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HI 93753A-0  
Displacing 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 93753A-0 Displacing Reagent

**Application:** Determination of Chloride 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**

Harmful by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## **SECTION 3: COMPOSITION AND COMPONENT INFORMATION**

<b>Component:</b>	Ethylene Glycol	Mercury (II) Thiocyanate
<b>EC-No.:</b>	203-473-3	209-773-0
<b>CAS-No.:</b>	107-21-1	592-85-8
<b>Hazard:</b>	Xn	T+, N
<b>Phrases:</b>	R: 22	R: 26/27/28-33-50/53
<b>Content:</b>	> 95%	> 0.25 - < 0.5%

## **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:** Wash affected area with plenty of water. Immediately remove contaminated clothing.
- After Eye Contact:** Rinse out immediately with plenty of water for at least 15 minutes. If discomfort persists obtain medical attention.
- After Swallowing:** Wash out mouth thoroughly with water provided person is conscious. OBTAIN MEDICAL ATTENTION.
- General Information:** Remove contaminated, soaked clothing immediately and dispose of safely.

## **SECTION 5: FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media:**

Appropriate Foam, Dry Chemical Powder, Carbon Dioxide

**Special Risks:**

Specific Hazard(s): Emits toxic fumes under fire conditions. The following may develop in event of fire: Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides, Sulfur Oxides, Mercury/Mercury Oxides, Mercury Vapors

**Special Protective Equipment:**

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

**Additional Information:**

Do not direct a solid stream of water at burning material as spattering may result.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions:

Absorb on sand or vermiculite and place in closed containers for disposal. When spilled, the floor may be slippery. Wipe up the floor completely. Clean up affected area and dispose according to local regulation. Ventilate area after material pickup is complete.

### Environmental Precautions:

Do not discharge into the drains/surface waters/groundwater.

### Additional Notes:

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages

## SECTION 7: HANDLING AND STORAGE

### Handling:

Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure

### Storage:

Store at room temperature (+15 to +25 °C recommended). Protect from light and moisture. Accessible only for authorized persons.

## SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	Value	Source	Type	Value	Source
<b>Ethylene Glycol</b>					
TWA (8hr)	52 mg/m <sup>3</sup> (aerosol)	Belgium	Ceiling	100 mg/m <sup>3</sup>	Canada (Ontario)
Ceiling	127 mg/m <sup>3</sup>	Canada (Quebec)	TWA (8hr)	52 mg/m <sup>3</sup> (vapor)	France
TWA (8hr)	26 mg/m <sup>3</sup>	Germany	TWA (8hr)	125 mg/m <sup>3</sup> (fume)	Greece
TWA (8hr)	52 mg/m <sup>3</sup>	Hungary	TWA (8hr)	52 mg/m <sup>3</sup>	Italy
TWA (8hr)	10 mg/m <sup>3</sup> (aerosol)	Netherlands	TWA (8hr)	15 mg/m <sup>3</sup>	Poland
Ceiling	100 mg/m <sup>3</sup>	Portugal	TWA (8hr)	52 mg/m <sup>3</sup>	Romania
TWA (8hr)	52 mg/m <sup>3</sup>	Spain	TWA (8hr)	52 mg/m <sup>3</sup> (vapor)	UK
<b>Mercury(II) Dithiocyanate</b>					
TWA (8hr)	0.025 mg (Hg)/m <sup>3</sup>	Belgium	TWA (8hr)	0.025 mg (Hg)/m <sup>3</sup>	Canada (Ontario)
TWA (8hr)	0.025 mg (Hg)/m <sup>3</sup>	Canada (Quebec)	TWA (8hr)	0.1 mg (Hg)/m <sup>3</sup>	France
TWA (8hr)	0.1 mg (Hg)/m <sup>3</sup>	Germany	TWA (8hr)	0.1 mg (Hg)/m <sup>3</sup>	Greece
TWA (8hr)	0.08 mg (Hg)/m <sup>3</sup>	Hungary	TWA (8hr)	0.05 mg (Hg)/m <sup>3</sup>	Poland
TWA (8hr)	0.025 mg (Hg)/m <sup>3</sup>	Portugal	TWA (8hr)	0.025 mg (Hg)/m <sup>3</sup>	Spain
TWA (8hr)	0.01 mg (Hg)/m <sup>3</sup>	UK	TWA (8hr)	0.025 mg (Hg)/m <sup>3</sup>	USA (ACGIH)
TWA (8hr)	2 mg (Hg)/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 thoroughly after handling.

