



Caustic soda

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: Solid caustic soda
Chemical name: Sodium hydroxide
Synonyms: Sodium hydrate
Molecular formula: NaOH
REACH registration number: 01-2119457892-27
Product type: Substance
CAS no.: 1310-73-2

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

Identified application:

- Reagent
- Acidity regulator
- Ion exchange resin regenerator
- Catalyst
- Etching agent
- Cleaning agent
- Chemical intermediate product

1.3. Details of the supplier of the safety data sheet

Company identification: See footer of Material Safety Data Sheet.

1.4. Emergency telephone number

Emergency telephone number: +32 (0)70-245-245 (Poison Control Centre)

2. Hazards identification

2.1. Classification of the substance or mixture

Product description: Substance

Classification according to Regulation (EC) No. 1272/2008, as amended

Classified as hazardous under European Regulation (EC) 1272/2008, as amended

Hazard class	Hazard category	Exposure route	H phrases
Skin corrosion/irritation	Category 1A		H314
Corrosive to metals	Category 1		H290



Classification according to Directive 1999/45/EC or 67/548/EC, as amended

Classified as hazardous under European Directive 1999/45/EC or 67/548/EC, as amended

Hazard class Hazard category	R phrase(s)
C	R35

2.2. Label elements

Danger symbols:



Signal word:

Danger

Contains:

Sodium hydroxide

Hazard statements:

H314 - Causes severe skin burns and eye damage.
H290 - May be corrosive to metals.

Precautionary measures

Prevention:

P260 – Do not breathe dust/fume/gas/mist/vapours/spray.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.

Response:

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 CENTRE or doctor/physician.

2.3. Other hazards

None.

3. Composition/information on ingredients

3.1. Concentration

Substance name	Concentration
Sodium hydroxide	>= 99%
CAS No.: 1310-73-2 / EC No.: 215-185-5 / Index No.: 011-002-00-6 REACH registration number: 01-2119457892-27	

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4. First aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air
	Apply oxygen or artificial respiration if needed.
	Place the exposed person in the recovery position, cover them and keep them warm.
	Consult a doctor immediately.
Eye contact	Consult a doctor or a poison information centre immediately.
	Promptly wash eyes with plenty of water while lifting the eyelids for at least 15 minutes.
	Apply a pain-relieving eyewash (oxybuprocaine) in case of problems opening the eyelids.
	Take the patient to a hospital immediately.
Skin contact	Immediately take off any contaminated clothing and shoes.
	Immediately rinse with plenty of water.
	Keep patient warm and take them to a calm environment.
	Consult a doctor or a poison information centre immediately.
	Wash any contaminated clothing before use.
Ingestion	Consult a doctor or a poison information centre immediately.
	Take the patient to a hospital immediately.
	If ingested, rinse mouth with water (only if the patient is conscious).
	Do not induce vomiting.
	Artificial respiration and/or oxygen may be necessary.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	Corrosive to respiratory tracts
	Symptoms: Difficulties breathing, coughing, chemical pneumonia, pulmonary oedema
	Prolonged or repeated exposure: Risk of sore throat, nosebleeds, chronic bronchitis
Skin contact	Corrosive
	Symptoms: Redness, swelling, burns
Eye contact	Causes severe burns.
	Small drops in the eye may cause irreversible tissue damage and blindness.
	May cause permanent eye irritation.
	Symptoms: Redness, Lacrimation, Swelling, burns
Ingestion	If ingested, serious burns to the mouth and neck and risk of perforation of the oesophagus and stomach.
	Symptoms: Nausea, Abdominal pain, Vomiting blood, Diarrhoea, Choking, Coughing, Serious difficulties in breathing



4.3. Indication of any immediate medical attention and special treatment needed

- Take the patient to a hospital immediately.
- Immediate medical attention is required.
- Medical surveillance for at least 48 hours.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Use extinguishing media appropriate for the local conditions and environment.

Unsuitable extinguishing media: Water may be ineffective

5.2. Special hazards arising from the substance or mixture

- The product is not flammable.
- Not flammable.
- Reacts violently with water.
- Reaction with metals releases hydrogen.

5.3. Advice for firefighters

- Wear a positive pressure mask in case of fire.
- Use personal protection equipment
- Wear a chemical-resistant overall.
- Cool off containers/tanks with water mist.
- Prevent firefighting runoff from contaminating surface water and groundwater systems.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel	Prevent further leaks or spillages if it is safe to do so
	Keep away from incompatible materials
Advice for emergency personnel	Evacuate personnel to a safe environment
	Keep bystanders away from and upwind of spilt material/leak
	Ventilate the area
	Wear suitable protective clothing

6.2. Environmental precautions

- May not be released into the environment.
- Do not allow runoff into surface water or drainage systems.
- Notify the authorities if the product contaminates rivers, lakes or sewers.



