

Safety Data Sheet

Hazardous, Dangerous Goods

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: **Caustic Soda**

Synonyms

Caustic Soda - 5kg

Product Code

CH900612

Recommended use: Food processing aid; Industrial/commercial use: In flotation agents; in pH regulation; as a solvent; in water treatment; as a photochemical; as a reducing agent; and in hydraulic fracturing. Domestic use: In cleaning/washing agents and additives; adhesives; and cosmetic use.

Supplier: XO2 Pty Ltd
ABN: 25 107 430 982
Street Address: 42 Junction Road
Burleigh Heads
Queensland 4220
Telephone: 1300 123 499
Email: hello@xo2.com.au

Emergency Telephone number: 1300 123 499 (Business Hours: Mon - Fri, 8:00am - 4:30pm AEST)

2. HAZARDS IDENTIFICATION

This material is hazardous according to the criteria of Safe Work Australia GHS 7.



Signal Word

Danger

Hazard Classifications

Corrosive to Metals - Category 1
Skin Corrosion/Irritation - Category 1A
Eye Damage/Irritation - Category 1

Hazard Statements

H290 May be corrosive to metals.
AUH071 Corrosive to the respiratory tract.
H314 Causes severe skin burns and eye damage.

Prevention Precautionary Statements

P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.
P234 Keep only in original packaging.
P260 Do not breathe dust, fume, gas, mist, vapours or spray.
P264 Wash hands, face and all exposed skin thoroughly after handling.
P280 Wear protective gloves/protective clothing including eye/face protection.

Response Precautionary Statements

P101 If medical advice is needed, have product container or label at hand.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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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/doctor.
P390 Absorb spillage to prevent material damage.

Storage Precautionary Statements

P405 Store locked up.
P406 Store in corrosive resistant insert appropriate compatible material container with a resistant inner liner.

Disposal Precautionary Statement

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

Poison Schedule: S6. Poison

DANGEROUS GOOD CLASSIFICATION

Classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

Dangerous Goods Class: 8

3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO	PROPORTION
Sodium hydroxide	1310-73-2	>=98 %
		100%

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Skin Contact: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If swelling, redness, blistering or irritation occurs seek medical assistance. For gross contamination, immediately drench with water and remove clothing. Continue to flush skin and hair with plenty of water (and soap if material is insoluble). For skin burns, cover with a clean, dry dressing until medical help is available. If blistering occurs, do NOT break blisters. If swelling, redness, blistering, or irritation occurs seek medical assistance.

Eye contact: Immediately irrigate with copious quantities of water for 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

PPE for First Aiders: Wear overalls, gloves, apron, chemical goggles, respirator. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from polyvinyl chloride (PVC) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash

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contaminated clothing and other protective equipment before storing or re-using.

Notes to physician: Treat symptomatically. Can cause corneal burns. Treat symptomatically and supportively. Keep victim calm and warm - Obtain immediate medical care. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves.

5. FIRE FIGHTING MEASURES

Hazchem Code: 2W

Suitable extinguishing media: If material is involved in a fire use water fog (or if unavailable fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).

Specific hazards: Non-combustible material.

Fire fighting further advice: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

LARGE SPILLS

Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Work up wind or increase ventilation. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

Dangerous Goods - Initial Emergency Response Guide No: 37

7. HANDLING AND STORAGE

Handling: Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Do not breathe dusts or mists and prevent contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). **WARNING!** Water reactive - Heat of reaction may be enough to ignite combustible materials. When diluting, always add the product to water - Never add water to the product.

Storage: Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Store locked up. Store in corrosive resistant container with a resistant inner liner. Keep container standing upright. Keep containers closed when not in use - check regularly for spills.

This material is classified as a Class 8 Corrosive as per the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and/or the "New Zealand NZS5433: Transport of Dangerous Goods on Land" and must be stored in accordance with the relevant regulations.

This material is a Scheduled Poison Schedule 6 (Poison) and must be stored, maintained and used in accordance with the relevant regulations.

This product does not meet the criteria of a "Manufactured Product" as defined in the ADG Code.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Product Name: Caustic Soda

Reference No: CH900600

Issued: 2022-08-03

Version: 3.0

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National occupational exposure limits:

	TWA		STEL		NOTICES
	ppm	mg/m3	ppm	mg/m3	
Sodium hydroxide	-	2 Peak limitation	-	-	-

As published by Safe Work Australia.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Biological Limit Values: As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

Engineering Measures: Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Avoid generating and inhaling dusts. Use with local exhaust ventilation or while wearing dust mask.

