# Safety Data Sheet
## SODIUM HYDROXIDE

## 1. Identification of the substance/preparation and of the Company/undertaking

### 1.1 Product identifier

| | |
|---|---|
| **Product name** | SODIUM HYDROXIDE |
| **Product code** | MI11233 |
| **Synonyms** | CAUSTIC SODA, SODIUM HYDROXIDE PRILLS |
| **Molecular weight** | 49.99 g/mol |
| **REACH registration number** | 01-2119457892-27-xxxx |

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

| | |
|---|---|
| **Recommended use** | pH modifier |
| **Uses advised against** | Consumer use |

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

**Supplier identification**
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards identification

### 2.1 Classification of the substance or mixture

**Regulation (EC) No. 1272/2008**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1A |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 |

### 2.2 Label Elements

**Signal word**
DANGER

**Hazard statements**
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals

**Precautionary Statements - EU (§28, 1272/2008)**
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
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
P501 - Dispose of contents/container in accordance with local regulations.

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P334 - Immerse in cool water/wrap in wet bandages
P363 - Wash contaminated clothing before re-use
P390 - Absorb spillage to prevent material damage
P234 - Keep only in original container
P406 - Store in corrosive resistant/ . container with a resistant inner liner

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**Contains**
Sodium hydroxide

### 2.3 Other data

Not classified as PBT/vPvB by current EU criteria

## 3. Composition/information on ingredients

### 3.1 Substances

| Component | EC-No. | CAS-No | Weight % - range | Classification (67/548) | Classification (Reg. 1272/2008) | REACH registration number |
|---|---|---|---|---|---|---|
| Sodium hydroxide | 215-185-5 | 1310-73-2 | 60-100 | C;R35 | Met. Corr. 1 (H290)<br>Skin Corr. 1A (H314)<br>Eye Dam. 1(H318) | 01-2119457892-27-xxxx |

### 3.2 Mixtures

Not Applicable

## 4. First aid measures

### 4.1 First Aid

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye contact** Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get immediate medical attention.

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

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Main symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

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

**Notes to physician** Treat symptomatically.

## 5. Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which shall not be used for safety reasons**
Do not use water jet.

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

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Thermal decomposition can lead to release of toxic and corrosive gases/vapours.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental release measures

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

Do not get on skin or clothing. Wash thoroughly after handling. Avoid dust formation. Do not breathe dust. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and materials for containment and cleaning up

**Methods for Containment**
Prevent further leakage or spillage if safe to do so. Prevent dust cloud.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Flush area with flooding quantities of water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe dust. Reacts violently with water.

**Hygiene measures**
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container Avoid contact with: Metals Acids Protect from moisture Reacts violently with water

**Storage class** Corrosive storage.

**Packaging material** Use specially constructed containers only

### 7.3 Specific end uses

See also Section 1.2.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| Component | EU OEL - Third List | Austria | Australia | Denmark |
|---|---|---|---|---|
| Sodium hydroxide | Not determined | 4 mg/m³ STEL inhalable fraction, 8x5 min<br>2 mg/m³ TWA inhalable fraction | 2 mg/m³ Peak | 2 mg/m³ Ceiling |

| Component | Malaysia | France | Germany | Hungary |
|---|---|---|---|---|
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ | Not determined | 2 mg/m³ STEL<br>2 mg/m³ TWA |

| Component | New Zealand | Italy | Netherlands | Norway |
|---|---|---|---|---|
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ Ceiling | Not determined | 2 mg/m³ Ceiling |

| Component | Poland | Portugal | Romania | Russia |
|---|---|---|---|---|
| Sodium hydroxide | 1 mg/m³ STEL<br>0.5 mg/m³ TWA | 2 mg/m³ Ceiling | Not determined | Not determined |

| Component | Spain | Switzerland | Turkey | UK |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sodium hydroxide | 2 mg/m³ VLA-EC | 2 mg/m³ STEL inhalable 15 min<br>2 mg/m³ MAK inhalable | Not determined | 2 mg/m³ STEL |

**Derived No Effect Level (DNEL)**

**Long term exposure local effects**

**Sodium hydroxide**

| | |
|---|---|
| Inhalation | 1 mg/m³ |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering measures to reduce exposure**

Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

### Personal protective equipment

| | |
|---|---|
| **Eye protection** | It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles. Face-shield. |
| **Hand protection** | Impervious gloves made of:, Butyl, PVC, Neoprene, Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment, Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust), Half mask with a particle filter P2 (BS EN 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place. |

**Hygiene measures** Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

## 9. Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Pellets |
| **Odour** | Odourless |
| **Colour** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 14.0 | @ 5% |
| **Melting/freezing point** | 318 °C / 604.4 °F | |
| **Boiling point/range** | 1390 °C / 2534 °F | |
| **Flash Point** | No information available | |
| **Evaporation rate** | No information available | |
| **Flammability (solid, gas)** | Not Applicable | |
| **Flammability Limits in Air** | | |
| **Upper flammability Limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 3.5 hPa | @ 800 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 1.1-1.25 g/cm3 | |
| **Relative density** | 2.13 g/cm3 | @ 25 °C. |
| **Water solubility** | completely soluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Viscosity, dynamic** | No information available | |
| **Log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not Applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | 49.99 g/mol |
| **VOC content(%)** | None |
| **Density VALUE** | No information available |

## 10. Stability and reactivity

**10.1 Reactivity**

Corrosive. Corrosive to Metals. Reacts violently with water.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Not known.

**10.4 Conditions to avoid**

Protect from moisture. do not add water directly to the product. It may cause a violent reaction. Avoid dust formation.

**10.5 Incompatible materials**

Metals. Acids.

**10.6 Hazardous decomposition products**

See also section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** Causes severe skin burns and eye damage.

**Inhalation** May cause irritation of respiratory tract. Inhaled corrosive substances can lead to a toxic oedema of the lungs.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes severe skin burns.

**Ingestion** Causes burns. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

**Unknown acute toxicity** Not Applicable.

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium hydroxide | No data available | 1350 mg/kg ( Rabbit ) | No data available |

**Sensitisation** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

| | |
|---|---|
| **Routes of exposure** | Skin contact. Inhalation. Eye contact. |
| **Routes of entry** | Inhalation. Eye contact. |
| **Specific target organ toxicity (single exposure)** | Not classified |
| **Specific target organ toxicity (repeated exposure)** | Not classified. |
| **Aspiration hazard** | No hazard from product as supplied. |

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

| Component | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium hydroxide | 45.4 mg/L LC50 (Oncorhynchus mykiss) = 96 h | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

### 12.4 Mobility in soil

**Mobility**
Soluble in water.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal. |
| **EWC waste disposal No.** | According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 02 04 |

## 14. Transport information

### 14.1 UN number

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN1823 |
| **UN No. (IMDG)** | UN1823 |
| **UN No. (ICAO)** | UN1823 |

### 14.2 Proper shipping name

SODIUM HYDROXIDE, SOLID,

### 14.3. Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG Hazard class** | 8 |
| **ICAO Hazard class/division** | 8 |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing Group** | II |
| **IMDG Packing group** | II |
| **ICAO Packing group** | II |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard ID** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency action code** | 2W |
| **Tunnel restriction code** | (E) |

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Please contact MISDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

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

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium hydroxide
Schedule 6
Schedule 5

**Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). 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), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.**

**This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**

**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**
**International inventories**

| | |
|---|---|
| **USA, Toxic Substances Control Act inventory (TSCA)** | Complies |
| **European Union - EINECS and ELINCS** | Complies |
| **Canada, Domestic Substance List (DSL)** | Complies |

| | |
|---|---|
| **Philippines (PICCS)** | Complies |
| **Inventory - Japan - Existing and New Chemicals list** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korea (KECL)** | Complies |
| **Inventory - New Zealand - Inventory of Chemicals (NZIoC)** | Complies |

Contact REACH@miswaco.slb.com for REACH information.

**15.2 Chemical Safety Report**

No information available

## 16. Other information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Catherine Mansell |
| **Supercedes date** | 17/Jul/2013 |
| **Revision date** | 02/Jun/2015 |
| **Version** | 7 |
| **The following sections have been revised:** | This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made. |

**Text of R phrases mentioned in Section 3**
R35 - Causes severe burns

**Full text of H-Statements referred to under sections 2 and 3**

H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals
H318 - Causes serious eye damage

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**