

SAFETY DATA SHEET
Sodium Hydroxide 50% in aqueous solution

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

1.1. Product identifier

Chemical type: Substance
Name: Sodium Hydroxide 50% in aqueous solution
Trade name: caustic soda
EC index no: 011-002-00-6
EC no: 215-185-5
CAS No.: 1310-73-2
REACH registration No.: 01-2119457892-27
IUPAC: Sodium Hydroxide, solution
Chemical name: Sodium Hydroxide, solution
Formula: NaOH
Synonyms: caustic soda 50% W/W, aqueous solution
caustic soda, conc=50%, aqueous solution
caustic, conc=50%, aqueous solution
liquid caustic, conc=50%, aqueous solution
lye, conc=50%, aqueous solution
soda lye, conc=50%, aqueous solution
sodium hydrate lye, conc=50%, aqueous solution
sodium hydrate, conc=50%, aqueous solution
sodium hydroxide, conc=50%, aqueous solution
sodium lye, conc=50%, aqueous solution
white caustic, conc=50%, aqueous solution

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

1.2.1. Relevant identified uses

Industrial/Professional use spec: Wide dispersive use

Function or use category: Adhesives, binding agents, Absorbents and adsorbents, Anti-freezing agents, Pesticides, non-agricultural (Biocides), Fillers, Explosives, Fertilisers, Fuels, Heat transferring agents, Hydraulic fluids and additives, pH-regulating agents, Laboratory chemicals, Intermediates, Lubricants and additives, Pharmaceuticals, Photo chemicals, Semiconductors, Cleaning/washing agents and additives, Welding and soldering agents, Cosmetics

1.2.2. Uses advised against

1.3. Details of the supplier of the safety data sheet

Company name: Nexchem Ltd
Unit 1 Underwood Court
Elm Tree Avenue
Glenfield
Leicester
Leicestershire

[cont...]

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LE3 8SG
Tel: 0116 2311130
Fax: 0116 2311124
Emergency Tel: +44 (0) 116 2877916 or +44 (0) 7714 303742 (24 Hours)
Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Corr. 1A H314

Full text of H-phrases: see section 16.

2.1.2. Classification according to Directive 67/548/EEC or 1999/45/EC

C; R35

Full text of R-phrases: see section 16.

2.1.3. Adverse physicochemical, human health and environmental effects

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No. 1272/2008 [CLP]



GHS05

CLP Signal word: Danger

Hazard statements (CLP): H314 - Causes severe skin burns and eye damage

Precautionary statements (CLP): P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
 P264 - Wash thoroughly after handling.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 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
 P363 - Wash contaminated clothing before reuse
 P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
 P310 - Immediately call a POISON CENTER or doctor/physician
 P321 - Specific treatment (see ... on this label)
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P405 - Store locked up
 P501 - Dispose of contents/container to

2.2.2. Labelling according to Directive 67/548/EEC or 1999/45/EC

Hazard symbols :



C - Corrosive

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R-phrases: R35 - Causes severe burns
S-phrases: (S1/2) - (Keep locked up and out of reach of children)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S37/39 - Wear suitable gloves and eye/face protection
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

2.3. Other hazards

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Full text of R-, H- and EUH-phrases: see section 16.

3.2. Mixtures

Not applicable

4. FIRST AID MEASURES (SYMPTOMS)

4.1. Description of first aid measures

First-aid measures general: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin.

Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

First-aid measures after ingestion: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Do not give chemical antidote. Call Poison Information Centre (www.big.be/antigif.htm). Immediately consult a doctor/medical service. Take the container/vomit to the doctor/hospital. Ingestion of large quantities: immediately to hospital.

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

Symptoms/injuries : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract.

Symptoms/injuries after inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible laryngeal spasm/oedema. Risk of lung oedema. Respiratory difficulties.

Symptoms/injuries after skin contact: Caustic burns/corrosion of the skin. Slow-healing wounds.

Symptoms/injuries after eye contact: Corrosion of the eye tissue. Permanent eye damage.

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Symptoms/injuries after ingestion: Vomiting. Diarrhoea. Burns to the gastric/intestinal mucosa. Possible esophageal perforation.
Bleeding of the gastrointestinal tract. Shock. AFTER ABSORPTION OF HIGH QUANTITIES:
Disturbances of consciousness.

