

**Revision Date:** 2014-05-22

**Reason for Revision:** (1st edition)

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

**Product Name:** HI 4005-40 Carbon Dioxide Filling Solution

**Application:** Filling Solution for ISE

**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.

**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>
Silver nitrate	231-853-9	7761-88-8	Ox. Sol. 2 Skin Corr. 1B Aquatic Acute 1 Aquatic Chronic 1 O, C, N	H272, H314, H400, H410 R: 8-34-50/53	> 0% - < 0.1%

**SECTION 4: FIRST AID MEASURES**

**After Inhalation:** Remove to fresh air. Call in physician.

**After Skin Contact:** Wash affected area with plenty of water. Dab with polyethylene glycol 400

**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:** Make victim drink plenty of water (if necessary several liters), avoid vomiting (risk of perforation!). Immediately call in physician. 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. The following may develop in event of fire: Nitrogen Oxides

**Special Protective Equipment:**

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

**Additional Information:**

Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:**

Do not inhale vapors. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

**Environmental Precautions:**

Take up with liquid-absorbent material.

**Additional Notes:**

Clean up affected area and dispose according to local regulation.

**SECTION 7: HANDLING AND STORAGE**

**Handling:**

Cannot be stored indefinitely. Stable in the recommended storage conditions.

**Storage:**

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

**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 established 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:**

Immediately change contaminated clothing. Wash hands and face after working with substance.

**SECTION 9: PHYSICAL/CHEMICAL PROPERTIES**

<b>Appearance:</b>	Colorless liquid	<b>Odor:</b>	Odorless	<b>Density at 20°C:</b>	1.08 g/cm <sup>3</sup>
<b>Melting Point:</b>	NA	<b>Boiling Point:</b>	ND	<b>Solubility:</b>	Soluble
<b>pH at 20°C:</b>	7	<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:**

Light sensitive.

**Hazardous Decomposition Products:**

In the event of fire: See section 5.

**Substances to be Avoided:**

Violent reactions possible with: ammonia, organic substances / decomposition, sulfides, carbon (charcoal)

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Product Toxicity**

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

**Potential Health Effects:**

- Inhalation:** Burns of mucous membranes. coughing and dyspnoea.
- Skin Contact:** Burns.
- Eye Contact:** Burns, Risk of permanent damage due to staining of the cornea.
- Ingestion:** Burns in mouth, throat, oesophagus and gastrointestinal tract.
- Further Data:** The following applies to soluble silver compounds: only slightly absorbed via the gastrointestinal tract. Strong irritations after contact with eyes and skin. The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities. 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:**

Not Available

**SECTION 12: ECOLOGICAL INFORMATION**

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

**APPLICABLE TO PARTIAL COMPONENT:**

The following applies to Silver Nitrate – as the pure substance:

Biologic degradation:

Methods for the determination of biodegradability are not applicable to inorganic substances.

Behavior in environmental compartments:

Distribution: log p(o/w): 0.19 (calculated).

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

BCF: 200;

Highly bioaccumulative (BCF 100-1000).

Ecotoxic effects:

Biological effects:

Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Forms corrosive mixtures with water even if diluted.

Fish toxicity: L.idus LC50: 0.029 mg/L /96 h; Onchorhynchus mykiss LC50: 0.006 mg/L /96 h.

Daphnia toxicity: Daphnia magna EC50: 0.002 mg/L /48 h.

Algal toxicity: Scenedesmus sp. IC50: 0.008 mg/L /8 d.

Bacterial toxicity: Ps.putida EC10: 0.006 mg/L /16 h.

Protozoa: protozoen EC10: 0.003 mg/L /48 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**

**Land:**

Not subject to transport regulations

**Sea:**

Not subject to transport regulations

**Air:**

Not subject to transport regulations

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

H314: Causes severe skin burns and eye damage.  
H400: Very toxic to aquatic life.  
H410: Very toxic to aquatic life with long-lasting effects.  
R34: Causes burns.  
R8: Contact with combustible material may cause fire.  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

***Revision Information*****Revision Date:** 2014-05-22**Supersedes edition of:** (1st edition)**Reason for revision:** (1st edition)**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.**