

**SAFETY DATA SHEET**  
according to Regulation (EC) No. 1907/2006

**CAUSTIC SODA 29 % =< conc. =< 53 %**

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

**1.1. Identification of the substance or preparation**

Product name : CAUSTIC SODA 29 % =< conc. =< 53 %  
Chemical Name : Sodium hydroxide  
Synonyms : Lye soda, Sodium hydrate, Caustic lye  
Molecular formula : NaOH

**1.2. Use of the Substance/Preparation**

Recommended use : - Reagent  
- pH-regulating agent  
- Ion exchange resins regenerating agent  
- Catalyst  
- Etching agent  
- Cleaning agent

**1.3. Company/Undertaking Identification**

Address : SOLVAY CHEMICALS INTERNATIONAL SA  
RUE DU PRINCE ALBERT, 44  
B- 1050 BRUXELLES

Telephone : +3225096111

Telefax : +3225096624

**1.4. Emergency and contact telephone numbers**

Emergency telephone : +44(0)208 762 8322 [CareChem 24] (Europe)  
GB: +44-1925-651277 (Product information)

E-mail address : [sdstracking@solvay.com](mailto:sdstracking@solvay.com)

**2. HAZARDS IDENTIFICATION**

**Appearance** : viscous liquid  
**Colour** : colourless  
**Odour** : odourless

- The preparation is classified as dangerous in accordance with Directive 1999/45/EC.
- Corrosive
- Causes severe burns.
- Hazardous decomposition products formed under fire conditions.



### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name (CAS-No. / EC-No. / Annex-1)	Concentration (W/W)	Classification	R-phrase(s)
<b>Sodium hydroxide</b> (1310-73-2 / 215-185-5 / 011-002-00-6 )	<b>&gt;= 29 - &lt;= 53 %</b>	<b>C</b>	<b>R35</b>

### 4. FIRST AID MEASURES

#### 4.1. Inhalation

- In case of accident by inhalation: remove casualty to fresh air and keep at rest.
- Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Call a physician immediately.

#### 4.2. Eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Consult with an ophthalmologist immediately in all cases.
- Take victim immediately to hospital.

#### 4.3. Skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off immediately with plenty of water.
- Keep warm and in a quiet place.
- Wash contaminated clothing before re-use.
- Call a physician immediately.

#### 4.4. Ingestion

- Call a physician immediately.
- Take victim immediately to hospital.

##### *If victim is conscious:*

- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.
- Do not give anything to drink.

##### *If victim is unconscious but breathing:*

- Artificial respiration and/or oxygen may be necessary.

### 5. FIRE-FIGHTING MEASURES

#### 5.1. Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### 5.2. Extinguishing media which shall not be used for safety reasons

- Water may be ineffective.

#### 5.3. Special exposure hazards in a fire

- The product is not flammable.
- Not combustible.
- Heating can release hazardous gases.
- Gives off hydrogen by reaction with metals.
- Contact with water may produce heat release and presents risks of splashing.

#### 5.4. Special protective equipment for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.



- Fire fighters must wear fire resistant personnel protective equipment.
- Wear chemical resistant oversuit

#### 5.5. Other information

- Cool containers / tanks with water spray.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.
- After the fire, proceed rapidly with cleaning of surfaces exposed to the fumes in order to limit equipment damage.
- Keep away from water.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions

- Isolate the area.
- Approach from upwind.
- Ventilate the area.
- Keep away from incompatible products
- Wear chemical resistant personal protective equipment
- Prevent further leakage or spillage if safe to do so.
- Refer to protective measures listed in sections 7 and 8.

### 6.2. Environmental precautions

- Should not be released into the environment.
- Do not flush into surface water or sanitary sewer system.
- If the product contaminates rivers and lakes or drains inform respective authorities.

### 6.3. Methods for cleaning up

- Dam up.
- Soak up with inert absorbent material.
- Prevent product from entering drains.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

## 7. HANDLING AND STORAGE

### 7.1. Handling

- Used in closed system
- Handle small quantities under a lab hood.
- Use only equipment and materials which are compatible with the product.
- Keep away from incompatible products
- Prevent the dangers of splashing when transferring or diluting.
- Dilution: add the product into water, but never the contrary.
- Preferably transfer by pump or gravity.

### 7.2. Storage

- Store in original container.
- Keep away from incompatible products
- Keep container tightly closed.
- Keep in a dry place.
- Keep in a banded area.
- Regularly check the condition and temperature of the containers.
- Minimum storage temperature: 25°C

### 7.3. Specific use(s)

- For further information, please contact: Supplier



#### 7.4. Packaging material

- Stainless steel

#### 7.5. Other information

- Provide tight electrical equipment well protected against corrosion.
- Refer to protective measures listed in sections 7 and 8.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Exposure Limit Values

#### Sodium hydroxide

- UK. EH40 Workplace Exposure Limits (WELs) 2007  
Short term exposure limit = 2 mg/m<sup>3</sup>
- US. ACGIH Threshold Limit Values 2008  
Ceiling Limit Value = 2 mg/m<sup>3</sup>

### 8.2. Exposure controls

- Provide local ventilation appropriate to the product decomposition risk (see section 10).
- Apply technical measures to comply with the occupational exposure limits.
- Refer to protective measures listed in sections 7 and 8.

