

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

Printing date 26.11.2010

Revision: 12.11.2010

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

· **Product details**

· **Trade name:** Sodium hydroxide

· **Registration number** 05-2116195355-38-0000 (Pre-registration Number)

· **Application of the substance / the preparation**

*It is used in many industries, mostly as a strong chemical base in the manufacture of pulp and paper, textiles, drinking water, soaps and detergents and as a drain cleaner.*

· **Manufacturer/Supplier:**

Grasim Industries Ltd.

Chemical Division

Birlagram, Nagda (MP) - 456331

Phone-+91-7366- 245848, 248040

· **Further information obtainable from:**

Mr. Rakesh S. Baghel

E-mail id: rakesh.baghel@adityabirla.com

· **Information in case of emergency:**

Contact details of European importer

Emergency telephone number:

Telephone number of EU importer:

Opening hours:

Other Comments (e.g. language(s) of the phone service): English

### 2 Hazards identification

· **Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

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

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

R35: Causes severe burns.

· **Information concerning particular hazards for human and environment:** Not applicable.

· **Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

· **Hazard pictograms**



GHS05

· **Signal word** Danger

· **Hazard-determining components of labelling:** Void

· **Hazard statements**

H314 Causes severe skin burns and eye damage.

· **Precautionary statements**

P260

Do not breathe dust/fume/gas/mist/vapours/spray.

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**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.

**P405** Store locked up.

**P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**



C Corrosive

· **Risk phrases:**

35 Causes severe burns.

· **Safety phrases:**

1/2 Keep locked up and out of the reach of children.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

37/39 Wear suitable gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### 3 Composition/information on ingredients

· **Chemical characterization:**

· **CAS No. Description**

1310-73-2 Sodium hydroxide

· **Identification number(s)**

· **EINECS Number:** 215-185-5

· **Index number:** 011-002-00-6

· **Additional information:**

Molecular Formula: NaOH

Molecular Weight: 40.00 g/mol

### 4 First aid measures

· **General information:**

Remove breathing equipment only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician

· **After skin contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.

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**· After eye contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.  
Get medical attention immediately

**· After swallowing:**

Do not induce vomiting.  
Give large quantities of water or milk if available.  
Never give anything by mouth to an unconscious person.  
Get medical attention immediately.

**· Information for doctor:**

Perform endoscopy in all cases of suspected sodium hydroxide ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also required.

**· The following symptoms may occur:**

**Inhalation:** Severe irritant. Effects from inhalation of dust or mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur.

**Ingestion:** Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure.

**Skin Contact:** Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposures.

**Eye Contact:** Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

## 5 Firefighting measures

· **Suitable extinguishing agents:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

· **Special hazards caused by the substance, its products of combustion or resulting gases:**

Contact with moisture or water may generate sufficient heat to ignite combustible materials.  
Gives off irritating or toxic fumes (or gases) in a fire.

· **Protective equipment:**

Mouth respiratory protective device.  
wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

· **Additional information**

Do not get water inside containers.  
Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials.  
Adding water to caustic solution generates large amounts of heat.

## 6 Accidental release measures

· **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.

· **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.

· **Measures for cleaning/collecting:**

Use neutralizing agent.  
Ensure adequate ventilation.  
Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill.  
Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

Do not flush caustic residues to the sewer.

Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric.

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Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal.

## 7 Handling and storage

- **Handling:**

- **Information for safe handling:**

*During handling of liquid, prevent contact with skin and eyes by using adequate personal protective equipment*

*If the release of airborne material is likely, exhaust ventilation and/or respiratory protection may also be necessary.*

- **Information about fire - and explosion protection:**

*Keep ignition sources away - Do not smoke.*

*Protect from heat.*

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

*Store in well ventilated area.*

*Store in a cool location.*

- **Information about storage in one common storage facility:**

*Keep container tightly closed in a dry and well-ventilated place.*

*Store away from all heat sources, open flame, sources of ignition and incompatible materials like acids, flammable liquids, organic halogen compounds, nitro compounds, and amphoteric metals, such as aluminum, magnesium and zinc.*

- **Further information about storage conditions:**

*Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Do not store with aluminum or magnesium. Do not mix with acids or organic materials.*

- **Specific applications**

*Used in agriculture, forestry, fishery, manufacture of textiles, leather, fur and Building and construction work.*

*Use of laboratory reagents in small scale laboratories.*

*Constructional articles and building material for indoor use: wall construction material ceramic, metal, plastic and wood construction material, insulating material*

*Constructional articles and building material for outdoor use: wall construction material, road surface material, ceramic, metal, plastic and wood construction material, insulating material.*

## 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:**

*Adequate engineering controls and/or personal protective equipment must be used to prevent contact with skin and eyes. Engineering controls and/or respirators may be necessary when the generation of airborne mists or fogs are possible.*

- **Ingredients with limit values that require monitoring at the workplace:** Not required.

- **Additional information:** The lists valid during the making were used as basis.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

*Keep away from foodstuffs, beverages and feed.*

*Immediately remove all soiled and contaminated clothing*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes and skin.*

- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.

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**· Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves** Impervious rubber or vinyl gloves with gauntlets.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**· Eye protection:**

Tightly sealed goggles

**· Body protection:**

Rubber or vinyl apron.  
rubber boots or rubber overshoes.

