

# Sodium hydroxide

## Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 06/10/2010 Revision date: 15/11/2017  
Supersedes 28/09/2011

**S0523**

Version: 2.0

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

### 1.1. Product identifier

Product form : Substance  
Trade name : Sodium hydroxide  
EC-No. : 215-185-5  
CAS-No. : 1310-73-2  
REACH registration No : 01-2119457892-27  
Product code : S0523  
Formula : NaOH  
Product group : Raw material

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

#### 1.2.1. Relevant identified uses

Main use category : Professional use  
Industrial/Professional use spec : For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

Duchefa Biochemie B.V.  
A. Hofmanweg 71  
2031 BH Haarlem - The Netherlands  
T +31(0)23-5319093 - F +31(0)23-5318027  
[info@duchefa.nl](mailto:info@duchefa.nl)

### 1.4. Emergency telephone number

Emergency number : Supplier contact information:  
+31(0)23-5319093 (M-F 09:00-17:00)  
+31(0)6-30109355 (outside office hours)

| Organisation/Company                                        | Address                                                                             | Comment                                   |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------|
| World Health Organization world directory of poison centres | <a href="http://apps.who.int/poisoncentres/">http://apps.who.int/poisoncentres/</a> | Consult website for a local poison centre |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Skin corrosion/irritation, Category 1A H314  
Corrosive to metals, Category 1 H290

Full text of hazard classes and H-statements : see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

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### 2.2. Label elements

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

Hazard pictograms (CLP)

:



GHS05

Signal word (CLP)

: Danger

Hazard statements (CLP)

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

Precautionary statements (CLP)

: P280 - Wear eye protection, face protection, protective clothing, protective gloves.  
P308+P313 - IF exposed or concerned: Get medical advice/attention.  
P305+P351 - IF IN EYES: Rinse cautiously with water for several minutes.  
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P406 - Store in corrosive resistant container with a resistant inner liner.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name : Sodium hydroxide

CAS-No. : 1310-73-2

EC-No. : 215-185-5

| Name                           | Product identifier                                                       | %    |
|--------------------------------|--------------------------------------------------------------------------|------|
| Sodium hydroxide, caustic soda | (CAS-No.) 1310-73-2<br>(EC-No.) 215-185-5<br>(EC Index-No.) 011-002-00-6 | > 98 |

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Remove contaminated clothes. Wash off with plenty of water. Seek medical advice.

First-aid measures after eye contact : Rinse immediately with plenty of water. Get immediate medical advice/attention.

First-aid measures after ingestion : Give water to drink. Do not induce vomiting because of corrosive effects. Get immediate medical advice/attention.

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

Symptoms/effects after inhalation : Shortness of breath. Cough.

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|                                     |                                                                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Symptoms/effects after skin contact | : Causes severe burns.                                                                                         |
| Symptoms/effects after eye contact  | : Blurred vision. Risk of serious damage to eyes. Direct contact may result in corneal injury.                 |
| Symptoms/effects after ingestion    | : Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Abdominal pain, nausea. |

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>). Water spray. Sand.

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : When exposed to heat, may decompose liberating hazardous gases.

### 5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.  
Other information : Prevent fire fighting water from entering the environment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

#### 6.1.1. For non-emergency personnel

Measures in case of dust release : Avoid dust formation.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep up dry powder and dispose properly. Use non-corrodable disposal containers.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Handle in accordance with good industrial hygiene and safety procedures. Avoid dust formation.  
Hygiene measures : Ensure prompt removal from eyes, skin and clothing.

**7.2. Conditions for safe storage, including any incompatibilities**

Storage conditions : Store in dry, well-ventilated area. Store at room temperature. Keep container closed when not in use. Store in original container or corrosive resistant and/or lined container.