6.3. Methods and material for containment and cleaning up

- Sweep up and shovel into suitable containers for disposal.
- Avoid dust formation.
- Store in correctly labelled containers.
- Store in suitable sealed containers for disposal.
- Deal with the collected material as described under "Disposal".

6.4. Reference to other sections

See the protective measures in sections 7 and 8.

7. Handling and storage

7.1. Precautions for safe handling of the substance or mixture

- Used in a closed system.
- When diluting, always add the product to the water. Never add water to the product.
- Use equipment made from compatible materials.
- Keep away from incompatible materials.
- To prevent thermal decomposition, do not overheat.
- Ideally, the product should be transferred using a pump or with the help of gravity.

7.2. Conditions for safe storage, including any incompatibilities

Storage	Store in original container.
	Store in a well-ventilated place.
	Store in a dry place.
	Store in correctly labelled containers.
	Keep container sealed.
	Avoid dust formation.
	Keep away from incompatible materials.
Packaging material	
Suitable material	Stainless steel.
	Polyethylene.
	Paper & PE.
Unsuitable material	No data available

7.3. Specific end use(s)

Please get in touch for further information.



8. Exposure controls/personal protection

8.1. Control parameters

Exposure limit values US. ACGIH Threshold Limit Values 12 2010	CLV = 2 mg/m ³
Other information on limit values Derived No-Effect Levels/ Derived Minimal Effect Level	Workers, Inhalation, Chronic exposure, 1 mg/m ³ , Toxicity - Local impacts Consumers, Inhalation, Chronic exposure, 1 mg/m ³ , Toxicity - Local impacts

8.2. Exposure controls

Appropriate technical measures	Ensure adequate ventilation. Apply technical measures in order to keep within MAC values.
Individual protective measures Protection of respiratory tract Hand protection Eye protection Skin and body protection Hygienic measures	If dust or aerosols form use a respirator with an approved filter. Recommended filter type: P2
	Impermeable gloves Suitable material: PVC, neoprene, natural rubber, butyl rubber Unsuitable material: None given
	Mandatory use of chemical-resistant protective goggles.
	Chemical-resistant apron Overclothes and boots made from PVC, neoprene if dust forms.
	Eyewash bottles or eyewash stations in accordance with applicable standards. Immediately take off any contaminated clothing and shoes. Use in accordance with good industrial hygiene and safety standards.
Environmental exposure controls	Drain rinse water in compliance with local and national legislation.



9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information	
Appearance	Solid, crystalline, highly hygroscopic, flakes, blocks, microgranules
Colour	White
Odour:	Odourless
Molecular weight	40.01 g/mol
Important information relating to health, safety and the environment	
pH	> 13
pKa	No data
Melting/Freezing point	318.4°C, Pressure: 101.3 kPa
Boiling point/range	1,388°C, Pressure: 101.3 kPa
Flash point	not applicable
Evaporation rate	not applicable
Flammability (solid, gas)	The product is not flammable.
Flammability	not applicable
Explosion characteristics	Non-explosive, see section 10.
Vapour pressure	1 hPa at 739°C
Vapour density	no data available
Relative density	2.13 at 20°C
Bulk specific gravity	1.14 kg/m ³ at 20°C
Solubility	420 g/l, Water, at 0°C 1,100 g/l, Water, at 20°C 3,470 g/l, Water, at 100°C
Solubility	soluble, Alcohol (Glycerol)
Partition coefficient n-octanol/water	No data
Auto-ignition temperature	no data available
Decomposition temperature	no data available
Viscosity	Not applicable
Oxidising properties	Non-oxidising

9.2. Other information

Particle size distribution: 0.8 mm (average diameter)



10. Stability and reactivity

10.1. Reactivity

- Potential exothermic hazard.
- May be corrosive to metals.

10.2. Chemical stability

- Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

- Reaction with metals releases hydrogen.
- Exothermic reaction with strong acids.
- Risk of violent reaction.
- Risk of explosion.
- Reacts violently with water.

10.4. Conditions to avoid

- Do not expose to direct sunlight.
- To prevent thermal decomposition, do not overheat.
- Exposure to moisture.
- Freezing

10.5. Incompatible materials

- Metals, oxidising agents, water, acids, aluminium, other light metals and their alloys

10.6. Hazardous decomposition products

- Hydrogen

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	
Acute oral toxicity	no data available
Acute inhalation toxicity	no data available
Acute dermal toxicity	no data available

11.2. Skin corrosion/irritation

Corrosive

11.3. Serious eye damage/irritation

Corrosive

11.4. Respiratory or skin sensitisation

No observed effect



11.5. Mutagenicity in gametes

No mutagenic effects apparent from animal testing. No mutagenic effects apparent from in-vitro testing.