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<b>Appearance:</b>	Colorless liquid	<b>Odor:</b>	Almost odorless	<b>Density at 20° C:</b>	1.11 g/cm <sup>3</sup>
<b>Melting Point:</b>	- 13 °C	<b>Boiling Point:</b>	> 190 °C	<b>Solubility:</b>	Soluble
<b>pH at 20° C:</b>	NA	<b>Explosion Limit:</b>	Lower 3% Upper 15%	<b>Flash Point:</b>	~ 115°C
<b>Thermal Decomp.:</b>	NA				

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

Heat. Protect from moisture.

**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 acids, strong oxidizing agents, strong bases, aldehydes, aluminum

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## **SECTION 11: TOXICOLOGICAL INFORMATION**

### **Product Toxicity**

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

#### **Potential Health Effects:**

- Inhalation:** May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract
- Skin Contact:** Irritant effects, danger of skin absorption. may be harmful if absorbed through the skin.
- Eye Contact:** Irritant effects.
- Ingestion:** Harmful if swallowed.
- Further Data:** The following applies to Ethylene Glycol: CHRONIC EXPOSURE: TERATOGEN Result: laboratory experiments have shown teratogenic effects. REPRODUCTIVE HAZARD Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

### **Component Toxicity**

#### **Acute Toxicity:**

#### **Chronic Toxicity:**

Not Available

#### **Ethylene Glycol**

**LD50:** Oral - Rat - 4700 mg/kg

**LD50:** Dermal - Rabbit - 10626 mg/kg

#### **Mercury(II) Dithiocyanate**

**LD50:** Oral - Rat - 46 mg/kg

**LD50:** Dermal - Rat - 685 mg/kg

#### **Additional Data:**

##### **APPLICABLE TO MAIN COMPONENT:**

The following applies to Ethylene Glycol:

Signs and symptoms of exposure

When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcaemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage. Exposure to and/or consumption of alcohol may increase toxic effects.

Conditions aggravated by exposure

Ethylene glycol is metabolized to glycoaldehyde, glycolic acid, and glyoxal, followed by conversion to glyoxylic acid, formic acid, and oxalic acid.

It has been shown that ethylene glycol is much less toxic than its metabolites. Glycolic acid is thought to be the major toxic metabolite causing acute as well as reproductive and developmental toxicity observed with ethylene glycol exposures. May cause nervous system disturbances.

##### **APPLICABLE TO MAIN COMPONENT:**

The following applies to Mercury (II) thiocyanate:

Sensitization

Sensitization: May cause allergic reaction.

Signs and symptoms of exposure

Mercury compounds have a cytotoxic and protoplasmotoxic effect. Intoxication symptoms: ACUTE: contact with eyes causes severe lesions.

Swallowing and inhalation of dust damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal edema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; CHRONIC: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

Conditions aggravated by exposure

May cause nervous system disturbances.

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### **SECTION 12: ECOLOGICAL INFORMATION**

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

**APPLICABLE TO MAIN COMPONENT:**

The following applies to Ethylene Glycol:

Bioaccumulation potential

No indication of bioaccumulation.

Ecotoxicological effects

Fish species: Onchorhynchus mykiss (Rainbow trout): LC50 18,500 mg/L / 96 h; Leuciscus idus: LC50 > 10,000 mg/L / 48 h; Daphnia species:

Daphnia magna: EC50 74,000 mg/L / 24 h.

Additional ecological information

BOD5: 0.78 %

COD: 1.29 %

**APPLICABLE TO PARTIAL COMPONENT:**

The following applies to inorganic Hg compounds in general:

Ecotoxicological effects

Fish species: Salmo lethal from 0.05 ppm up; P. promelas LC50: 0.19 mg/L; Hg ions toxic: fish: L. idus LC50: 0.013 mg/L; Algae: Sc.

quadricauda toxic from 0.07 mg/L up; M. aeruginosa toxic from 0.005 mg/L up.

Additional ecological information

Fish toxicity: mercury: LC50: 0.5 mg/L Hg(II) ions. Hazard for drinking water.

Luminescent bacteria toxicity:

### **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: class 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:** Xn: Harmful

**R-phrases:** 20/21/22-33-52/53: Harmful by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-phrases:** 28-36-45-60: After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and/or its container must be disposed of as hazardous waste

**Contains:** Mercury (II) thiocyanate, Ethylene glycol

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### **SECTION 16: OTHER INFORMATION**

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

22: Harmful if swallowed.  
26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.  
33: Danger of cumulative effects.  
50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### ***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.**