

**Revision Date:** 2013-08-21  
**Reason for Revision:** Regulation (EC) No. 1272/2008 Compliance

**SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY**

**Product Name:** HI 70461 Total Chlorine Buffer Solution      **Additional Product Codes:** HI 70461H  
**Application:** Determination of Total 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 skin irritation. Causes serious eye irritation.

**According to Regulation (EC) No. 1272/2008:**

**Classification:** Eye Irritation (Category 2)  
Skin Irritation (Category 2)

**Signal Word:** **Warning**

**Hazard** H315: Causes skin irritation.

**Statements:** H319: Causes serious eye irritation.

**Precaution** P302+P352: IF ON SKIN: Wash with plenty of soap and water.

**Statements:** P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**According to Directives 67/548/EEC and 1999/45/EC:**

**Symbol:** Xi: Irritant

**R-phrases:** 36/38: Irritating to eyes and skin.

**S-phrases:** 26-37/39-45: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

**SECTION 3: COMPOSITION AND COMPONENT INFORMATION**

<b>Component:</b>	<b>EC No:</b>	<b>CAS No:</b>	<b>Hazard Class:</b>	<b>Phrases:</b>	<b>Concentration:</b>
Sodium hydroxide	215-185-5	1310-73-2	Skin Corr. 1A C	H314 R: 35	> 0.5% - < 2.0%

**SECTION 4: FIRST AID MEASURES**

**After Inhalation:** Remove to fresh air. Summon doctor.  
**After Skin Contact:** Wash affected area 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.  
**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.

***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.

**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:***

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**

<b>Type</b>	<b>Value</b>	<b>Source</b>	<b>Type</b>	<b>Value</b>	<b>Source</b>
<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:***

Safety shower and eye wash.

***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.

***Respiratory Protection:***

Required when vapors/aerosols are generated. Work under hood.

***Protective Gloves:***

Rubber or plastic

***Eye Protection:***

Goggles or face mask

***Industrial Hygiene:***

Change contaminated clothing. Wash hands after working with substance.

**SECTION 9: PHYSICAL/CHEMICAL PROPERTIES**

<b>Appearance:</b>	Colorless liquid	<b>Odor:</b>	Odorless	<b>Density at 20°C:</b>	1.19 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>	5.5	<b>Explosion Limit:</b>	NA	<b>Flash Point:</b>	NA
<b>Thermal Decomp.:</b>	NA				

**SECTION 10: STABILITY AND REACTIVITY****Conditions to be Avoided:**

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:**

Ammonium compounds (could be formed: ammonia); Acids, metals, light metals

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

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

**Potential Health Effects:****Inhalation:** Mucosal irritations, coughing, dyspnoea.**Skin Contact:** Irritations.**Eye Contact:** Irritations.**Ingestion:** Irritations of mouth, mucous membrane, esophagus.**Further Data:** Further hazardous properties cannot be excluded. The product should be handled with the usual care when dealing with chemicals.**Component Toxicity****Acute Toxicity:**

Not Available

**Chronic Toxicity:**

Not Available

**Additional Data:**

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.

**SECTION 12: ECOLOGICAL INFORMATION**

Quantitative data on the ecotoxicity 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 /48h.  
 Daphnia toxicity: *Daphnia magna* EC50 : 76 mg/L /24 h.  
**Further Data:** Do not allow to enter waters, waste waters, or soil!

**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**

<b>Land:</b> Not subject to transport regulations	<b>Sea:</b> Not subject to transport regulations	<b>Air:</b> Not subject to transport regulations
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**SECTION 15: REGULATORY INFORMATION**

Complies with European Regulations (EC) No. 1907/2006 and No. 1272/2008.  
 Complies with European Council Directives 67/548/EEC and 1999/45/EC.  
 Complies with OSHA Regulation 29 CFR 1910.1200.  
 Complies with Canadian Regulation SOR/88-66

**SECTION 16: OTHER INFORMATION**

**Text of phrases under Section 3**

R35: Causes severe burns.  
 H314: Causes severe skin burns and eye damage.

**Revision Information**

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**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.**