Machine Dishwashing Liquid
Pelikan Artline
Version No: 1.1
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>Machine Dishwashing Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Not Available</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>CAUSTIC ALKALI LIQUID, N.O.S.</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>5L - 631040700, 15 - 631040800</td>
</tr>
</tbody>
</table>

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

Relevant identified uses: Detergent for auto dishwashing machines

Details of the supplier of the safety data sheet

Registered company name: Pelikan Artline
Address: 17-19 Waterloo Street, Queanbeyan NSW 2620 Australia
Telephone: +61-2-61328200
Fax: +61-2-62844556
Website: Not Available
Email: MSDS@pelikanartline.com.au

Emergency telephone number

Association / Organisation: Poisons Information Line
Emergency telephone numbers: 13 11 26
Other emergency telephone numbers: Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

Poisons Schedule: 6
Classification [1]: Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Metal Corrosion Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)

Legend:

Label elements

GHS label elements

SIGNAL WORD: DANGER

Hazard statement(s)

H314 Causes severe skin burns and eye damage.
H318 Causes serious 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.
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.
- **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>5064-31-3</td>
<td>&lt;10</td>
<td>nitrilotriacetic acid, trisodium salt</td>
</tr>
<tr>
<td>13598-36-2</td>
<td>&lt;10</td>
<td>ortho-phosphorous acid</td>
</tr>
<tr>
<td>1310-73-2</td>
<td>10-30</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, 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). 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.

**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.

This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)
Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
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, 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).
- Carbon dioxide.

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

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
- 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).

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.
### Machine Dishwashing Liquid

**Material name:** TEEL-2

**Material name:** Nitrilotriacetic acid, trisodium salt, monohydrate

**Original IDLH:** 150 mg/m³

**Revised IDLH:** 9.2 mg/m³

**TWA:** 0.42 mg/m³

**STEL:** Not Available

**Ingredient:** Sodium hydroxide

**Ingredient:** Sodium hydroxide

**Ingredient:** Sodium hydroxide

**Ingredient:** Sodium hydroxide

**Ingredient:** Phosphoric acid

**Ingredient:** Phosphorous acid, o-; (Phosphonic acid)

### Conditions for safe storage, including any incompatibilities

#### Suitable container

- Lined metal can, lined metal pail/can.
- Polyliner drum.
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

