

**Safety Data Sheet**According to Regulation (EC) No. 1907/2006  
OSHA Regulation 29 CFR 1910.1200  
Canadian Regulation SOR/88-66

**Revision Date:** 2012-05-21  
**Reason for Revision:** Section 14 Updated

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

**Product Name:** HI 93737C-0 Silver Reagent C

**Application:** Determination of Silver 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**

Highly flammable.

**SECTION 3: COMPOSITION AND COMPONENT INFORMATION**

**Component:** Ethanol

**EC-No.:** 200-578-6

**CAS-No.:** 64-17-5

**Hazard:** F

**Phrases:** R: 11

**Content:** > 90 %

**SECTION 4: FIRST AID MEASURES**

**After Inhalation:** Remove to fresh air.

**After Skin Contact:** Wash affected area with plenty of water. Remove contaminated clothing.

**After Eye Contact:** Rinse out with plenty of water for at least 10 minutes. Obtain medical attention.

**After Swallowing:** Immediately make victim drink plenty of water. Summon doctor.

**General Information:** Not available

**SECTION 5: FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media:**

Foam, Dry Powder, Carbon Dioxide

**Special Risks:**

Combustible. Vapors heavier than air. Forms explosive mixtures with air at ambient temperatures. Keep away from sources of ignition.

**Special Protective Equipment:**

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

**Additional Information:**

Cool container with spray water from a safe distance. Take measures to prevent electrostatic charging.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions:

Avoid substance contact. Do not inhale vapors. 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.

## SECTION 7: HANDLING AND STORAGE

### Handling:

Takes measures to prevent electrostatic charging. Keep away from sources of ignition. Work under hood. Do not inhale substance. Avoid generation of vapors/aerosols.

### Storage:

Tightly closed. In a well ventilated place. Keep away from sources of ignition and heat. 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>Ethanol</b>					
TWA (8hr)	1907 mg/m <sup>3</sup>	Belgium	TWA (8hr)	1900 mg/m <sup>3</sup>	Canada (Ontario)
TWA (8hr)	1880 mg/m <sup>3</sup>	Canada (Quebec)	TWA (8hr)	1900 mg/m <sup>3</sup>	France
TWA (8hr)	960 mg/m <sup>3</sup>	Germany	TWA (8hr)	1900 mg/m <sup>3</sup>	Greece
TWA (8hr)	1900 mg/m <sup>3</sup>	Hungary	TWA (8hr)	260 mg/m <sup>3</sup>	Netherlands
TWA (8hr)	1900 mg/m <sup>3</sup>	Poland	TWA (8hr)	1000 ppm	Portugal
TWA (8hr)	1900 mg/m <sup>3</sup>	Romania	TWA (8hr)	1910 mg/m <sup>3</sup>	Spain
TWA (8hr)	1920 mg/m <sup>3</sup>	UK	TWA (8hr)	1000 ppm	USA (ACGIH)
TWA (8hr)	1000 ppm	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. Apply skin-protective barrier cream. Wash hands after working with substance.

## SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

<b>Appearance:</b>	Orange liquid	<b>Odor:</b>	Alcohol-like odor	<b>Density at 20°C:</b>	0.845 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>	7.82 in 50% water	<b>Explosion Limit:</b>	Lower 3.3 vol% Upper 19 vol%	<b>Flash Point:</b>	~ 17°C
<b>Thermal Decomp.:</b>	NA				

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## **SECTION 10: STABILITY AND REACTIVITY**

### **Conditions to be Avoided:**

Heating

### **Hazardous Polymerization:**

Will not occur.

### **Further Information:**

Flammable. Explosive with air in a vaporous/gaseous state

### **Hazardous Decomposition Products:**

No information available.

### **Substances to be Avoided:**

No information available

## **SECTION 11: TOXICOLOGICAL INFORMATION**

### **Product Toxicity**

APPLICABLE TO MAIN COMPONENT:

Acute toxicity

Specific symptoms in animal studies:

Eye irritation test (rabbit): Irritations (ethanol).

Skin irritation test (rabbit): No irritation (ethanol).

Subacute to chronic toxicity

Applicable to the main component:

Sensitization:

Sensitisation test (Magnusson and Kligman): negative.

Bacterial mutagenicity: Salmonella typhimurium: negative.

Bacterial mutagenicity: Ames test: negative.

### **Potential Health Effects:**

**Inhalation:** Mucosal irritations. Risk of absorption.

**Skin Contact:** After long-term exposure to the chemical: dermatitis.

**Eye Contact:** Irritations.

**Ingestion:** Nausea, vomiting, diarrhea. After absorption of large amounts: salivation dizziness, inebriation, narcosis, respiratory paralysis.

**Further Data:** Systemic effects: euphoria. The product should be handled with the usual care when dealing with chemicals.

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### **Component Toxicity**

#### **Acute Toxicity:**

Ethanol

**LD50:** Oral - Rat - 7060 mg/kg

#### **Chronic Toxicity:**

Not Available

#### **Additional Data:**

Not Available

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## SECTION 12: ECOLOGICAL INFORMATION

APPLICABLE TO MAIN COMPONENT:

Abiotic degradation:

Rapid degradation. (air)

Biologic degradation:

Biodegradation: 94 % modified OECD screening test;

Readily biodegradable.

Behavior in environmental compartments:

Distribution: log P(o/w): -0.32 (ethanol);

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

Ecotoxic effects:

Biological effects:

In high concentrations: Harmful effect on aquatic organisms. When used properly, no impairments in the function of waste-water treatment plants are to be expected.

Fish toxicity: L.idus LC50 : 8140 mg/L /48 h;

Daphnia toxicity: Daphnia magna EC50 : 9268-14221 mg/L /48 h;

Maximum permissible toxic concentration:

Algal toxicity: Sc.quadricauda IC 5 : 5000 mg/L /7 d; Bacterial toxicity: Ps.putida EC5 : 6500 mg/L /16 h; Protozoa: E.sulcatum EC5 : 65 mg/L /72 h.

Further ecologic data:

BOD5 : 0.93-1.67 g/g; COD: 1.99 g/g; TOD: 2.10 g/g; BOD 74 % from TOD /5 d; COD 90 % from TOD.

**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:** 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):	Sea (IMDG):	Air (ICAO/IATA):
UN No.:	1170	1170	1170
Proper Shipping Name:	Ethanol solution	Ethanol solution	Ethanol solution
Class (Sub Risk):	3	3	3
Packing Group:	II	II	II

## SECTION 15: REGULATORY INFORMATION

**Labeling according to EC Directives:**

**Symbol:** F: Highly flammable

**R-phrases:** 11: Highly flammable.

**S-phrases:** 7-16: Keep container tightly closed. Keep away from sources of ignition - No smoking.

## SECTION 16: OTHER INFORMATION

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

NA

**Revision Information**

**Revision Date:** 2012-05-21

**Supersedes edition of:** 2009-06-10

**Reason for revision:** Section 14 Updated

**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.**