- **Regulatory Information**
- **Legal Requirements**
- **Transport Information**
- **International**
- **Other**

- **Labeling**
- **GHS**
- **DOT**
- **International**
- **Other**

- **Other information**

- **Caution**
- **Warning**
- **Danger**
- **Poison**
- **Flammable**
- **Explosive**
- **Corrosive**

- **Hazard Class**
- **UN Number**
- **Country of Origin**
- **Packaging**
- **Storage Conditions**
- **Stability**
- **Transport Information**
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- **Additional Information**
- **References**

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- **Labeling**
- **GHS**
- **DOT**
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- **Other**

- **Other information**

- **Caution**
- **Warning**
- **Danger**
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- **UN Number**
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- **References**

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- **Stability and Reactions**
- **Hazardous Decomposition or Materials to Avoid**
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- **Other (International)**

- **Regulatory Information**
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- **International**
- **Other**

- **Labeling**
- **GHS**
- **DOT**
- **International**
- **Other**

- **Other information**
SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

<table>
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<tr>
<th>INGREDIENT DATA</th>
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<tbody>
<tr>
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<tr>
<td>Australia Exposure Standards</td>
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</table>

EMERGENCY LIMITS

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<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
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<tr>
<td>sodium hydroxide</td>
<td>Sodium hydroxide</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

MATERIAL DATA

for sodium hydroxide:

- The TLV-C is recommended based on concentrations that produce noticeable but not excessive, ocular and upper respiratory tract irritation.

Exposure controls

Appropriate 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:

  - 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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee oversupply.

  - Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area.

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.

Eye and face protection

- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adhesion for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first sign of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]. [AS/NZS 1306 or national equivalent].

Skin protection

See Hand protection below.
Hands/feet protection

- Elbow length PVC gloves
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

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

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

Body protection

- See Other protection below

Other protection

- Overalls
- PVC Apron
- PVC protective suit may be required if exposure severe
- Eyewash unit.
- Ensure there is ready access to a safety shower

Thermal hazards

Not Available

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Clear Colourless Liquid</th>
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<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
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<td>Odour</td>
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<td>Odour threshold</td>
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<td>pH (as supplied)</td>
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<td>Initial boiling point and boiling range (°C)</td>
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<td>Flash point (°C)</td>
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<td>Evaporation rate</td>
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<td>Flammability</td>
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<td>Upper Explosive Limit (%)</td>
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<tr>
<td>Lower Explosive Limit (%)</td>
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<td>Vapour pressure (kPa)</td>
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<td>Solubility in water (g/L)</td>
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<td>Partition coefficient n-octanol / water</td>
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<td>Auto-ignition temperature (°C)</td>
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<td>Decomposition temperature</td>
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<td>Molecular weight (g/mol)</td>
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<td>Taste</td>
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<td>Explosive properties</td>
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<td>Oxidising properties</td>
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<td>Surface Tension (dyn/cm or mN/m)</td>
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<td>Gas group</td>
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<td>12 - 14</td>
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<tr>
<td>VOC g/L</td>
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</table>

SECTION 10 STABILITY AND REACTIVITY

Reactivity

- See section 7

Chemical stability

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Possibility of hazardous reactions

- See section 7

Conditions to avoid

- See section 7

Incompatible materials

- See section 7

Hazardous decomposition products

- See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following...
Inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.

Inhalation of alkaline corrosives may produce irritation of the respiratory tract with coughing, choking, pain and mucous membrane damage. Pulmonary oedema may develop in more severe cases; this may be immediate or in most cases following a latent period of 5-72 hours. Symptoms may include a tightness in the chest, dyspnoea, frothy sputum, cyanosis and dizziness. Findings may include hypotension, a weak and rapid pulse and moist rales. Severe acute sodium hydroxide dust inhalation exposure may be fatal due to spasms, inflammation and oedema of the larynx and bronchi, chemical pneumonitis and severe pulmonary oedema.

Symptoms of overexposure include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

The material has **NOT** been classified by EC Directives or other classification systems as 'harmful by inhalation'. This is because of the lack of corroborating animal or human evidence. In the absence of such evidence, care should be taken nevertheless to ensure exposure is kept to a minimum and that suitable control measures be used, in an occupational setting to control vapours, fumes and aerosols.

**Skin Contact**

The material can produce severe chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

Sodium 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.

A 5% aqueous solution of sodium hydroxide applied to the skin of rabbits for 4 hours produced severe necrosis. Instillation of a 1% solution into the conjunctival sac failed to produce ocular or conjunctival injury in rabbits provided the eye was promptly irrigated with copious amounts of water.