#### Storage incompatibility

- Sodium hydroxide/potassium hydroxide: reacts with water evolving heat and corrosive fumes
- Sodium hydroxide reacts violently with acids, trans-acetylene dichloride, aminotetrazole, p-bis(1,3-dibromomethyl), 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-dimethybutane, ethylene chlorohydrin, germanium, iodine pentfluoride, maleic anhydride, p-nitroaniline, nitrogen trichloride, o-nitrophenol, phosphonium iodide, potassium perchlorate, propylene oxide, 1,2,4,5-tetrachlorobenzene (highly toxic substance is formed), 2,2,3,3-tetrafluoro-1-propanol, tetralin, dibutylphthalate, trichloroethanol, 2,6-titranitroso-4-phenylacetamide, nitrobenzene.
- Sodium hydroxide reacts with fluoro, nitroalkanes, (forming explosive compounds)
- Sodium hydroxide is incompatible with acetic acid, acetaldehyde, acetic anhydride, acrolein, acrylonitrile, allyl chloride, organic arylhydrides, acrylates, acrylates, aldehydes, alkenes, sodium hydroxide, substituted allyls, ammonium chloroplatinate, benzanthrone, bromine, benzene-1,4-diol, carbon dioxide, cellulose nitrate, chlorine trifluoride, 4-chlorobutynitrile, chlorohydrin, chloronitrocompounds, chlorosulfonic acid, cinnamaldehyde, caprolactam solution, chlorocresols, 1,2-dichloroethylene, epichlorohydrin, ethylene cyanohydrin, formaldehyde (forms formic acid and flammable hydrogen gas), glycols, glyoxal, hexachloroplatinate, hydrogen sulfide, hydroquinone, iron-silicon, isocyanates, ketones, methanol, methyl azide, 4-methyl-2-nitrophenol, mineral acids (forming corresponding salt) nitrobenzene.
- N-nitrosohydroxylamine, nitrites pentol, phenols, phosphorus, phosphorus pentoxide, beta propiolactone, sodium, sulfur dioxide, tetraborate, 1,1,1,2-tetrachloroethane, 2,2,2-trichloroethanol, trichloromethane, zirconium
- Sodium hydroxide ignites on contact with cinnamaldehyde or zinc and reacts explosively with a mixture of chloroform and methane
- Sodium hydroxide forms heat-, friction-, and/or shock-sensitive explosive salts with nitro-compounds, organic halogens, chlorine dioxide ((explodes), chloroform, cresols, cyclopentadiene, 4-chloro-2-methylphenol, cis-dichloroethylene, 2,2-dichloro-3,3-dimethybutane, ethylene chlorohydrin, germanium, iodine pentfluoride, maleic anhydride, p-nitroaniline, nitrogen trichloride, o-nitrophenol, phosphonium iodide, potassium perchlorate, propylene oxide, 1,2,4,5-tetrachlorobenzene (highly toxic substance is formed), 2,2,3,3-tetrafluoro-1-propanol, tetralin, dibutylphthalate, trichloroethanol, 2,6-titranitroso-4-phenylacetamide, nitrobenzene.
- Sodium hydroxide increases the explosive sensitivity of nitromethane
- Sodium hydroxide attacks some plastics, rubber, coatings and metals: aluminium, tin, zinc, etc., and their alloys, producing flammable hydrogen gas
- Sodium hydroxide reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.
- Sodium hydroxide avoids strong acids, chlorides, acid anhydrides and chloroformates.
- Sodium hydroxide avoid contact with copper, aluminium and their alloys.
- Sodium hydroxide avoid strong bases.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Ingredient</th>
<th>Material name</th>
<th>TWA</th>
<th>STEL</th>
<th>Peak</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Australia Exposure Standards</td>
<td>sodium hydroxide</td>
<td>Sodium hydroxide</td>
<td>Not Available</td>
<td>Not Available</td>
<td>2 mg/m³</td>
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</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
</tr>
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<tbody>
<tr>
<td>Nitritriacetic acid, trisodium salt</td>
<td>Nitritriacetic acid, trisodium salt, monohydrate</td>
<td>9.2 mg/m³</td>
<td>100 mg/m³</td>
<td>110 mg/m³</td>
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<tr>
<td>Phosphorous acid, o-; (Phosphonic acid)</td>
<td>Phosphorous acid</td>
<td>3 mg/m³</td>
<td>30 mg/m³</td>
<td>150 mg/m³</td>
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<tr>
<td>Phosphorous acid</td>
<td>Phosphorous acid</td>
<td>0.42 mg/m³</td>
<td>4.6 mg/m³</td>
<td>380 mg/m³</td>
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<td>Sodium hydroxide</td>
<td>Sodium hydroxide</td>
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<td>Not Available</td>
<td>Not Available</td>
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</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Original IDLH</th>
<th>Revised IDLH</th>
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<tbody>
<tr>
<td>Nitritriacetic acid, trisodium salt</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Phosphorous acid</td>
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<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. 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 overexposure.

Local exhaust ventilation usually required.

**Personal protection**

- **Eye and face 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, wherever 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.
  - 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 adsorption 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.

- **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.

- **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.