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

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture

Fire hazard: DIRECT FIRE HAZARD. Non-combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard: INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

Reactivity: Absorbs the atmospheric CO₂. On heating: release of corrosive gases/vapours. Violent exothermic reaction with (some) acids. Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

General measures: Mark the danger area. No naked flames. Prevent soil and water pollution. Prevent spreading in sewers. Wash contaminated clothes. Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to heat: have neighbourhood close doors and windows. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation. Large spills/in confined spaces: consider evacuation.

5.3. Advice for fire fighters

No additional information available

6. ACCIDENTAL RELEASE MEASURES

The information in this section is applicable on all mentioned identified uses of this SDS.

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

General measures: Mark the danger area - No naked flames - Prevent soil and water pollution - Prevent spreading in sewers - Wash contaminated clothes - Exposure to fire/heat: keep upwind - Exposure to fire/heat: consider evacuation - Exposure to heat: have neighbourhood close doors and windows - In case of hazardous reactions: keep upwind - In case of reactivity hazard: consider evacuation - Large spills/in confined spaces: consider evacuation.

Personal protection (Emergency response): Gloves - Face-shield – Corrosion proof suit - Large spills/in enclosed spaces:

Handling the product: compressed air apparatus - Large spills/in enclosed spaces: gas-tight suit - Heat/fire exposure: compressed air/oxygen apparatus - Heat/fire exposure: gas-tight suit - See "Material-Handling" to select protective clothing Comply with the legal requirements - Measure the concentration in the air regularly – Carry operations in the open/under local - exhaust/ventilation or with respiratory protection – Observe very strict hygiene - avoid contact - Remove contaminated clothing immediately – Clean contaminated clothing - Handle and open the container with care - Keep container tightly closed - Keep away from naked flames/heat - Thoroughly clean/dry the installation before use - Do not discharge the waste into the drain.

6.1.2. For emergency responders

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6.2. Environmental precautions

Environmental precautions :

6.3. Methods and material for containment and cleaning up

Leak: Contain released substance, pump into suitable containers - Consult "Material-handling" to select material of containers - Plug the leak, cut off the supply - Dam up the liquid spill - Heat exposure: dilute toxic gas/vapour with water spray - Take account of toxic/corrosive precipitation water - Hazardous reaction: measure explosive gas-air mixture - Reaction: dilute combustible gas/vapour with water curtain

Disposal: Take up liquid spill into absorbent material, e.g.: dry sand/earth - or powdered limestone - Scoop absorbed substance into closing containers - See "Material-handling" for suitable container materials - Carefully collect the spill/leftovers - Neutralize small quantities of the liquid spill with acid solution - Wash away neutralized product with plentiful water - Damaged/cooled tanks must be emptied - Take collected spill to manufacturer/competent authority - Clean contaminated surfaces with an excess of water - Wash clothing and equipment after handling

Methods for cleaning:

6.4. Reference to other sections

Other information:

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.2. Conditions for safe storage, including any incompatibilities

Storage temperature: > 15 °C

Prohibitions on mixed storage: KEEP SUBSTANCE AWAY FROM: heat sources. combustible materials. (strong) acids. metals.

Storage area: Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Protect against frost. Provide for a tub to collect spills. Unauthorized persons are not admitted. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: hermetical. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packaging's in solid containers.

Packaging materials: SUITABLE MATERIAL: stainless steel. nickel. polyethylene. polypropylene. glass. stoneware/porcelain. MATERIAL TO AVOID: lead. aluminium. copper. tin. zinc. bronze.

