

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Identifier:

GHS product identifier: Caustic Soda Liquor
EC index number: 011-002-00-6
EC number: 215-185-5
Alternative name: Sodium Hydroxide Solution
REACH registration number: 01-2119457892-27-XXXX
CAS number: 1310-73-2

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

Use of the Substance/Mixture: Chemical manufacture and processing, pH control.

Recommended restrictions on use: None anticipated.

Details of the supplier of the safety data sheet:

Company name: Nexchem Ltd
Unit 3 Barshaw Park
Leycroft Road
Leicester
LE4 1ET
Tel: 0116 2311130
24/7 Emergency Tel: 0800 246 1274
Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008:

Skin Corr. 1A – H314: Causes severe skin burns and eye damage.

Met. Corr. 1- H290: May be corrosive to metals.

Eye Dam. 1 – H318: Causes serious eye damage.

Label Elements:

Hazard Pictogram:



Signal word(s):

DANGER

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Hazard Statements: H314: Causes severe skin burns and eye damage.
H290: May be corrosive to metal

Precautionary statement(s): P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.

Other hazards: The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances:

Name REACH reg No.	Conc. (C)	CAS No. EC No.	Classification according to CLP	Note	Remark
Sodium Hydroxide 01-2119457892-27	10% ≤ C ≤ 55%	1310-73-2 215-185-5	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318 Skin Corr. 1A; H314: C ≥ 5%, (CLP Annex VI (ATP 0)) Skin Corr. 1B; H314: 2% ≤ C < 5%, (CLP Annex VI (ATP 0)) Skin Irrit. 2; H315: 0.5% ≤ C < 2%, (CLP Annex VI (ATP 0))	(1) (2) (6) (10)	Constituent

- (1) For H- and EUH-statements in full: see section 16.
(2) Substance with a Community workplace exposure limit.
(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data.
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006.

4. FIRST AID MEASURES

Description of first aid measures:

General: Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the emergency number. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

If inhaled: Remove patient from exposure, into fresh air. Immediately consult a doctor/medical service.

In case of skin contact: If possible, wipe up/dry remove chemical. Then rinse/shower immediately for 30 minutes with (lukewarm) water. Cut clothing; never remove burnt clothing from the wound. Do not give any pain medication. Consult a doctor/medical service.

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In case of eye contact: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service.

If swallowed: Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Centre.

Most important symptoms and effects, both acute and delayed:

Acute symptoms:

After inhalation: Irritation of the nasal mucous membranes. Irritation of the respiratory tract. Dry/sore throat. Coughing.

EXPOSURE TO HIGH CONCENTRATIONS: Corrosion of the upper respiratory tract. Possible laryngeal spasm/oedema. Risk of pneumonia. Respiratory difficulties.

FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedema.

After skin contact: Caustic burns/corrosion of the skin. Destruction of tissue. Blisters.

After eye contact: Corrosion of the eye tissue.

After ingestion: Difficulty in swallowing. Possible oesophageal perforation. Burns to the gastric/intestinal mucosa. Bleeding of the gastrointestinal tract. Blood in stool. Blood in vomit. Shock.

Delayed symptoms: No effects known.

Indication of any immediate medical attention and special treatment needed: If applicable and available, it will be listed below.

5. FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable extinguishing media: As appropriate for surrounding fire.

Unsuitable extinguishing media: No further information

Special hazards arising from the substance or mixture: Concentrated solution reacts exothermically with water (moisture).

Advice for fire-fighters:

Instructions: Use water moderately and if possible, collect or contain it. Take account of toxic fire-fighting water. Heat exposure: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.

Special protective equipment for fire-fighters: Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605).

Large spills/in enclosed spaces: Self-contained breathing apparatus (EN 136 + EN 137).

Large spills/in enclosed spaces: Gas-tight suit (EN 943).

Heat/fire exposure: Self-contained breathing apparatus (EN 136 + EN 137).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

No naked flames. Corrosion-proof appliances. Keep containers closed.

Large spills/in confined spaces: Consider evacuation.