Personal Protection Equipment: OVERALLS, GLOVES, APRON, CHEMICAL GOGGLES, RESPIRATOR.

Personal protective equipment (PPE) must be suitable for the nature of the work and any hazard associated with the work as identified by the risk assessment conducted.

Wear overalls, gloves, apron, chemical goggles, respirator. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from polyvinyl chloride (PVC) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

RECOMMENDATIONS FOR CONSUMER USE:

Respiratory protection: In the case of sodium hydroxide powder emissions, wear respiratory protection.

Recommended: Particulate filter respirator (refer to AS/NZS 1715 & 1716). - Full face shield may be required for supplementary protection. - PVC protective suit may be required if exposure is severe.

Hygiene measures: Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of dust. Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

Base Units:	Kilogram
Form:	Flake
Colour:	White, translucent
Odour:	Odourless

Product Name: Caustic Soda

Reference No: CH900600

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Version: 3.0

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Solubility:	Soluble in water (water reactive)
Specific Gravity:	N Av
Density:	2.13g/cm ³
Relative Vapour Density (air=1):	N Av
Vapour Pressure:	N Av
Flash Point (°C):	N Av
Flammability Limits (%):	N Av
Autoignition Temperature (°C):	N Av
Melting Point/Range (°C):	323°C
Pour Point/Range (°C):	N Av
Boiling Point/Range (°C):	1,388°C
Decomposition Point (°C):	N Av
Sublimation Point (°C):	N Av
Dropping Point (°C):	N Av
pH:	14
Viscosity:	N Av
Surface Tension:	N Av
Evaporation Rate (n-Butyl acetate=1):	N Av
Partition Coefficient:	N Av
Total VOC (g/Litre):	N Av
Odour Threshold:	N Av
Explosive properties:	N Av
Oxidising properties:	N Av
% Volatile by Volume:	N Av
Molecular Formula:	N Av
Molecular Weight:	N Av

(Typical values only - consult specification sheet)
N Av = Not available, N App = Not applicable

10. STABILITY AND REACTIVITY

Chemical stability: The substance is stable under normal (and foreseeable) conditions of temperature and pressure during storage and handling.

Conditions to avoid: Avoid generating dust.

Incompatible materials: Incompatible/reactive with aluminium, tin, zinc and their alloys, copper, lead, etc; acetic acid, allyl chloride, chlorinetrifluoride, chloroform, methylic alcohol, chloronitrotoluene, chlorosulphonic acid, glyoxal, cyanohydrin, hydrochloric acid, hydrofluoric acid, hydroquinone, nitric acid, sulphuric acid and oleum, nitropropane, phosphorous, propiolactone, phosphorous pentoxide, tetrachlorobenzene, tetrahydrofuran, nitromethane and nitroparaffins.

Hazardous decomposition products: Fire or heat will produce irritating, toxic and/or corrosive gases, including oxides of Sodium. Contact with metals may evolve flammable hydrogen gas.

Hazardous reactions: Reacts violently with acid and is corrosive to metals such as aluminium, tin, lead and zinc; This produces a combustible/explosive gas (hydrogen). Reacts with ammonium salts; This produces ammonia and generates fire hazard. Contact with moisture and water generates heat - Heat of reaction may be enough to ignite combustible materials.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

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Inhalation: Material may be an irritant to mucous membranes and respiratory tract.

Skin contact: Corrosive; Causes severe skin burns. Symptoms include redness, pain, burns, blisters.

Ingestion: Corrosive on ingestion. Symptoms include abdominal pain, burns in mouth and throat, burningsensation in the throat and chest, nausea, vomiting, shock or collapse. The substance is not expected to be systemically available and the effects are expected to be due to pH changes.

Eye contact: Corrosive; Causes serious eye damage. Symptoms include redness, pain, blurred vision, severe burns. Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes.

Acute toxicity

Inhalation: This material has been classified as not hazardous for acute inhalation exposure. Acute toxicity estimate (based on ingredients): $LC_{50} > 5.0$ mg/L for dust.

Skin contact: This material has been classified as not hazardous for acute dermal exposure. Acute toxicity estimate (based on ingredients): $LD_{50} > 2,000$ mg/Kg bw

Ingestion: This material has been classified as not hazardous for acute ingestion exposure. Acute toxicity estimate (based on ingredients): $LD_{50} > 2,000$ mg/Kg bw

Corrosion/Irritancy: Eye: this material has been classified as a Category 1 Hazard (irreversible effects to eyes). Skin: this material has been classified as a Category 1A Hazard (irreversible effects to skin).

