

Revision Date: 2013-07-16
Reason for Revision: Regulation (EC) No. 1272/2008 Compliance

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: HI 93738A-0 Chlorine Dioxide Reagent A

Application: Determination of Chlorine Dioxide 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

Non-hazardous product as specified in Directives 67/548/EEC and 1999/45/EC.
 Non-hazardous product as specified in OSHA Regulation 29 CFR 1910.1200.
 Non-hazardous product as specified in Canadian Regulation SOR/88-66.
 Non-hazardous product as specified in Regulation (EC) 1272/2008.

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

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 the label where possible).

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component:	EC No:	CAS No:	Hazard Class:	Phrases:	Concentration:
Sodium hydroxide	215-185-5	1310-73-2	Skin Corr. 1A C	H314 R: 35	> 5% - < 15%
Citric acid	201-069-1	77-92-9	Skin Irrit. 2 Eye Dam. 1 Xi	H315, H318 R: 38-41	> 20% - < 30%

SECTION 4: FIRST AID MEASURES

After Inhalation: Remove to fresh air. Call in physician.
After Skin Contact: Wash affected area with plenty of water.
After Eye Contact: Rinse out with plenty of water for at least 15 minutes. If pain persists, summon medical advice.
After Swallowing: Consult a doctor if feeling unwell.
General Information: Not available

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Foam, Dry Powder, Carbon Dioxide

Special Risks:

Non-combustible. Development of hazardous combustion gases possible in the event of fire.

Special Protective Equipment:

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

Additional Information:

NA

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

None

Environmental Precautions:

None

Additional Notes:

None

SECTION 7: HANDLING AND STORAGE

Handling:

No further requirements.

Storage:

Tightly closed. In a well ventilated place. Store at room temperature (+15 to +25 °C recommended).

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

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

Engineering:

Maintain general industrial hygiene practice.

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. 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

Appearance:	Colorless liquid	Odor:	Odorless	Density at 20°C:	1.4 g/cm³
Melting Point:	ND	Boiling Point:	ND	Solubility:	Soluble
pH at 20°C:	4.7- 5.0	Explosion Limit:	NA	Flash Point:	NA
Thermal Decomp.:	NA				

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating

Hazardous Polymerization:

Will not occur.

Further Information:

Not available

Hazardous Decomposition Products:

No information available.

Substances to be Avoided:

Metals, oxidizing agents, reducing agents

SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

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

Potential Health Effects:

Inhalation: Slight mucosal irritations.

Skin Contact: Slight irritations.

Eye Contact: Slight irritations.

Ingestion: Irritations of mucus membrane in the mouth, pharynx esophagus and gastrointestinal tract.

Further Data: 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 MAIN COMPONENT:

The following applies to Citric acid monohydrate – as the pure substance

Acute toxicity

LD 50 (oral, rat): 3000 mg/kg (anhydrous substance).

Subacute to chronic toxicity

Bacterial mutagenicity: Ames test: negative.

No teratogenic effects in animal experiments.

No impairment of reproductive performance in animal experiments

APPLICABLE TO MAIN 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 ecological effect of this product is not available.

APPLICABLE TO MAIN COMPONENT:

The following applies to Citric acid monohydrate – as the pure substance

Biologic degradation:

Biodegradation: >98 % /2 d Zahn-Wellens test;

Easily eliminable.

Behavior in environmental compartments:

Distribution: log p(o/w): -1.72 (20 °C) (anhydrous substance);

No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Biological effects:

Harmful effect due to pH shift.

Fish toxicity: *L.idus* LC 50 : 440–760 mg/L /96 h (anhydrous substance).

Daphnia toxicity: *Daphnia magna* EC 50 : ~120 mg/L /72 h (anhydrous substance).

Maximum permissible toxic concentration:

Protozoa: *E.sulcatum* EC 5 : 485 mg/L /72 h (anhydrous substance).

Bacterial toxicity: *Ps.putida* EC 5 : >10000 mg/L /16 h (anhydrous substance); *M.aeruginosa* EC 5 : 80 mg/L /8 d (anhydrous substance). Algeal

toxicity: *Sc.quadricauda* IC 5 : 640 mg/L /7 d (anhydrous substance).

Further ecologic data:

Degradability:

BOD 5 : 0.481 g/g; TOD: 0.686 g/g; COD: 0.685 g/g.

APPLICABLE TO MAIN 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* LC 50 : 45.4 mg/L /96 h (in hard water). *L.macrochirus* LC 50 : 99 mg/L /48h.

Daphnia toxicity: *Daphnia magna* EC 50 : 76 mg/L /24 h.

Further Data: No ecological problems are to be expected when the product is handled and used with due care and attention.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Can be safely disposed of as an ordinary refuse.

SECTION 14: TRANSPORTATION INFORMATION**Land:**

Not subject to transport regulations

Sea:

Not subject to transport regulations

Air:

Not subject to transport regulations

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.
R38: Irritating to skin.
R41: Risk of serious damage to eyes.
H315: Causes skin irritation.
H318: Causes serious eye damage.

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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.**