**Recommended material(s)**

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:

| Machine Dishwashing Liquid |

<table>
<thead>
<tr>
<th>Material</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTYL</td>
<td>A</td>
</tr>
<tr>
<td>NEOPRENE</td>
<td>A</td>
</tr>
<tr>
<td>NAT+NEOPRE+NITRILE</td>
<td>C</td>
</tr>
<tr>
<td>NATURAL RUBBER</td>
<td>C</td>
</tr>
<tr>
<td>NATURAL+NEOPRENE</td>
<td>C</td>
</tr>
<tr>
<td>NEOPRENE:NATURAL</td>
<td>C</td>
</tr>
<tr>
<td>NITRILE</td>
<td>C</td>
</tr>
<tr>
<td>NITRILE+PVC</td>
<td>C</td>
</tr>
<tr>
<td>PE</td>
<td>C</td>
</tr>
<tr>
<td>PE/EVALPE</td>
<td>C</td>
</tr>
<tr>
<td>PVA</td>
<td>C</td>
</tr>
<tr>
<td>PVC</td>
<td>C</td>
</tr>
<tr>
<td>SARANEX-23</td>
<td>C</td>
</tr>
<tr>
<td>SARANEX-23 2-PLY</td>
<td>C</td>
</tr>
<tr>
<td>TEFLON</td>
<td>C</td>
</tr>
<tr>
<td>VITON</td>
<td>C</td>
</tr>
<tr>
<td>VITON/CHLOROBUTYL</td>
<td>C</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.
SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| Appearance | A clear liquid |
| Physical state | Liquid |
| Odour | Not Available |
| Odour threshold | Auto-ignition temperature (°C) |
| pH (as supplied) | 12-14 |
| Melting point / freezing point (°C) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available |
| Flash point (°C) | Not Available |
| Evaporation rate | Not Available |
| Flammability | Not Available |
| Upper Explosive Limit (%) | Not Available |
| Lower Explosive Limit (%) | Not Available |
| Vapour pressure (kPa) | Not Available |
| Solubility in water (g/L) | Miscible |
| Vapour density (Air = 1) | Not Available |
| Relative density (Water = 1) | 1.10-1.15 |
| Partition coefficient n-octanol / water | Not Available |
| Auto-ignition temperature (°C) | Not Available |
| Decomposition temperature | Not Available |
| Viscosity (cSt) | Not Available |
| Molecular weight (g/mol) | Not Available |
| Taste | Not Available |
| Explosive properties | Not Available |
| Oxidising properties | Not Available |
| Surface Tension (dyn/cm or mN/m) | Not Available |
| Gas group | Not Available |
| VOC g/L | Not Available |
| pH as a solution (1%) | 11-13 |

SECTION 10 STABILITY AND REACTIVITY

Reactivity
See section 7

Chemical stability
- Contact with alkaline material liberates heat

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
The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. Not normally a hazard due to non-volatile nature of product

Ingestion
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.

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 causes burns which may take time to manifest and cause pain, thus care should be taken to avoid contamination of gloves and boots. A 5% aqueous solution of it produces tissue death on rabbit skin while 1% solution caused no effect on irrigated rabbit eye. Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The combed 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.

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 eyelid and blindness.

Chronic
There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. 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 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.
### Machine Dishwashing Liquid

<table>
<thead>
<tr>
<th>Substance</th>
<th>IRRITATION</th>
<th>TOXICITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrilotriacetic acid, trisodium salt</td>
<td>Not Available</td>
<td>NEARLY IRRITATING</td>
</tr>
<tr>
<td>Ortho-phosphorous acid</td>
<td>Not Available</td>
<td>ORAL TOXICITY</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>Not Available</td>
<td>ORAL TOXICITY</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 extracted from RTECS - Register of Toxic Effect of chemical Substances

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**WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

Nitrilotriacetic acid and its water-soluble metal complexes occur in household detergents and drinking water. Their ability to chelate metal ions accounts for the toxicity. They may cause cancer of the kidney, bladder and urinary tract in some experimental animals but no foetal or genetic damage has been recorded. They do not cause skin sensitisation or irritation but may accumulate in the foetal skeleton. In humans, they are poorly absorbed from the intestines and rapidly excreted in the urine.

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**SODIUM HYDROXIDE**

The material may produce severe irritation to the eye causing pronounced 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.