In case of hazardous reactions: Keep upwind.

Exposure to fire/heat: Keep upwind.

Exposure to fire/heat: Consider evacuation.

Exposure to fire/heat: Seal off low-lying areas.

Exposure to fire/heat: Have neighbourhood close doors and windows.

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Protective equipment for non-emergency personnel: See section 8.2.

Protective equipment for emergency responders: Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605).

Large spills/in enclosed spaces: Self-contained breathing apparatus (EN 136 + EN 137).

Large spills/in enclosed spaces: Gas-tight suit (EN 943). For suitable protective clothing, see section 8.2.

Environmental precautions: Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Take account of toxic/corrosive precipitation water. Prevent soil and water pollution. Prevent spreading in sewers.

Methods and material for containment and cleaning up:

Take up liquid spill into inert absorbent material, e.g.: sand/earth. Scoop absorbed substance into closing containers.

Small quantities of liquid spill: Dilute with an excess of water or neutralise.

Neutralised substance: Wash down with an excess of water. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

Reference to other sections: See section 13.

7. HANDLING AND STORAGE

The information in this section is a general description.

If applicable, exposure scenarios are available.

Always use the relevant exposure scenarios that correspond to your identified use.

Precautions for safe handling: Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Keep container tightly closed. Use corrosion-proof equipment. Do not discharge the waste into the drain.

Conditions for safe storage, including any incompatibilities:

Safe storage requirements: Meet the legal requirements. Store in a dry area. Keep container in a well-ventilated place. Provide for a tub to collect spills. Keep locked up. Unauthorised persons are not admitted. Aboveground.

Keep away from: Heat sources, combustible materials, oxidising agents, (strong) acids, metals, organic materials, halogenated hydrocarbons.

Suitable packaging material: Stainless steel, carbon steel, nickel, polyethylene, polypropylene, glass.

Non suitable packaging material: Lead, aluminium, copper, tin, zinc, bronze.

Specific end use(s): If applicable, exposure scenarios are available.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Occupational exposure:

a) **Occupational exposure limit values:** If limit values are applicable and available these will be listed below.

Belgium:

Sodium (hydroxide de)	Time weighted average exposure limit 8h	2 mg/m ³
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France:

Sodium (hydroxide de)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	2 mg/m ³
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Germany:

Natriumhydroxid	vgl. Abschn. IIb
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Austria:

Natriumhydroxid	Tagesmittelwert (MAK)	2 mg/m ³ (Einatembare Fraktion)
	Kurzzeitwert 5(Mow) 8x (MAK)	4 mg/m ³ (Einatembare Fraktion)

UK:

Sodium hydroxide	Short time value (Workplace exposure limit (EH40/2005))	2 mg/m ³
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USA (TLV-ACGIH):

Sodium hydroxide	Momentary value (TLV – Adopted Value)	2 mg/m ³
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b) **National biological limit values:** If limit values are applicable and available these will be listed below.

Sampling methods:

Product name	Test	Number
Sodium hydroxide (alkaline dust)	NIOSH	7401
Sodium hydroxide	NIOSH	7405

Applicable limit values when using the substance or mixture as intended:

If limit values are applicable and available these will be listed below

Threshold values:

DNEL/DMEL – sodium hydroxide: Workers, long-term local effects inhalation – 1 mg/m³

General population, long-term local effects inhalation – 1 mg/m³

Control banding:

If applicable and available it would be listed below.

Exposure controls:

The information in this section is a general description. If applicable, exposure scenarios are available. Always use the relevant exposure scenarios that correspond to your identified use.

