HI 70430B
Free Chlorine Buffer Reagent

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: HI 70430B-0 Free Chlorine Buffer Reagent

Application: Determination of Free Chlorine in Process Applications

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. Irritating to eyes, respiratory system and skin.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component:	Maleic Acid	Lithium Hydroxide
EC-No.:	203-742-5	215-183-4
CAS-No.:	110-16-7	1310-65-2
Hazard:	Xn	C, Xn
Phrases:	R: 22-36/37/38	R: 22-35
Content:	> 20% - < 25%	> 10% - < 25%

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 with plenty of water for at least 10 minutes with the eyelid held wide open. Immediately call in ophthalmologist.

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: Not available

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

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. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory Protection:	***Protective Gloves:***	***Eye Protection:***
Required when vapors/aerosols are generated. Work under hood.	Rubber or plastic	Goggles or face mask

Industrial Hygiene:

Immediately change contaminated clothing. Apply skin-protectve barrier cream. Wash hands and face after working with substance.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Colorless liquid	***Odor:***	Odorless	***Density at 20° C:***	1.18 g/cm³
Melting Point:	ND	***Boiling Point:***	ND	***Solubility:***	Soluble
pH at 20° C:	6.2	***Explosion Limit:***	NA	***Flash Point:***	NA
Thermal Decomp.:	NA				

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating

Hazardous Decomposition Products:

In the event of fire: See section 5.

Hazardous Polymerization:

Will not occur.

Substances to be Avoided:

Acids, metals, light metals

Further Information:

Not available

SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

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

Potential Health Effects:

Inhalation:	Inhalation may lead to the formation of oedemas in the respiratory tract.
Skin Contact:	Severe irritations.
Eye Contact:	Severe irritations.
Ingestion:	Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
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 Lithium hydroxide – as the pure substance
Acute toxicity
LD50 (oral, rat): 210 mg/kg.
Further toxicological information
After inhalation of dust: burns of mucous membranes. Inhalation may lead to the formation of oedemas in the respiratory tract.
After skin contact: burns, tissue damage with strong pain.
After eye contact: burns, Risk of blindness! After swallowing: burns in mouth, throat, oesophagus and gastrointestinal tract. Risk of perforation in the oesophagus and stomach.
Other notes:
The following applies to lithium compounds in general: when handled or used inappropriately, the absorption of large quantities is followed by CNS disorders, agitation, spasms, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance

APPLICABLE TO PARTIAL COMPONENT:
The following applies to Maleic acid – as the pure substance:
Acute toxicity
LC50 (inhalation, rat): >720 mg/m^3 /1 h.
LD50 (dermal, rabbit): 1560 mg/kg.
LD50 (oral, rat): 708 mg/kg.
Specific symptoms in animal studies:
Eye irritation test (rabbit): Severe irritations.
Skin irritation test (rabbit): Slight irritations.
Subacute to chronic toxicity
Bacterial mutagenicity: Ames test: negative.
Further toxicological information
After inhalation: Irritations of the mucous membranes, coughing, and dyspnoea.
After skin contact: Irritations.
After eye contact: Severe irritations.
After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

SECTION 12: ECOLOGICAL INFORMATION

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

APPLICABLE TO PARTIAL COMPONENT:
The following applies to Lithium hydroxide – as the pure substance
Biologic degradation:
Methods for the determination of biodegradability are not applicable to inorganic substances.
Ecotoxic effects:
Biological effects: Harmful effect on aquatic organisms. 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.
Further ecologic data:
The following applies to lithium compounds in general: biological effects: fish: toxic from 100 mg/L up; Daphnia toxic from 16 mg/L up; plants: toxic from 0.2 mg/L up (values calculated as Li).

APPLICABLE TO PARTIAL COMPONENT:
The following applies to Maleic acid – as the pure substance:
Biologic degradation:
Biodegradation: 92 % /20 d.
BOD 77 % from TOD /5 d.
Readily biodegradable.
Behavior in environmental compartments:
Distribution: log p(o/w): -0.48 (experimental).
No bioaccumulation is to be expected (log P(o/w <1).
Ecotoxic effects:
Biological effects:
Fish toxicity: P.promelas LC50: 5 mg/L /96 h.
Daphnia toxicity: Daphnia magna EC50: 316.2 mg/L /48 h.
Algeal toxicity: algae IC10: 125 mg/L /4 h.
Bacterial toxicity: Ps.putida EC10: 1190 mg/L /18 h.
Further ecologic data:
COD 96 % from TOD; TOD: 0.83 g/g.

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

Land:

ADR/RID: 8 PGIII
UN-N: 1760
Name: CORROSIVE LIQUID, n.o.s.

Sea:

IMDG: 8/UN 1760/PGIII
Name: CORROSIVE LIQUID, n.o.s.

Air:

ICAO/IATA: 8/UN 1760/PGIII
Name: CORROSIVE LIQUID, n.o.s.

Transport data applies to the COMPLETE KIT!

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: C: Corrosive

R-phrases: 35-36/37/38: Causes severe burns. Irritating to eyes, respiratory system and skin.

S-phrases: 26-36/37/39-45: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immdiately with plenty of water. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Contains: Lithium Hydroxide

SECTION 16: OTHER INFORMATION

Text of R-phrases under Section 3

35: Causes severe burns.
22:Harmful if swallowed.
36/37/38:Irritating to eyes, respiratory system and skin.

Revision Information

Revision Date:	2009-06-10
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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.