7.3. Specific end use(s)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

8.2. Exposure controls

Personal protective equipment: Gloves. Face shield. Corrosion proof clothing. Gas mask with filter type B. Self-contained breathing apparatus if conc. in air > 1 VOL%

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Materials for protective clothing : GIVE GOOD RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. polyethylene. PVC. tetrafluoroethylene. viton. GIVE LESS RESISTANCE: chlorinated polyethylene. Styrenebutadiene rubber. nitrile rubber/PVC. GIVE POOR RESISTANCE: PVA. natural fibres.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Appearance:	Liquid.
Molecular mass:	40,00
Colour:	Colourless.
Odour:	odourless.
Odour threshold:	No data available
pH:	14
pH solution:	50 %
Melting point:	12 °C
Solidification point:	No data available
Boiling point:	143 °C
Flash point:	No data available
Relate vapour. rate comp. to butyl acetate:	No data available
Flammability (solid, gas):	No data available
Explosive limits:	No data available
Vapour pressure:	1,2 hPa
Relative vapour density at 20°C:	No data available
Relative density:	1,5
Density:	1525 kg/m ³
Solubility:	Water: completely
Log Pow:	No data available
Self-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	0,04 Pa.s (30°C)

9.2. Other information

10. STABILITY AND REACTIVITY

10.1. Reactivity

Absorbs the atmospheric CO₂. On heating: release of corrosive gases/vapours. Violent exothermic reaction with (some) acids.
Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

10.2. Chemical stability

Stable under normal conditions. Absorbs the atmospheric CO₂.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

10.5. Incompatible materials

10.6. Hazardous decomposition products

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Skin corrosion/irritation : Causes severe skin burns and eye damage.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - air:	Not dangerous for the ozone layer (Council Regulation (EC). No 2037/2000, O.J. L244 of 29/09/2000). Waste material code (91/689/EEC, Council Decision. 2001/118/EC, O.J. L47 of 16/2/2001): Waste material code packaging (91/689/EEC, Council Decision. 2001/118/EC, O.J. L47 of 16/2/2001):.
Ecology - water:	Mild water pollutant (surface water) Ground water pollutant Maximum concentration in drinking water: 200 mg/l (sodium) (Directive 98/83/EC) Harmful to fishes Harmful to invertebrates (Daphnia) pH shift According to literature, not bio accumulative Biodegradability: not applicable Chemical intermediate Industrial use PACKAGING/CONTAINER

caustic soda (1310-73-2)

LC50 fishes 1	45,4 mg/l (96 h, SALMO GAIARDNERI/ ONCORHYNCHUS MYKISS)
LC50 other aquatic organisms 1	33/100 (48 h, CRANGON CRANGON, PURE SUBSTANCE) mg/l
LC50 other aquatic organisms 2	100 mg/l (48 h, DAPHNIA MAGNA, PURE SUBSTANCE)

12.2. Persistence and degradability

12.3. Bio accumulative potential

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

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13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Ecology - waste materials: sodium and potassium hydroxide. Hazardous waste (91/689/EEC). Remove for physicochemical/ biological treatment. Do not discharge into surface water. packaging containing residues of or contaminated by. dangerous substances.

14. TRANSPORT INFORMATION

14.1. UN number

UN-No. : 1824

14.2. UN proper shipping name

Proper Shipping Name : Sodium hydroxide solution

Transport document description : UN 1824 Sodium hydroxide solution, 8, II

14.3. Transport hazard class(es)

14.3.1.Overland transport

Class (ADR) : 8 - Corrosive substances

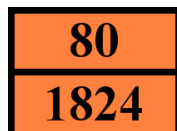
Hazard identification number (Kemler No.) : 80

Classification code (ADR) : C5

Danger labels (ADR) : 8 - Corrosive substances



Orange plates



14.3.2.Transport by sea

EmS-No. (1): F-A

EmS-No. (2): S-B

14.3.3.Air transport

Instruction "cargo" (ICAO) : 813

Instruction "passenger" (ICAO): 809

Instruction "passenger" - Limited quantities (ICAO): Y809

14.4. Packing group

Packing group (ADR): II

14.5. Environmental hazards

Other information: No supplementary information available.

14.6. Special precautions for user

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14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

State during transport (ADR-RID): as liquid.

15. REGULATORY INFORMATION

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

15.1.1. EU-Regulations

15.1.2. National regulations

WGK remark: Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS)

15.2. Chemical safety assessment

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

Full text of R-, H- and EUH-phrases:

Skin Corr. 1A	Skin Corrosion/Irritation Category 1A
H314	Causes severe skin burns and eye damage
R35	Causes severe burns

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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.