

Health & Safety data sheet

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

Date of issue: 03 December 2004.

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

- DPD1 Chlorine Reagent 1.

Application:

- Determination of 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:

NAME (EC directives)	EC-Index-No.	CAS No.	LABELLING (EC directives)	CONTENT
Sulphuric acid	016-020-00-8	7664-93-9	C R 35	≥ 5% - < 15%
N,N-Diethyl-1,4-phenylenediammonium sulfate	NA	6283-63-2	Xn, R 21/22	≥ 1% - < 3%

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

3 - Hazard identification

Irritating to eyes and skin.

4 - First aid measures

Remove contaminated, soaked clothing immediately and dispose of safely.

- **After inhalation** : fresh air.
- **After skin contact** : wash off with plenty of water. 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). Seek medical advice.

5 - Fire-fighting measures• **Suitable extinguishing media:**

- In adaptation to materials stored in the immediate neighborhood.

• **Special risks:**

- Development of hazardous combustion gases or vapors possible in the event of fire.
- Hydrogen may form upon contact with metals (danger of explosion!).
- The following may develop in event of fire: sulfur oxides.

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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:**
 - Product itself is non-combustible. Cool container with spray water from a safe distance. Contain escaping vapors with water.
 - Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

6 - Accidental release measures

- **Personal precautions:**
 - Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation.
- **Environmental precautions:**
 - Do not discharge into the drains/surface waters/groundwaters.
- **Additional notes:**
 - Render harmless: neutralize with diluted sodium hydroxide solution or by throwing on lime, lime sand, or sodium carbonate.

7 - Handling and storage

- **Handling:**
 - Avoid generation of vapors/aerosols.
 - Do not inhale substance.
- **Storage:**
 - Tightly closed. In a well-ventilated place at +15 to +25 °C, protected from light.
 - Accessible only for authorized persons.

8 - Exposure control/personal protection

- **Engineering controls**
 - Safety shower and eye bath.
- **Ingredients with occupational exposure limits to be monitored:**

<ul style="list-style-type: none"> - SULPHURIC ACID EXPOSURE LIMITS - GERMANY Source Type Value TRGS 900 OEL 1 mg/m³ Remarks: =1= 	<ul style="list-style-type: none"> - SULPHURIC ACID EXPOSURE LIMITS - DENMARK Source Type Value OEL TWA 1 mg/m³
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- **Personal protective equipment:**
 - Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.
- **Respiratory protection:**
 - Required when vapors/aerosols are generated.
- **Protective gloves:**
 - Rubber or plastic
- **Eye protection:**
 - Goggles or face mask

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9 - Physical/chemical properties

- **Appearance and odor** : colorless liquid, odorless
- **Solubility in water** : Soluble
- **Melting point** : ND
- **Boiling point** : ND
- **pH value at 20°C** : strongly acidic
- **Density at 20°C** : 1.07 g/cm³
- **Ignition temperature** : NA
- **Flash point** : NA
- **Thermal decomposition** : ND

10 - Stability and reactivity

- **Conditions to be avoided:**
 - Strong heating.
- **Hazardous decomposition products:**
 - In the event of fire: see section 5.
- **Hazardous polymerization:**
 - Will not occur.
- **Substances to be avoided:**
 - Alkali metals, alkali compounds, ammonia, alkaline earth compounds, alkalis, acids, alkaline earth metals, metals, metal alloys, permanganates, combustible substances, organic solvents, halogenates.

11 - Toxicological information

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

- The following applies to Sulphuric acid, as the pure substance:

Acute toxicity

LC₅₀ Inhalation, Rat: 510 mg/kg/2h.

LD₅₀ Oral, Rat: 2140 mg/kg

Specific symptoms in animal studies:

Eye irritation test (rabbit): burns.

Skin irritation test (rabbit): burns.

Toxicological values are not available due to other dangerous properties of the substance.

Subacute to chronic toxicity

Applicable to partial component(s):

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

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

- **In case of inhalation** : After inhalation of aerosols: damage to the affected mucous membranes.
- **In case of skin contact** : Irritations.
- **In case of eye contact** : Possibility of corneal lesions.
- **In case of ingestion** : Damage to the affected mucous membranes possible.

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- **Further data** : The product should be handled with the care usual when dealing with chemicals.

12 - Ecological information

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

- The following applies to Sulphuric acid, 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:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

The following applies to sulfuric acid: biological effects: harmful effect on aquatic organisms. Harmful effect due to pH shift. Toxic effect on fish and algae. Caustic even in diluted form. Does not cause biological oxygen deficit. Endangers drinking water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants.

Daphnia toxicity: Daphnia magna EC 50 : 29 mg/l/24 h (calculated on the pure substance).

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, II
UN-No. : 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:	Xi	Irritant.
R-phrases :	36/38	Irritating to eyes and skin.
S-phrases :	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Contains:	-	

16 - Other information

• **Text of any R phrases referred to under heading 2:**

21/22 : Harmful in contact with skin and if swallowed.

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.