**7.3. Specific end use(s)**

For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters**

| Sodium hydroxide (1310-73-2)          |                     |
|---------------------------------------|---------------------|
| DNEL/DMEL (Workers)                   |                     |
| Long-term - local effects, inhalation | 1 mg/m <sup>3</sup> |
| DNEL/DMEL (General population)        |                     |
| Long-term - local effects, inhalation | 1 mg/m <sup>3</sup> |

Additional information : Provide local exhaust or general room ventilation

**8.2. Exposure controls****Hand protection:**

| Type   | Material             | Permeation        | Thickness (mm) | Standard |
|--------|----------------------|-------------------|----------------|----------|
| Gloves | Nitrile rubber (NBR) | 6 (> 480 minutes) | 0,11           | EN 374   |

**Eye protection:**

Safety glasses (to European standard EN 166 or equivalent)

**Skin and body protection:**

Long sleeved protective clothing

**Respiratory protection:**

Wear appropriate mask. Filter type P2 (EN 143)

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

|                                            |                               |
|--------------------------------------------|-------------------------------|
| Physical state                             | : Solid                       |
| Appearance                                 | : Powder. Crystalline powder. |
| Molecular mass                             | : 40 g/mol                    |
| Colour                                     | : White.                      |
| Odour                                      | : No data available           |
| Odour threshold                            | : No data available           |
| pH                                         | : ≈ 14 (100 g/l, 20 °C)       |
| Relative evaporation rate (butylacetate=1) | : No data available           |
| Melting point                              | : 319 - 322 °C                |
| Freezing point                             | : No data available           |
| Boiling point                              | : 1390 (1.013 hPa)            |
| Flash point                                | : No data available           |
| Auto-ignition temperature                  | : No data available           |
| Decomposition temperature                  | : No data available           |

|                                  |                                  |
|----------------------------------|----------------------------------|
| Flammability (solid, gas)        | : No data available              |
| Vapour pressure                  | : No data available              |
| Relative vapour density at 20 °C | : No data available              |
| Relative density                 | : No data available              |
| Density                          | : 2,13 g/cm <sup>3</sup> (20 °C) |
| Solubility                       | : Water: 1090 g/l (20 °C)        |

|                      |                     |
|----------------------|---------------------|
| Log Pow              | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic   | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits     | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

No additional information available

### 10.3. Possibility of hazardous reactions

Strong acids. Organic products.

### 10.4. Conditions to avoid

Moisture.

### 10.5. Incompatible materials

Aluminium. Metals. Zinc. Metal alloy. This material may attack some forms of plastics and rubbers.

### 10.6. Hazardous decomposition products

Reacts with water, generates heat.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                                   |                                                                         |
|-----------------------------------|-------------------------------------------------------------------------|
| Acute toxicity                    | : Not classified                                                        |
| Skin corrosion/irritation         | : Causes severe skin burns and eye damage.<br>pH: ≈ 14 (100 g/l, 20 °C) |
| Serious eye damage/irritation     | : Serious eye damage, category 1, implicit<br>pH: ≈ 14 (100 g/l, 20 °C) |
| Respiratory or skin sensitisation | : Not classified                                                        |
| Germ cell mutagenicity            | : Not classified                                                        |
| Carcinogenicity                   | : Not classified                                                        |
| Reproductive toxicity             | : Not classified                                                        |
| STOT-single exposure              | : Not classified                                                        |
| STOT-repeated exposure            | : Not classified                                                        |

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Aspiration hazard : Not classified

Other information : See actual entry in RTECS for complete information: WB4900000.

## SECTION 12: Ecological information

### 12.1. Toxicity

| Sodium hydroxide (1310-73-2) |                                               |
|------------------------------|-----------------------------------------------|
| LC50 fish 1                  | 45,4 mg/l Oncorhynchus mykiss (Rainbow trout) |
| LC50 fish 2                  | 125 mg/l Gambusia affinis (Mosquito fish)     |
| EC50 Daphnia 1               | 76 mg/l (Daphnia magna)                       |
| EC50 Daphnia 2               | 40,4 mg/l (Ceriodaphnia)                      |

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

Other adverse effects : May cause pH changes in aqueous ecological systems.

Additional information : Avoid release to the environment. Prevent entry to sewers and public waters

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of this material and its container at hazardous or special waste collection point. Dispose in a safe manner in accordance with local/national regulations.