#### 8.2.1. Occupational exposure controls

##### 8.2.1.1. Respiratory protection

- In the case of dust or aerosol formation use respirator with an approved filter.
- Recommended Filter type:
  - P2
  - Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.

##### 8.2.1.2. Hand protection

- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Protective gloves - impervious chemical resistant:
  - Suitable material : PVC, Neoprene, Natural Rubber
  - Unsuitable material : Leather

##### 8.2.1.3. Eye protection

- Chemical resistant goggles must be worn.
- If splashes are likely to occur, wear:
  - Tightly fitting safety goggles
  - Face-shield

##### 8.2.1.4. Skin and body protection

- Wear suitable protective clothing.
- If splashes are likely to occur, wear:
  - Rubber or plastic boots.
  - Rubber or plastic apron

##### 8.2.1.5. Hygiene measures

- Use only in an area equipped with a safety shower.
- Eye wash bottle with pure water
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

#### 8.2.2. Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. General Information (appearance, odour)

Appearance	: viscous liquid
Colour	: colourless
Odour	: odourless

### 9.2. Important health safety and environmental information

pH	: > 13
Boiling point/boiling range	: from 117 - 147 °C
Flash point	: <i>Remarks: The product is not flammable.</i>
Flammability	: <i>Remarks: The product is not flammable.</i>
Explosive properties	: <u><i>Explosion danger.</i></u> <i>Remarks: See section 10.</i>
Oxidizing properties	: <i>Remarks: Non oxidizer</i>
Vapour pressure	: < 13.3 hPa <i>Temperature: 20 °C</i>
Relative density / Density	: 1.33 - 1.53
Solubility	: Water : completely miscible <i>Remarks: Reacts violently with water.</i> : Soluble in: : Alcohol : Glycerol
Partition coefficient: n-octanol/water	: <i>Remarks: not applicable</i>
Viscosity	: 12 - 120 mPa.s <i>Temperature: 20 °C</i>

### 9.3. Other data

Freezing point:	: from 0 - 22 °C
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## 10. STABILITY AND REACTIVITY

### 10.1. Stability

- Stable under recommended storage conditions.
- Reacts violently with water.
- Potential for exothermic hazard
- Keep away from strong acids.
- Risk of violent reaction.
- Exothermic reaction
- Corrosive in contact with metals
- Gives off hydrogen by reaction with metals.

### 10.2. Conditions to avoid

- Keep away from direct sunlight.
- To avoid thermal decomposition, do not overheat.
- Exposure to moisture.



- freezing

### 10.3. Materials to avoid

- Metals, Oxidizing agents, Water, Acids, Aluminium, other light metals and their alloys

### 10.4. Hazardous decomposition products

- Hydrogen

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Toxicological data

#### *Acute oral toxicity*

- LD50, , Remarks: no data available

#### *Acute inhalation toxicity*

- LC50, , Remarks: no data available

#### *Acute dermal toxicity*

- LD50, , Remarks: no data available

#### *Skin irritation*

- Corrosive

#### *Eye irritation*

- Corrosive

#### *Sensitisation*

- Did not cause sensitization on laboratory animals.

#### *Chronic toxicity*

- Inhalation, Repeated exposure, rat, Target Organs: Respiratory system, corrosive effects
- Oral, Repeated exposure, rat, Target Organs: gastro-intestinal system, corrosive effects

#### *Genetic toxicity in vitro*

- in vitro, Animal testing did not show any mutagenic effects.

#### *Possible hazards (summary)*

- Toxic effect linked with corrosive properties

### 11.2. Health effects

#### *Main effects*

- The product causes burns of eyes, skin and mucous membranes.
- The seriousness of the lesions and the prognosis of intoxication depend directly on the concentration and duration of exposure.

#### *Inhalation*

- Corrosive to respiratory system
- Inhalation may provoke the following symptoms:
  - Breathing difficulties
  - Cough
  - chemical pneumonitis
  - pulmonary oedema
- Repeated or prolonged exposure: Risk of sore throat, nose bleeds, chronic bronchitis.

#### *Eye contact*

- Severe eye irritation
- Redness
- Lachrymation
- Swelling of tissue
- Risk of serious damage to eyes.
- May cause permanent eye injury.
- Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

#### *Skin contact*

- Severe skin irritation



- Redness
- Swelling of tissue
- Causes severe burns.
- Risk of shock.

