

## Safety Data Sheet

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

**Revision Date:** 2012-07-06  
**Reason for Revision:** (1st edition)

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

**Product Name:** HI 716-11 Bromine Certified Standard Cuvette - B    **Additional Product Codes:** HI 716-11

**Application:** Certified Standard for Validation of HI 716 Colorimeters

**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**

May cause cancer by inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**According to Regulation (EC) No. 1272/2008:**

**Classification:** Carcinogen, Inhalation (Category 1B)  
Chronic Aquatic Toxicity (Category 3)

**Signal Word:** **Danger**

**Pictograms:**



**Hazard Statements:** H350i: May cause cancer by inhalation.  
H412: Harmful to aquatic life with long lasting effects.

**Precaution Statements:** P273: Avoid release to the environment.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P380+P313: IF exposed or concerned: Get medical advice/attention.

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

**Symbol:** T: Toxic

**R-phrases:** 49-52/53: May cause cancer by inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-phrases:** 22-26-53-45-60-61: Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheet.

### **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>
Cobalt dichloride	231-589-4	7646-79-9	Carc. 1B Acute Tox. 4 Resp. Sens. 1 Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1 T, N	H350i, H302, H334, H317, H400, H410 R: 49-22-42/43-50/53	> 0.25% - < 1.0%
Hydrochloric acid	231-595-7	-	Skin Corr. 1B STOT SE 3 C, Xi	H314, H335 R: 34-37	> 1% - < 5%

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- After Inhalation:** Remove to fresh air.
- After Skin Contact:** Wash affected area with plenty of water. Immediately remove contaminated clothing.
- After Eye Contact:** Rinse out immediately with plenty of water and seek medical advice.
- After Swallowing:** Drink plenty of water (if necessary several liters), induce vomiting. Seek medical advice if feeling unwell.
- 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. Specific Hazard(s): Emits toxic fumes under fire conditions. The following may develop in event of fire: Hydrogen Chloride Gas
- 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. Contain escaping vapors with water. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

- Personal Precautions:**  
Do not inhale vapors/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.
- Environmental Precautions:**  
Do not allow to enter the sewerage system.
- Additional Notes:**  
Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation.

**SECTION 7: HANDLING AND STORAGE**

- |   |   |
|---|---|
| <b>Handling:</b><br>Avoid generation of vapors/aerosols. Do not inhale substance. | <b>Storage:</b><br>Tightly closed. In a well-ventilated place at +15 to +25 °C. Accessible only for authorized persons. |
|---|---|

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**SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION**

<i>Type</i>	<i>Value</i>	<i>Source</i>	<i>Type</i>	<i>Value</i>	<i>Source</i>
<b>Hydrochloric Acid</b>					
TWA (8hr)	8 mg/m <sup>3</sup>	Belgium	Ceiling	2 ppm	Canada (Ontario)
Ceiling	5 ppm	Canada (Quebec)	TWA (15min)	7.6 mg/m <sup>3</sup>	France
TWA (8hr)	3 mg/m <sup>3</sup>	Germany	TWA (8hr)	7 mg/m <sup>3</sup>	Greece
TWA (8hr)	8 mg/m <sup>3</sup>	Hungary	TWA (8hr)	8 mg/m <sup>3</sup>	Italy
TWA (8hr)	8 mg/m <sup>3</sup>	Netherlands	TWA (8hr)	5 mg/m <sup>3</sup>	Poland
Ceiling	2 ppm	Portugal	TWA (8hr)	8 mg/m <sup>3</sup>	Romania
TWA (8hr)	7.6 mg/m <sup>3</sup>	Spain	TWA (8hr)	2 mg/m <sup>3</sup>	UK
Ceiling	2 ppm	USA (ACGIH)	Ceiling	5 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. Wash hands after working with substance.

**SECTION 9: PHYSICAL/CHEMICAL PROPERTIES**

<b>Appearance:</b>	Red liquid	<b>Odor:</b>	Odorless	<b>Density at 20°C:</b>	~ 1.0 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>	~ 0.5	<b>Explosion Limit:</b>	NA	<b>Flash Point:</b>	NA
<b>Thermal Decomp.:</b>	NA				

**SECTION 10: STABILITY AND REACTIVITY**

**Conditions to be Avoided:**

Heating, cooling.

**Hazardous Polymerization:**

Will not occur.

**Further Information:**

Not available

**Hazardous Decomposition Products:**

In the event of fire: See section 5.