Appropriate engineering controls: Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Individual protection measures, such as personal protective equipment:

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

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Respiratory protection:	Full face mask with filter type B at conc. in air > exposure limit.
Hand protection:	Protective gloves against chemicals (EN 374). Materials with good resistance: butyl rubber, chlorinated polyethylene, natural rubber, neoprene (chloroprene rubber), nitrile rubber, polyethylene, PVC, styrene-butadiene rubber, viton, neoprene/natural rubber, nitrile rubber/PVC.
Materials with poor resistance:	Leather, natural fibres, PVA.
Eye protection:	Face shield (EN 166).
Skin protection:	Corrosion-proof clothing (EN 14605).
Environmental exposure controls:	See sections 6.2, 6.3 and 13.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Physical form:	Liquid
Viscosity:	Viscous
Colour:	Colourless
Translucency:	Clear
Odour:	Odourless
Odour threshold:	Not applicable
Flammability:	Not classified as flammable
Explosion limits:	Not applicable
Flash point:	Not applicable
Auto-ignition temperature:	Not applicable
Decomposition temperature:	No data available in the literature
pH (5%):	14
Kinematic viscosity:	No data available in the literature
Solubility:	Water; 25°C; complete. Ethanol; soluble.
Log Kow:	Not applicable (mixture)
Absolute density:	1060 kg/m ³ – 2130 kg/m ³
Relative vapour density:	No data available in the literature
Particle size:	Not applicable (liquid)
Melting point:	-6°C; 10% -27°C; 20% 17°C; 40% 6.2°C; 47% 12°C; 50%
Boiling point:	104.6°C; 10% 107.8°C; 20% 128.5°C; 40% 140.2°C; 47% 145.8°C; 50%

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Dynamic viscosity: 1.7 mPa·s; 25°C; 10%
4.04 mPa·s; 25°C; 20%
27.8 mPa·s; 25°C; 40%
45.3 mPa·s; 25°C; 47%
58.1 mPa·s; 25°C; 50%

Vapour pressure: 30 hPa; 25°C; 10%
22.7 hPa; 25°C; 20%
6.4 hPa; 25°C; 40%
2.7 hPa; 25°C; 47%
1.7 hPa; 25°C; 50%

Relative density: 1.11; 25°C; 10%
1.214; 25°C; 20%
1.424; 25°C; 40%
1.491; 25°C; 47%
1.514; 25°C; 50%

Other information:

Saturation concentration: 671 g/m³.

10. STABILITY AND REACTIVITY

Reactivity: Basic reaction. May be corrosive to metals.

Chemical stability: Stable under normal conditions. Hygroscopic.

Possibility of hazardous reactions: Concentrated solution reacts exothermically with water (moisture). May be corrosive to metals. Absorbs the atmospheric CO₂. Violent to explosive reaction with (some) metal powders. Violent to explosive reaction with (some) acids. Reacts violently with many compounds: heat release resulting in increased fire or explosion risk.

Conditions to avoid: Precautionary measures:
Keep away from naked flames/heat.

Incompatible materials: Combustible materials, oxidising agents, (strong) acids, metals, organic materials, halogenated hydrocarbons.

Hazardous decomposition products: Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

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11. TOXICOLOGICAL INFORMATION

Sodium hydroxide, 10%≤conc<55%:

Information on toxicological effects:

Acute toxicity: No test data available. Judgement is based on the relevant ingredients.

Conclusion: Not classified as acute toxic if inhaled.
Not classified as acute toxic if swallowed.
Not classified as acute toxic in contact with skin.

Corrosion/irritation: No test data available. Classification is based on the relevant ingredients.

Route of exposure	Result	Method	Time point	Species	Value determination	Remark
Eye	Irritating	OECD 405	4; 24; 48; 72; 96 hours	Rabbit	Experimental value	2% aqueous solution
Eye	Serious eye damage; category 1				Annex VI	
Skin	Irritating	Equivalent to OECD 404	1; 24; 48; 72; 168 hours	Rabbit	Experimental value	5% aqueous solution
In vitro	Corrosive	Equivalent to OECD 435		Reconstructed human epidermis	Experimental value	
Skin	Highly corrosive category 1A				Annex VI	

Conclusion: Causes severe skin burns and eye damage.
Not classified as irritating to the respiratory system.

Respiratory or skin sensitisation: Sodium hydroxide, 10%≤conc<55%

No test data available. Judgement is based on the relevant ingredients.