**Ingestion**

- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Risk of shock.
- Risk of throat (o)edema and suffocation.
- Symptoms: Salivation, Nausea, Bloody vomiting, Abdominal pain, Diarrhoea, Cough.

## 12. ECOLOGICAL INFORMATION

### 12.1. Ecotoxicity effects

**Acute toxicity**

- Fishes, *Gambusia affinis*, LC50, 96 h, 125 mg/l  
Remarks: (pH > 10)
- Crustaceans, *Ceriodaphnia dubia*, EC80, 48 h, 40 mg/l  
Remarks: (pH > 10)

**Chronic toxicity**

- Remarks: no data available

### 12.2. Mobility

- Air, Chemical degradation
- Water, Soil/sediments  
Remarks: considerable solubility and mobility
- Soil/sediments  
Remarks: rain washout

### 12.3. Persistence and degradability

**Abiotic degradation**

- Air  
Result: neutralization by natural alkalinity
- Water  
Result: ionization/neutralization  
Conditions: pH
- Soil  
Result: ionization/neutralization

**Biodegradation**

- Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.4. Bioaccumulative potential

- Bioaccumulative potential  
Result: not applicable

### 12.5. Other adverse effects

- no data available

### 12.6. Possible hazards (summary)

- Hazard for the environment is related to the alkaline properties of the product.
- Hazard for the aquatic environment is limited due to product properties:
- Diluted product is rapidly neutralized at environmental pH.



## 13. DISPOSAL CONSIDERATIONS

### 13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- For unused and uncontaminated product, the preferred options include sending to a licensed, permitted: recycler, reclaim, incinerator or other thermal destruction device or industrial landfill.
- or
- Dilute with plenty of water.
- Solutions with high pH-value must be neutralized before discharge.
- Neutralise with acid.

### 13.2. Packaging treatment

- Empty containers.
- Clean container with water.
- Dispose of as unused product.
- or
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.
- The empty and clean containers are to be reused in conformity with regulations.

## 14. TRANSPORT INFORMATION

**UN-Number** **1824**

### IATA-DGR

Class	8
Packing group	II
ICAO-Labels	CORROSIVE
Proper shipping name: SODIUM HYDROXIDE SOLUTION	

### IMDG

Class	8
Packing group	II
IMDG-Labels	Corrosive
HI/UN No.	1824
EmS:	F-A, S-B
Proper shipping name: SODIUM HYDROXIDE SOLUTION	

### ADR

Class	8
Packing group	II
ADR/RID-Labels	8
HI/UN No.	80/1824
Proper shipping name: SODIUM HYDROXIDE SOLUTION	

### RID

Class	8
Packing group	II
ADR/RID-Labels	8
HI/UN No.	80/1824
Proper shipping name: SODIUM HYDROXIDE SOLUTION	



## 15. REGULATORY INFORMATION

### 15.1. EC Label

- Hazardous components which must be listed on the label: Sodium hydroxide
- The product is classified and labelled in accordance with Directive 1999/45/EC.

Symbol(s)	C	Corrosive
R-phrase(s)	R35	Causes severe burns.
S-phrase(s)	S 1/2 S26  S37/39 S45	Keep locked up and out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### 15.2. Inventory Information

<b>Toxic Substance Control Act list (TSCA)</b>	: -	In compliance with inventory.
<b>Australian Inventory of Chemical Substances (AICS)</b>	: -	In compliance with inventory.
<b>Canadian Domestic Substances List (DSL)</b>	: -	In compliance with inventory.
<b>Korean Existing Chemicals List (ECL)</b>	: -	In compliance with inventory.
<b>EU list of existing chemical substances (EINECS)</b>	: -	In compliance with inventory.
<b>Japanese Existing and New Chemical Substances (MITI List) (ENCS)</b>	: -	In compliance with inventory.
<b>Inventory of Existing Chemical Substances (China) (IECS)</b>	: -	In compliance with inventory.
<b>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</b>	: -	In compliance with inventory.
<b>New Zealand Inventory of Chemicals (NZIOC)</b>	: -	In compliance with inventory.

### 15.3. Other regulations

- European Waste Catalogue, Decision (2000/532/EC), Hazardous waste, Waste codes should be assigned by the user based on the application for which the product was used.
- 06 02 04 (sodium and potassium hydroxide)

## 16. OTHER INFORMATION

### 16.1. Administrative information

- Update  
This data sheet contains changes from the previous version in section(s): 1.4
- Distribute new edition to clients

### 16.2. Text of R phrases mentioned in Section 3

- R35: Causes severe burns.



This SDS is only intended for the indicated country to which it is applicable. The European SDS format compliant with the applicable European legislation is not intended for use nor distribution in countries outside the European Union with the exception of Norway and Switzerland. Safety datasheets applicable in other countries/regions are available upon request.

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.