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. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

### Acute 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>nitrilotriacetic acid, trisodium salt</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>&lt;16.9-20.2mg/L</td>
<td>1</td>
</tr>
<tr>
<td>nitrilotriacetic acid, trisodium salt</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>560-1000mg/L</td>
<td>2</td>
</tr>
<tr>
<td>nitrilotriacetic acid, trisodium salt</td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>&gt;91.5mg/L</td>
<td>2</td>
</tr>
<tr>
<td>nitrilotriacetic acid, trisodium salt</td>
<td>NOEC</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>1.43mg/L</td>
<td>2</td>
</tr>
<tr>
<td>ortho-phosphorous acid</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>&gt;100mg/L</td>
<td>2</td>
</tr>
<tr>
<td>ortho-phosphorous acid</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>&gt;1000mg/L</td>
<td>2</td>
</tr>
<tr>
<td>ortho-phosphorous acid</td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>13.5mg/L</td>
<td>2</td>
</tr>
<tr>
<td>ortho-phosphorous acid</td>
<td>NOEC</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>0.32mg/L</td>
<td>2</td>
</tr>
<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>
<td>3</td>
</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 affordable but does not fill the criteria for classification
- Data required to make classification available
- Data Not Available to make classification

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Prevent, by any means available, spillage from entering drains or water courses. DO NOT discharges into sewers or waterways.

### SECTION 13 DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Prevent, by any means available, spillage from entering drains or water courses. DO NOT discharges into sewers or waterways.**
Product / Packaging disposal

Containers may still present a chemical hazard/danger when empty.
Return to supplier for reuse/recycling if possible.
Otherwise:
If container cannot 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.
DO NOT allow wash water from cleaning or process equipment to enter drains.
If 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 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 TRANSPORT INFORMATION

Labels Required

Marine Pollutant NO
HAZCHEM 2R

Land transport (ADG)

| UN number | 1719 |
| Packing group | II |
| UN proper shipping name | CAUSTIC ALKALI LIQUID, N.O.S. |
| Environmental hazard | Not Applicable |
| Transport hazard class(es) | Class 8 Subrisk Not Applicable |
| Special precautions for user | Special provisions 274 Limited quantity 1 L |

Air transport (ICAO-IATA/DGR)

| UN number | 1719 |
| Packing group | II |
| UN proper shipping name | Caustic alkali liquid, n.o.s. * |
| Environmental hazard | Not Applicable |
| Transport hazard class(es) | ICAO/IATA Class 8 ICAO / IATA Subrisk Not Applicable ERG Code 8L |
| Special precautions for user | Special provisions A3A803 Cargo Only Packing Instructions 855 Cargo Only Maximum Qty / Pack 30 L Passenger and Cargo Packing Instructions 851 Passenger and Cargo Maximum Qty / Pack 1 L Passenger and Cargo Limited Quantity Packing Instructions Y840 Passenger and Cargo Limited Maximum Qty / Pack 0.5 L |

Sea transport (IMDG-Code/GGVSee)

| UN number | 1719 |
| Packing group | II |
| UN proper shipping name | CAUSTIC ALKALI LIQUID, N.O.S. |
| Environmental hazard | Not Applicable |
Transport hazard class(es)

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

Special precautions for user

<table>
<thead>
<tr>
<th>EMS Number</th>
<th>Special provisions</th>
<th>Limited Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-A, S-B</td>
<td>274</td>
<td>1 L</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

NITRILOTRIACETIC ACID, TRISODIUM SALT (5064-31-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia Hazardous Substances Information System - Consolidated Lists</td>
<td>Y</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS)</td>
<td>Y</td>
</tr>
</tbody>
</table>

ORTHO-PHOSPHOROUS ACID (13598-36-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia Hazardous Substances Information System - Consolidated Lists</td>
<td>Y</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS)</td>
<td>Y</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia Exposure Standards</td>
<td>Y</td>
</tr>
<tr>
<td>Australia Hazardous Substances Information System - Consolidated Lists</td>
<td>Y</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS)</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>nitrilotriacetic acid, trisodium salt</td>
<td>18662-53-8, 5064-31-3</td>
</tr>
<tr>
<td>ortho-phosphorous acid</td>
<td>10294-56-1, 13598-36-2</td>
</tr>
<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

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