

Health & Safety data sheet

According to EC Directive 91/155/EC and following amendments

Date of issue: 13 December 2004.

1- Identification of the product and of the company**Product name:**

- DPD2 Chlorine Reagent 2.

Application:

- Determination of total chlorine in water samples

Distributor identification: Milwaukee s.r.l.
c.so Leonardo da Vinci 48/50
21013 Gallarate (VA), Italy
tel.: +39 0331 268009

Emergency Telephone n. °: +39-02-66101029
CENTRO ANTIVELENI
OSPEDALE NIGUARDA (MI) - ITALY

2 - Composition/information on ingredients*Hazardous Ingredients:*

| <i>NAME (EC directives)</i> | <i>EC-Index-No.</i> | <i>CAS No.</i> | <i>LABELLING (EC directives)</i> | <i>CONTENT</i> |
|---------------------------------|---------------------|----------------|--------------------------------------|----------------|
| Sodium Hydroxide | 011-002-00-6 | 1310-73-2 | C R 35 | ≥ 5% - < 10% |

(full text of R-phrases in section 16).

3 - Hazard identification

Causes severe burns.

4 - First aid measures

Remove contaminated, soaked clothing immediately and dispose of safely.

- **After inhalation** : fresh air. Summon doctor.
- **After skin contact** : wash off with plenty of water. Immediately remove contaminated clothing.
- **After eye contact** : rinse out immediately with plenty of water and seek medical advice.
- **After swallowing** : drink plenty of water (if necessary several liters), avoid vomiting (risk of perforation!). Immediately seek medical advice. Do not attempt to neutralize.

5 - Fire-fighting measures

- **Suitable extinguishing media**

- In adaptation to materials stored in the immediate neighborhood.

- **Special risks:**

- Non-combustible. Ambient fire may liberate hazardous vapors.

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- **Special protective equipment for fire fighting:**
 - Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.
- **Additional information:**
 - Contain escaping vapors with water.

6 - Accidental release measures

- **Personal precautions:**
 - Do not inhale vapors. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.
- **Environmental precautions:**
 - Do not discharge into the drains/surface waters/groundwaters.
- **Additional notes:**
 - Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation.
 - Render harmless: neutralize with diluted sulfuric acid.

7 - Handling and storage

- **Handling:**
 - Accessible only for authorized persons.
- **Storage:**
 - Tightly closed. Store at room temperature (+15 to +25 °C recommended). Protect from light and moisture.

8 - Exposure control/personal protection

- **Ingredients with occupational exposure limits to be monitored:**
 - SODIUM HYDROXIDE
MAK not established
- **Engineering controls**
 - Safety shower and eye bath.
- **Personal protective equipment:**
 - Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.
- **Personal protective equipment:**
 - As appropriate to quantity handled.
- **Respiratory protection:**
 - Required when vapors/aerosols are generated.
Work under hood.
- **Protective gloves:**
 - Rubber or plastic
- **Eye protection:**
 - Goggles or face mask

9 - Physical/chemical properties

- | | | | |
|------------------------------|--------------------|-------------------------------|--------------------------|
| • Appearance | : colorless liquid | • pH value at 20°C | : > 14 |
| • Odor | : odorless | • Density at 20°C | : 1.15 g/cm ³ |
| • Solubility in water | : soluble | • Ignition temperature | : NA |
| • Melting point | : ND | • Flash point | : NA |
| • Boiling point | : ND | | |

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10 - Stability and reactivity

- **Conditions to be avoided:**
 - Strong heating.
- **Hazardous decomposition products:**
 - In the event of fire: see section 5.
- **Substances to be avoided:**
 - Ammonium compounds (could be formed: ammonia); acids; metals; light metals.
- **Hazardous polymerization:**
 - Will not occur.

11 - Toxicological information

Quantitative data on the toxicity of this product are not available.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Sodium hydroxide – as the pure substance

Acute toxicity

Quantitative data on the toxicity of this product are not available.

Specific symptoms in animal studies:

Eye irritation test (rabbit): burns.

Skin irritation test (rabbit): burns.

Subacute to chronic toxicity

Mutagenicity (mammal cell test): micronucleus negative.

Bacterial mutagenicity: Escherichia coli: negative.

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

Property of this product must be anticipated on the basis from the components of the preparation:

- **In case of inhalation** : mucosal irritations, coughing, dyspnoea.
- **In case of skin contact** : burns, necrosis.
- **In case of eye contact** : burns, necrosis. Risk of blindness!
- **In case of ingestion** : burns of mouth, mucous membrane, esophagus. Risk of perforation in the esophagus and stomach.
- **Further data** : further hazardous properties cannot be excluded. The product should be handled with the care usual when dealing with chemicals.

12 - Ecological information

Quantitative data on the ecotoxicity of this product are not available.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Sodium hydroxide – as the pure substance

Biologic degradation:

Methods for the determination of biodegradability are not applicable to inorganic substances.

Behavior in environmental compartments:

Concentration in organisms is not to be expected.

Ecotoxic effects:

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Biological effects:

Harmful effect on aquatic organisms. Toxic effect on fish and plankton. Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Does not cause biological oxygen deficit.

Neutralization possible in waste water treatment plants.

Fish toxicity:

Onchorhynchus mykiss LC₅₀ : 45.4 mg/l /96 h (in hard water).

L.macrochirus LC₅₀ : 99 mg/l /48h.

Daphnia toxicity:

Daphnia magna EC₅₀ : 76 mg/l /24 h.

- **Further ecological data:**

DO NOT ALLOW TO ENTER WATERS, WASTE WATERS, OR SOIL!

13 - Disposal considerations

- **Waste disposal:**

- Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice.
- Handle contaminated packaging in the same way as the substance itself.

14 - Transport information

- **Land transport**

| | |
|---------|----------------|
| ADR/RID | : 9, PGII |
| UN-N | : 3316 |
| Name | : CHEMICAL KIT |
- **Sea transport**

| | |
|------|------------------|
| IMDG | : 9/UN 3316/PGII |
| Name | : CHEMICAL KIT |
- **Air transport**

| | |
|-----------|------------------|
| ICAO/IATA | : 9/UN 3316/PGII |
| Name | : CHEMICAL KIT |

These transport data apply to the COMPLETE KIT!

15 - Regulatory information**Labeling according to EC Directives:**

| | | |
|------------|-------------|---|
| Symbol: | C | Corrosive |
| R-phrases: | 35 | Causes severe burns. |
| S-phrases: | 26-37/39-45 | 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 label where possible). |

Contains: Sodium Hydroxide.

16 - Other information

- **Text of any R phrases referred to under heading 2:**
35 : Causes severe burns.

- **Supersedes edition of** : / (1st edition)

- **Legend** : NA Not Applicable
ND Not Determined

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.