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, puncture wounds 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.

**Eye**

When applied to the eye(s) of animals, the material produces severe corneal lesions which are present twenty-four hours or more after instillation. Direct contact with alkaline corrosives may produce pain and burns. Oedema, destruction of the epithelium, corneal opacification and iritis may occur. In less severe cases these symptoms tend to resolve. In severe injuries the full extent of the damage may not be immediately apparent with late complications comprising a persistent oedema, vascularisation and corneal scarring, permanent opacity, staphyloma, cataract, symblepharon and loss of sight.

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.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

---

**Legend:**

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

---

**Carcinogenicity**

- **Caustic Soda 50%**
  - Acute Toxicity: Not Available
  - Carcinogenicity: Not Available

---

**Caustic Soda 50%**

- Sodium hydroxide
  - Toxicity: Not Available
  - Irritation: Not Available

**SODIUM HYDROXIDE**
SECTION 12 ECOLOGICAL INFORMATION

Toxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Endpoint</th>
<th>Test Duration (hr)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide</td>
<td>EC50</td>
<td>384</td>
<td>Crustacea</td>
<td>27901.643mg/L</td>
<td>3</td>
</tr>
<tr>
<td>sodium hydroxide</td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>1034.10043mg/L</td>
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</tr>
<tr>
<td>sodium hydroxide</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>4.16158mg/L</td>
<td>3</td>
</tr>
<tr>
<td>sodium hydroxide</td>
<td>NOEC</td>
<td>96</td>
<td>Fish</td>
<td>56mg/L</td>
<td>4</td>
</tr>
<tr>
<td>sodium hydroxide</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>40.4mg/L</td>
<td>2</td>
</tr>
</tbody>
</table>

Legend:
- Data available but does not fill the criteria for classification
- Data required to make classification available
- 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>sodium hydroxide</td>
<td>LOW</td>
<td>LOW</td>
</tr>
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</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide</td>
<td>LOW (LogKOW = -3.8796)</td>
</tr>
</tbody>
</table>

Mobility in soil

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

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

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. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. 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.

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: Neutralisation with suitable dilute acid followed by: burial in a landfill 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 TRANSPORT INFORMATION

Labels Required

Continued...
### Land transport (ADG)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1824</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>SODIUM HYDROXIDE SOLUTION</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport hazard class(es)</th>
<th>Class</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subrisk</td>
<td>Not Applicable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special precautions for user</th>
<th>Special provisions</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantity</td>
<td>1 L</td>
<td></td>
</tr>
</tbody>
</table>

### Air transport (ICAO-IATA / DGR)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1824</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Sodium hydroxide solution</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICAO/IATA Class</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICAO / IATA Subrisk</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>ERG Code</td>
<td>8L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special precautions for user</th>
<th>Cargo Only Packing Instructions</th>
<th>A3A03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special provisions</td>
<td>Cargo Only Maximum Qty / Pack</td>
<td>30 L</td>
</tr>
<tr>
<td>Passenger and Cargo Packing Instructions</td>
<td>855</td>
<td></td>
</tr>
<tr>
<td>Passenger and Cargo Maximum Qty / Pack</td>
<td>1 L</td>
<td></td>
</tr>
<tr>
<td>Passenger and Cargo Limited Quantity Packing Instructions</td>
<td>Y840</td>
<td></td>
</tr>
<tr>
<td>Passenger and Cargo Limited Maximum Qty / Pack</td>
<td>0.5 L</td>
<td></td>
</tr>
</tbody>
</table>

### Sea transport (IMDG-Code / GGVSee)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1824</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>SODIUM HYDROXIDE SOLUTION</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG Class</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG Subrisk</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special precautions for user</th>
<th>EMS Number</th>
<th>F-A, S-B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special provisions</td>
<td>Not Applicable</td>
<td></td>
</tr>
<tr>
<td>Limited Quantities</td>
<td>1 L</td>
<td></td>
</tr>
</tbody>
</table>

Transport in bulk according to Annex II of MARPOL and the IBC code
Not Applicable

### SECTION 15 REGULATORY INFORMATION

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

SODIUM HYDROXIDE(1310-73-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Continued...
## Australia Exposure Standards
## Australia Hazardous Substances Information System - Consolidated Lists

### National Inventory

<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 - NDSSL</td>
<td>N (sodium 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>Y</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

**Ingredients with multiple cas numbers**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide</td>
<td>12200-64-5, 1310-73-2</td>
</tr>
</tbody>
</table>

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](http://www.chemwatch.net)

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
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index

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TEL (+61 3) 9572 4700.

end of SDS