## SECTION 14: Transport information

In accordance with ADR / IATA / IMDG

| ADR                                         | IMDG                                   | IATA                                   |
|---------------------------------------------|----------------------------------------|----------------------------------------|
| <b>14.1. UN number</b>                      |                                        |                                        |
| 1823                                        | 1823                                   | 1823                                   |
| <b>14.2. UN proper shipping name</b>        |                                        |                                        |
| SODIUM HYDROXIDE, SOLID                     | SODIUM HYDROXIDE, SOLID                | Sodium hydroxide, solid                |
| <b>Transport document description</b>       |                                        |                                        |
| UN 1823 SODIUM HYDROXIDE, SOLID, 8, II, (E) | UN 1823 SODIUM HYDROXIDE, SOLID, 8, II | UN 1823 Sodium hydroxide, solid, 8, II |
| <b>14.3. Transport hazard class(es)</b>     |                                        |                                        |
| 8                                           | 8                                      | 8                                      |

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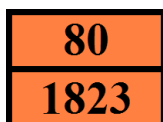
according to Regulation (EU) 2015/830

| ADR                                                                              | IMDG                                                                              | IATA                                                                                |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |
| <b>14.4. Packing group</b>                                                       |                                                                                   |                                                                                     |
| II                                                                               | II                                                                                | II                                                                                  |
| <b>14.5. Environmental hazards</b>                                               |                                                                                   |                                                                                     |
| Dangerous for the environment : No                                               | Dangerous for the environment : No<br>Marine pollutant : No                       | Dangerous for the environment : No                                                  |
| No supplementary information available                                           |                                                                                   |                                                                                     |

### 14.6. Special precautions for user

#### Overland transport

Classification code (ADR) : C6  
Limited quantities (ADR) : 1kg  
Excepted quantities (ADR) : E2  
Transport category (ADR) : 2  
Hazard identification number (Kemler No.) : 80  
Orange plates :



Tunnel restriction code (ADR) : E  
EAC code : 2W

#### - Transport by sea

Limited quantities (IMDG) : 1 kg  
Excepted quantities (IMDG) : E2  
EmS-No. (Fire) : F-A  
EmS-No. (Spillage) : S-B  
Stowage category (IMDG) : A  
Segregation (IMDG) : SG35  
Properties and observations (IMDG) : White pellets, flakes, lumps or solid blocks, deliquescent. Reacts with ammonium salts, evolving ammonia gas. In the presence of moisture, corrosive to aluminium, zinc and tin. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.

#### - Air transport

PCA Excepted quantities (IATA) : E2  
PCA Limited quantities (IATA) : Y844  
PCA limited quantity max net quantity (IATA) : 5kg  
PCA packing instructions (IATA) : 859  
PCA max net quantity (IATA) : 15kg  
CAO packing instructions (IATA) : 863  
CAO max net quantity (IATA) : 50kg  
ERG code (IATA) : 8L

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. EU-Regulations**

No REACH Annex XVII restrictions

Sodium hydroxide is not on the REACH Candidate List

Sodium hydroxide is not on the REACH Annex XIV List

**15.1.2. National regulations**

Ensure all national/local regulations are observed.

**Germany**

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 142)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

**Netherlands**

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

**Denmark**

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

**15.2. Chemical safety assessment**

No additional information available

**SECTION 16: Other information**

Indication of changes:

|      |                  |          |                                                    |
|------|------------------|----------|----------------------------------------------------|
| 1.4  | Emergency number | Modified |                                                    |
| 8.2  | Hand protection  | Modified | Specified material, thickness, et cetera of gloves |
| 11.1 | RTECS no         | Added    |                                                    |

Abbreviations and acronyms:

|      |                                                                                     |
|------|-------------------------------------------------------------------------------------|
| ATE  | Acute Toxicity Estimate                                                             |
| ADR  | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| BCF  | Bioconcentration factor                                                             |
| CLP  | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008         |
| DPD  | Dangerous Preparations Directive 1999/45/EC                                         |
| DSD  | Dangerous Substances Directive 67/548/EEC                                           |
| IATA | International Air Transport Association                                             |

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|       |                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------|
| IMDG  | International Maritime Dangerous Goods                                                            |
| LC50  | Median lethal concentration                                                                       |
| LD50  | Median lethal dose                                                                                |
| LOAEL | Lowest Observed Adverse Effect Level                                                              |
| NOAEC | No-Observed Adverse Effect Concentration                                                          |
| PBT   | Persistent Bioaccumulative Toxic                                                                  |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| SDS   | Safety Data Sheet                                                                                 |

Data sources : ECHA (European Chemicals Agency). Supplier.

Full text of H- and EUH-statements:

|               |                                          |
|---------------|------------------------------------------|
| Met. Corr. 1  | Corrosive to metals, Category 1          |
| Skin Corr. 1A | Skin corrosion/irritation, Category 1A   |
| H290          | May be corrosive to metals.              |
| H314          | Causes severe skin burns and eye damage. |

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*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*