11.6. Carcinogenicity

No data available

11.7. Reproductive toxicity

Effect on fertility, foetotoxic effect, no observed effects

11.8. Specific target organ toxicity - single exposure

- Inhalation, Observations: Corrosive
- Oral, Observations: Corrosive
- Skin, Observations: Corrosive

11.9. Specific target organ toxicity - repeated exposure

Observations: not applicable

11.10. Inhalation hazard

No data available

12. Ecological information

12.1. Toxicity

- Fish, various species, LC50, 96 h, 35 – 189 mg/l
- Crustaceans, Ceriodaphnia sp., EC50, 48 h, 40.4 mg/l

12.2 Persistence and degradability

Abiotic degradation	
Air	Result: neutralisation via natural basicity
Water	Result: ionisation/neutralisation Conditions: pH
Soil	Result: ionisation/neutralisation

12.3. Bioaccumulative potential

Not relevant.

12.4. Soil mobility

Water, Ground/Sediment	Significant solubility and mobility
Soil	Soluble, mobile, ionisation/neutralisation
Air	Chemical degradation

**12.5. Results of PBT and vPvB assessment**

- This substance is not considered to be persistent, bioaccumulative or toxic (PBT).
- This substance is not considered to be very persistent or very bioaccumulative (vPvB).

12.6. Other harmful effects

No data available.

13. Instructions for disposal**13.1. Waste treatment methods**

- Dilute with plenty of water.
- Solutions with high pH values must be neutralised before discharge.
- Neutralise with acid.
- Comply with local and national regulations.

13.2. Contaminated packaging

- Instead of incinerating or disposing of packaging, reuse where possible.
- Clean container with water.
- Dispose of as unused product.
- Comply with local and national regulations.

14. Transport information**14.1 International transport regulations**

IATA-DGR	UN Number	UN 1823
	Class	8
	Packing group	II
	ICAO labels	8 - Corrosive
	Correct shipping name in accordance with the UN Model Regulations	SODIUM HYDROXIDE, SOLID
IMDG	UN Number	UN 1823
	Class	8
	Packing group	II
	IMDG labels	8 - Corrosive
	HI/UN No.	1823
	EMS	F-A S-B
	Correct shipping name in accordance with the UN Model Regulations	SODIUM HYDROXIDE, SOLID
ADR	UN Number	UN 1823
	Class	8
	Packing group	II
	ADR/RID labels	8 - Corrosive



	HI/UN No.	80 / 1823
	Correct shipping name in accordance with the UN Model Regulations	SODIUM HYDROXIDE, SOLID
RID	UN Number	UN 1823
	Class	8
	Packing group	II
	ADR/RID labels	8 - Corrosive
	HI/UN No.	80 / 1823
	Correct shipping name in accordance with the UN Model Regulations	SODIUM HYDROXIDE, SOLID
ADN	UN Number	UN 1823
	Class	8
	Packing group	II
	ADR/RID labels	8 - Corrosive
	Correct shipping name in accordance with the UN Model Regulations	SODIUM HYDROXIDE, SOLID

15. Regulatory information

15.1. Specific safety, health and environmental regulations/legislation for the substance or mixture

- Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended.

- Council Directive 67/548/EEC of 27 June 1967 on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances, as amended

- Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on the classification, labelling and packaging of substances and mixtures, as amended

- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.

- Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.

- Directive 2008/98/EC of the European Parliament and of the Council of November 19, 2008 on waste
 - Working Conditions Regulation - Annex XII . Annex XIII . 2006 Stcr, N. 252, 29.12.2006 & National MAC list, amended



- Order of the Minister of Justice of 20 November 2009, taking into account in the Belgian Government Gazette the text of the Water Act as this stands after the entry into force of Article 1.10 of the Implementation Act of the Water Act.

Notification status	
Inventory information	Status
Toxic Substance Control Act - list (TSCA)	In accordance with the Classification List
Australian Inventory of Chemical Substances (AICS)	In accordance with the Classification List
Canadian Domestic Substances List (DSL)	In accordance with the Classification List
Korean Existing Chemicals Inventory (KECI (KR))	In accordance with the Classification List
European Inventory of Existing Commercial Chemical Substances (EINECS)	In accordance with the Classification List
Japanese Existing and New Chemical Substances (MITI List) (ENCS)	In accordance with the Classification List
Inventory of Existing Chemical Substances (China) (IECS)	In accordance with the Classification List
Philippine Inventory of Chemicals and Chemical Substances (PICCS)	In accordance with the Classification List
New Zealand Inventory of Chemicals (NZIOC)	In accordance with the Classification List

15.2. Chemical safety assessment

- A chemical safety assessment has been carried out for this substance.
- See exposure scenario.

16. Other information

16.1. Full text of R-phrases referred to in sections 2 and 3.

The full text of the R-phrase is stated in section 2.

R35 - Causes severe burns.

16.2. Other information

Revision: 18/03/2015

To the best of our knowledge, the above information is correct based the recipe used to manufacture the product in its country of origin. As data, standards and regulations can change and the conditions of use and application are beyond our control, we cannot guarantee (either explicitly or implicitly) the completeness or ongoing correctness of the information.