## 9 Physical and chemical properties

**· General Information****· Appearance:**

**Form:** Solid / Liquid

**Colour:** White

**· Odour:** Odourless

**· Change in condition**

**Melting point/Melting range:** 318°C

**Boiling point/Boiling range:** 1388°C (at 1013 hPa)

**· Flash point:** Not applicable.

**· Flammability (solid, gaseous):** Product is not flammable.

**· Danger of explosion:** Contact with metals such as aluminum, magnesium, tin, and zinc cause formation of flammable and explosive hydrogen gas.

**· Vapour pressure at 800°C:** 3.5 hPa

**· Density at 20°C:** 2.13 g/cm<sup>3</sup>

**· Solubility in / Miscibility with water at 20°C:** 420 g/l

## 10 Stability and reactivity

**· Thermal decomposition / conditions to be avoided:**

Keep away from ignition sources, heat, moisture, naked flame dusting and incompatibles.

**· Materials to be avoided:**

Avoid Contact with acids, flammable liquids, organic halogen compounds, nitro compounds, and amphoteric metals, such as aluminum, magnesium and zinc

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**· Dangerous decomposition products:**

Sodium oxide. Decomposition by reaction with certain metals releases flammable and explosive hydrogen gas.

**11 Toxicological information****· Acute toxicity:****· LD/LC50 values relevant for classification:**

|      |      |                                   |
|------|------|-----------------------------------|
|      | LD50 | 40mg/kg (intraperitoneal) (mouse) |
| Oral | LD50 | 2000 mg/kg (rat)                  |
|      | LDLo | 500mg/kg (rabbit)                 |

**· Primary irritant effect:****· on the skin:** Strong caustic effect on skin and mucous membranes.**· on the eye:** Strong caustic effect.**· Sensitization:** No sensitizing effects known.**· Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**12 Ecological information****· Ecotoxicological effects:****· Aquatic toxicity:**

|      |                         |
|------|-------------------------|
| EC50 | 40 mg/l (Fish)          |
| LC50 | 33-189 mg/l. (Bacteria) |

**· Additional ecological information:****· General notes:**

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

**· Results of PBT and vPvB assessment TO BE PROVIDED IN THE REGISTRATION DOSSIER****13 Disposal considerations****· Product:****· Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**· Uncleaned packaging:****· Recommendation:** Disposal must be made according to official regulations.**· Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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### 14 Transport information

· **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 8 Corrosive substances.
- **Danger code (Kemler):** 80
- **UN-Number:** 1823
- **Packaging group:** II
- **Hazard label:** 8
- **Description of goods:** 1823 SODIUM HYDROXIDE, SOLID
- **Tunnel restriction code E**

· **Maritime transport IMDG:**



- **IMDG Class:** 8
- **UN Number:** 1823
- **Label:** 8
- **Packaging group:** II
- **EMS Number:** F-A,S-B
- **Marine pollutant:** No
- **Segregation groups:** Alkalis
- **Proper shipping name:** SODIUM HYDROXIDE, SOLID

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 1823
- **Label:** 8
- **Packaging group:** II
- **Proper shipping name:** SODIUM HYDROXIDE, SOLID

- **UN "Model Regulation":** UN1823, SODIUM HYDROXIDE, SOLID, 8, II

### 15 Regulatory information

- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms** Please refer section 2
- **Signal word** Danger
- **Hazard statements** Please refer section 2
- **Labelling according to EU guidelines:**
- **Risk phrases:** Please refer section 2
- **Safety phrases:** Please refer section 2

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- **Chemical safety assessment A** Chemical Safety Assessment has not been carried out.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
- **Substances of very high concern (SVHC) according to REACH, Article 57**  
The substance is not listed as SVHC.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Contact:** Mr. Rakesh S. Baghel
- **Abbreviations and acronyms:**  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association"  
(IATA) ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization"  
(ICAO) GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society) LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent
- **Sources**
  - Data from ACToR: Aggregated Computational Toxicology Resource  
<http://actor.epa.gov/actor/faces/GenericChemical.jsp>
  - Data from SIDS web page  
<http://www.inchem.org/documents/sids/sids/NAHYDROX.pdf>
  - Data from Inchem web page  
<http://www.inchem.org/documents/icsc/icsc/eics0360.htm>
  - MSDS of Mallinckrodt chemicals  
<http://www.jtbaker.com/msds/englishhtml/s4034.htm>
  - MSDS of FMC Wyoming Corporation  
<http://msds.fmc.com/msds/100000010035-msds-us-e.pdf>
  - Data from Look Chem web page  
<http://www.lookchem.com/cas-131/1310-73-2.html>
  - Data from Toxnet web page  
<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~sc2krm:1>
  - Data from Chem id web page  
<http://chem.sis.nlm.nih.gov/chemidplus/jsp/common/ChemFullDisplay.jsp?calledFrom=lite&chemid=0001310732>
  - Data from Chemspider web page  
<http://www.chemspider.com/Chemical-Structure.14114.html>
- **\* Data compared to the previous version altered.**
  - Section 3: Composition /Information on Ingredients
  - Section 4: First-aid measures.
  - Section 5: Fire-fighting measures
  - Section 6: Accidental Release measures
  - Section 7: Handling and storage.
  - Section 8: Exposure Controls/Personal protection.
  - Section 9: Physical and Chemical properties.
  - Section 10: Stability and Reactivity.

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- Section 11: Toxicological Information.
- Section 12: Ecological Information.

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