Route of exposure	Result	Method	Species	Value determination	Remark
Skin	Not sensitising	Human observation	Human (male)	Experimental value	Aqueous solution

Sodium hydroxide, 10%≤conc<55%:

Conclusion: Not classified as sensitising for inhalation.
Not classified as sensitising for skin.

Specific target organ toxicity: No test data available. Judgement is based on the relevant ingredients.

Conclusion: Not classified for subchronic toxicity.

Mutagenicity (in vitro): No test data available. Judgement is based on the relevant ingredients. Mutagenicity (in vivo)
No test data available. Judgement is based on the relevant ingredients.

Conclusion: Not classified for mutagenic or genotoxic toxicity.

Carcinogenicity: No test data available. Judgement is based on the relevant ingredients.

Conclusion: Not classified for carcinogenicity.

Reproductive toxicity: No test data available. Judgement is based on the relevant ingredients.

Conclusion: Not classified for reprotoxic or developmental toxicity.

Aspiration hazard: No test data available. Judgement is based on the relevant ingredients.
Not classified for aspiration toxicity.

Toxicity other effects: No data available.

Chronic effects from short and long-term exposure: No effects known.

Information on other hazards: No evidence of endocrine disrupting properties.

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12. ECOLOGICAL INFORMATION

Sodium hydroxide, 10%≤conc<55%

Toxicity: No test data available. Judgement is based on the relevant ingredients.
Acute toxicity (fish), LC50: 189 mg/L, 48 h, *Leuciscus idus*, fresh water, experimental value.
Acute toxicity (crustacea), EC50: 40 mg/L, 48 h, *Ceriodaphnia sp.*, experimental value; locomotor effect.
Conclusion: Harmful to aquatic plants.
Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Persistence and degradability:

Biodegradability: Not applicable.

Bioaccumulative potential:

Log Kow: Not applicable (mixture)

Sodium hydroxide:

Log Kow: Not applicable (inorganic)

Conclusion: Not bioaccumulative

Mobility in soil: No test data on mobility of the component(s) is available.

Results of PBT and vPvB assessment: The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

Endocrine disrupting properties: No evidence of endocrine disrupting properties.

Other adverse effects:

Greenhouse gases: Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573).

Ozone-depleting potential (ODP): Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Water ecotoxicity pH: pH shift

Sodium hydroxide:

Greenhouse gases: Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573).

Ozone-depleting potential (ODP): Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Groundwater: Groundwater pollutant

Water ecotoxicity pH: pH shift

13. DISPOSAL CONSIDERATIONS

The information in this section is a general description.

If applicable, exposure scenarios are available.

Always use the relevant exposure scenarios that correspond to your identified use.

Waste treatment methods:

Provisions relating to waste:

European Union: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
06 02 04* (wastes from the MFSU of bases: sodium and potassium hydroxide). Depending on branch of industry and production process, also other waste codes may be applicable.

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Disposal methods: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

Packaging/Container:

European Union: Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

14. TRANSPORT INFORMATION

Road/Rail:

UN No.: 1824
Proper Shipping Name: SODIUM HYDROXIDE SOLUTION
Hazard Identification Number: 80
ADR/RID Class: 8
Classification Code: C5
Packing Group: II
Label: 8
Tunnel Restriction Code: (E)
Special precautions for user:
Limited quantities: Combination packaging: not more than 1 litre per inner packaging for liquids.
A package shall not weight more than 30kg (gross).

Sea:

UN No.: 1824
Proper Shipping Name: SODIUM HYDROXIDE SOLUTION
IMDG Class: 8
Packing Group: II
Label: 8
Marine Pollutant: Not classified as a Marine Pollutant

Air (ICAO/IATA):

UN No.: 1824
Proper Shipping Name: SODIUM HYDROXIDE SOLUTION
ICAO-TI Class: 8
Packing Group: II
Label: 8

Additional Information:

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

Product Name: Sodium hydroxide solution
Ship Type: 3
Pollution Category: Y

[cont...]

15. REGULATORY INFORMATION

Chemical Safety Assessment: A Chemical Safety Assessment (CSA) has been completed for this substance.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Legal disclaimer: The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.