Sensitisation: Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.

Aspiration hazard: This material has been classified as not an aspiration hazard.

Specific target organ toxicity (single exposure): This material has been classified as not a specific hazard to target organs by a single exposure.

Chronic Toxicity

Mutagenicity: This material has been classified as not a mutagen.

Carcinogenicity: This material has been classified as not a carcinogen.

Reproductive toxicity (including via lactation): This material has been classified as not a reproductive toxicant.

Specific target organ toxicity (repeat exposure): This material has been classified as not a specific hazard to target organs by repeat exposure.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Acute aquatic hazard: This material has been classified as not hazardous for acute aquatic exposure. Acute toxicity estimate (based on ingredients): > 100 mg/L

Long-term aquatic hazard: This material has been classified as not hazardous for chronic aquatic exposure. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): > 100 mg/L, where the substance is not rapidly degradable and/or $BCF < 500$ and/or $\log K_{ow} < 4$.

Ecotoxicity: Aquatic toxicity:- LC_{50} , Fish: All available tests resulted in a range of toxicity values between 35 to 189 mg/l. However, in the majority of these test reports there were no data on pH variation.- EC_{50} , Crustacea (Ceriodaphnia): 40.4 mg/l (48 h) [based on immobility].- NOEC, Fish/Crustacea: It is not required to conduct this

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study since the substance dissociates in water and the only possible effect would result from the pH effect. However, pH will remain within environmentally expected ranges

Persistence and degradability: NaOH is a strong alkaline substance that dissociates completely in water to Na⁺ and OH⁻. High water solubility and low vapour pressure indicate that NaOH will be found predominantly in aquatic environment. This implies that it will not adsorb on particulate matter or surfaces. Atmospheric emissions as aerosols are rapidly neutralised by carbon dioxide and the salts will be washed out by rain.

Bioaccumulative potential: Considering its high water solubility, NaOH is not expected to bioconcentrate in organisms. In addition, sodium is a naturally-occurring element that is prevalent in the environment and to which organisms are exposed regularly, for which they have some capacity to regulate the concentration in the organism.

Mobility: High water solubility and mobility. If emitted to soil, sorption to soil particles will be negligible. Depending on the buffer capacity of the soil, OH⁻ will be neutralised in the soil pore water or the pH may increase. There is no direct exposure of soil to NaOH based on the available uses. In addition, no indirect exposure via air is expected as it rapidly neutralises in air.

13. DISPOSAL CONSIDERATIONS

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT

Classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".



UN No:	1823
Dangerous Goods Class:	8
Packing Group:	II
Hazchem Code:	2W
Emergency Response Guide No:	37
Limited Quantities	1 kg

Proper Shipping Name: SODIUM HYDROXIDE, SOLID

Segregation Dangerous Goods: Not to be loaded with explosives (Class 1), dangerous when wet substances (Class 4.3), oxidising agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (Class 7) or food and food packaging in any quantity. Note 1: Concentrated strong alkalis are incompatible with concentrated strong acids. Note 2: Concentrated strong acids are incompatible with concentrated strong alkalis. Note 3: Acids are incompatible with Dangerous Goods of Class 6 which are cyanides. Exemptions may apply.

This product does not meet the criteria of a "Manufactured Product" as defined in the ADG Code.

MARINE TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

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UN No: 1823
Dangerous Goods Class: 8
Packing Group: II
Proper Shipping Name: SODIUM HYDROXIDE, SOLID

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.



UN No: 1823
Dangerous Goods Class: 8
Packing Group: II
Proper Shipping Name: SODIUM HYDROXIDE, SOLID

15. REGULATORY INFORMATION

This material is not subject to the following international agreements:

Montreal Protocol (Ozone depleting substances)
The Stockholm Convention (Persistent Organic Pollutants)
The Rotterdam Convention (Prior Informed Consent)
Basel Convention (Hazardous Waste)
International Convention for the Prevention of Pollution from Ships (MARPOL)

This material/constituent(s) is covered by the following requirements:

The Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act (Commonwealth): S6. Poison.

AICIS Status: All components of this product are listed on or exempt from the Australian Inventory of Industrial Chemicals (AIIC).

16. OTHER INFORMATION

Reason for issue: Revised

This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If you are an employer it is your duty to tell your employees, and any others that may be affected, of any hazards described in this sheet and of any precautions that should be taken.

Safety Data Sheets are updated frequently. Please ensure you have a current copy.