**Substances to be Avoided:**

Metals (generation of hydrogen), the generally known reaction partners of water.

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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:** Absorption. Mucosal irritations. Sensitization possible in predisposed persons.
- Skin Contact:** Slight irritations. Sensitization possible in predisposed persons.
- Eye Contact:** Irritations.
- Ingestion:** Irritations of mucous membranes in the mouth, pharynx, esophagus and gastrointestinal tract.
- Further Data:** Symptoms of acute cobalt intoxication: diarrhea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effects on kidneys (proteinuria, anuria), heart and pancreas. The product should be handled with the usual care when dealing with chemicals.

#### **Component Toxicity**

##### **Acute Toxicity:**

###### **Hydrochloric Acid**

**LC50:** Inhalation - Rat - 1562 ppm

**LD50:** Oral - Rabbit - 900 mg/kg

##### **Chronic Toxicity:**

###### **Cobalt(II) Chloride Hexahydrate**

IARC Group 2B: Possibly carcinogenic to humans

#### **Additional Data:**

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Cobalt(II) Chloride Hexahydrate – as the pure substance:

Acute toxicity:

LD50, Oral, Rat: 766 mg/kg. Remarks: behavioral: tremor; gastrointestinal: hypermotility, diarrhea; nutritional and gross metabolic: weight loss or decreased weight gain.

LD50, Skin, Rat: > 2000 mg/kg

LD50 Intraperitoneal, Rat: 35 mg/Kg. Remarks: cardiac: other changes. Skin and appendages: Skin: after systemic exposure: dermatitis, other.

LD50, Intraperitoneal, Mouse: 90 mg/Kg

Sensitization: May cause allergic respiratory and skin reactions.

Signs and symptoms of exposure:

Large amounts of cobalt(II) chloride depress erythrocyte production which may lead to death in children. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Skin Contact: Causes burns. Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns.

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

Target organ information:

Thyroid. Heart. Male reproductive system. Blood. Kidneys. Pancreas.

Chronic exposure - mutagen

Human, Lymphocyte, 4500 µg/L: DNA damage

Mouse, Mammary gland, 2 µmol/L: Mutation in mammalian somatic cells.

Chronic exposure - teratogen

Mouse, Intravenous, 47590 mg/kg, 8D (PREG): Specific Developmental Abnormalities: Musculoskeletal system.

Mouse, Oral, 3949 mg/kg, 13 weeks: Paternal Effects: Testes, epididymis, sperm duct.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Hydrogen Chloride – as the pure substance:

Signs and symptoms of exposure:

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Risk of perforation in the esophagus and stomach. After a latency period: cardiovascular failure.

Skin Contact: Causes burns. Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns.

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

Chronic exposure - teratogen

Rat, Inhalation, 450 mg/m<sup>3</sup>/1h, 1 d (PRE): Specific Developmental Abnormalities.

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

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

**APPLICABLE TO PARTIAL COMPONENT:**

The following applies to Cobalt(II) Chloride Hexahydrate – as the pure substance:

Ecotoxicological effects:

EC50 Algae: 0.5 mg/L (96 h)

EC50 Daphnia: 1.1 - 1.60 mg/L (48 h)

LC50 Fish: 0.33 mg/L (96 h)

**APPLICABLE TO PARTIAL COMPONENT:**

The following applies to Hydrogen Chloride – as the pure substance:

Ecotoxicological effects:

Toxic effects on fish and plankton. Forms corrosive mixtures with water even if diluted. Damage to plant growth.

The following applies to HCl in general: harmful effects on aquatic organisms. Harmful effects due to pH shift.

Biological effects: hydrochloric acid (including such due to reaction): lethal for fish as from 25 mg/L.

LC50 Leuciscus idus, 1 mol/L: 862 mg/L (96 h)

Harmful effects begin at: plants 6 mg/L. Does not cause biological oxygen deficit.

**Further Data:** Harmful for aquatic systems. May cause long term aquatic effects in the environment. 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

### **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**

R22: Harmful if swallowed.

R34: Causes burns.

R37: Irritating to respiratory system.

R42/43: May cause sensitization by inhalation and skin contact.

R49: May cause cancer by inhalation.

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H317: May cause an allergic skin reaction.

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335: May cause respiratory irritation.

H350i: May cause cancer by inhalation.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

**Revision Information**

**Revision Date:** 2012-07-06

**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.**