

**Safety Data Sheet**According to Regulation (EC) No. 1907/2006  
OSHA Regulation 29 CFR 1910.1200  
Canadian Regulation SOR/88-66**Revision Date:** 2009-06-10**Reason for Revision:** 29 CFR 1910.1200 and SOR/88-66 Compliance**SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY****Product Name:** Chlorine Reagent 1**Application:** Determination of Chlorine in Water Samples**Company Information (USA):**Hanna Instruments, Inc.  
584 Park East Dr, Woonsocket, Rhode Island, USA 02895**Technical Service Contact Information:**1-800-426-6287 (8:30AM - 5:00PM ET)  
+1-401-766-4260 (8:30AM - 5:00PM ET)**USA Emergency Contact Information:**

1-800-424-9300 (Chemtrec 24Hr. Emergency)

**International Emergency Contact Information:**

+1-703-527-3887 (Chemtrec 24Hr. Emergency)

**E-mail Address:**

tech@hannainst.com

**SECTION 2: HAZARD IDENTIFICATION**

Causes severe burns.

**SECTION 3: COMPOSITION AND COMPONENT INFORMATION****Component:** Sodium Hydroxide**EC-No.:** 215-185-5**CAS-No.:** 1310-73-2**Hazard:** C**Phrases:** R: 35**Content:** > 5% - < 10%**SECTION 4: FIRST AID MEASURES****After Inhalation:** Remove to fresh air. Give artificial respiration if victim is not breathing. Give oxygen if breathing is difficult.**After Skin Contact:** Flush affected area with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician**After Eye Contact:** Flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.**After Swallowing:** Wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting. Do not attempt to neutralize.**General Information:** Remove contaminated, soaked clothing immediately and dispose of safely.**SECTION 5: FIRE-FIGHTING MEASURES****Suitable Extinguishing Media:**

Water spray, Carbon Dioxide, Dry Chemical Powder, Appropriate Foam.

**Special Risks:**

Non-combustible. Ambient fire may liberate hazardous vapors. Hazardous Decomposition Products: Sodium/Sodium Oxides

**Special Protective Equipment:**

Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

**Additional Information:**

Contain escaping vapors with water.

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## **SECTION 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/groundwater.

### **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.

## **SECTION 7: HANDLING AND STORAGE**

### **Handling:**

Cannot be stored indefinitely. Accessible only for authorized persons.

### **Storage:**

Tightly closed. Store at room temperature (+15 to +25 °C recommended). Protect from light and moisture.

## **SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION**

Type	Value	Source	Type	Value	Source
<b>Sodium Hydroxide</b>					
Ceiling	2 mg/m <sup>3</sup>	Belgium	Ceiling	2 mg/m <sup>3</sup>	Canada (Ontario)
Ceiling	2 mg/m <sup>3</sup>	Canada (Quebec)	TWA (8hr)	2 mg/m <sup>3</sup>	France
TWA (8hr)	2 mg/m <sup>3</sup>	Greece	TWA (8hr)	2 mg/m <sup>3</sup>	Hungary
TWA (8hr)	0.5 mg/m <sup>3</sup>	Poland	Ceiling	2 mg/m <sup>3</sup>	Portugal
TWA (8hr)	1 mg/m <sup>3</sup>	Romania	Ceiling	2 mg/m <sup>3</sup>	Spain
TWA (15min)	2 mg/m <sup>3</sup>	UK	Ceiling	2 mg/m <sup>3</sup>	USA (ACGIH)
TWA (8hr)	2 mg/m <sup>3</sup>	USA (OSHA)			

### **Engineering:**

Maintain general industrial hygiene practice.

### **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

### **Industrial Hygiene:**

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

## **SECTION 9: PHYSICAL/CHEMICAL PROPERTIES**

<b>Appearance:</b>	Colorless liquid	<b>Odor:</b>	Odorless	<b>Density at 20° C:</b>	1.15 g/cm <sup>3</sup>
<b>Melting Point:</b>	ND	<b>Boiling Point:</b>	ND	<b>Solubility:</b>	Soluble
<b>pH at 20° C:</b>	> 14	<b>Explosion Limit:</b>	NA	<b>Flash Point:</b>	NA
<b>Thermal Decomp.:</b>	NA				

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Strong Heating

**Hazardous Polymerization:**

Will not occur.

**Further Information:**

Not available

**Hazardous Decomposition Products:**

In the event of fire: See section 5.

**Substances to be Avoided:**

Strong oxidizing agents, strong acids, organic materials

**SECTION 11: TOXICOLOGICAL INFORMATION****Product Toxicity**

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

**Component Toxicity****Acute Toxicity:**

Not Available

**Chronic Toxicity:**

Not Available

**Additional Data:**

APPLICABLE TO MAIN COMPONENT:

The following applies to Sodium Hydroxide, as the pure substance:

Acute toxicity

LD50 (Intraperitoneal, mouse): 40 mg/kg

Irritation data

Skin, Rabbit: 500 mg /24 hr

Remarks: Severe irritation effect

Eyes, Rabbit: 0.5 mg / 24 hr

Remarks: Severe irritation effect

Signs and symptoms of exposure

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Chronic exposure - mutagen

Cytogenetic analysis

Hamster: 10 mmol/L. Cell type: lung

Hamster: 16 mmol/L. Cell type: ovary

**SECTION 12: ECOLOGICAL INFORMATION**

Quantitative data on the toxicity of this product is 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:

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 /48 h;

Fish toxicity: fish LC50: 189 mg/L (1N solution = 40 g/L).

Daphnia toxicity: *Daphnia magna* EC50: 76 mg/L /24 h.**Further Data:** Do not allow to enter waters, waste waters, or soil!

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## **SECTION 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.

## **SECTION 14: TRANSPORTATION INFORMATION**

**Land:**

ADR/RID: 9, II  
UN-No.: 3316  
Name : CHEMICAL KIT

**Sea:**

IMDG: 9/UN 3316/PG II  
Name : CHEMICAL KIT  
Marine pollutant: no  
Severe marine pollutant: no

**Air:**

ICAO/IATA: 9/UN 3316/PG II  
Name: CHEMICAL KIT

Transport data applies to the COMPLETE KIT!

## **SECTION 15: REGULATORY INFORMATION**

**Labeling according to EC Directives:**

**Symbol:** C: Corrosive

**R-phrases:** 35: Causes severe burns.

**S-phrases:** 26-36/37/39-45: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, 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

## **SECTION 16: OTHER INFORMATION**

**Text of R-phrases under Section 3**

35: Causes severe burns.

**Revision Information**

**Revision Date:** 2009-06-10

**Supersedes edition of:** 2008-12-01

**Reason for revision:** 29 CFR 1910.1200 and SOR/88-66  
Compliance

**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.**