Safety Data Sheet

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

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Reason for Revision: (1st edition)

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: Iodine Certified Standard Cuvette - 1.00 ppm

Application: Certified Color Standard for Validation of HI 718 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.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component:	Cobalt(II) Chloride Hexahydrate	Hydrochloric Acid
EC-No.:	231-589-4	231-595-7
CAS-No.:	7791-13-1	7647-01-0
Hazard:	T, N, Carc. Cat. 2	C
Phrases:	R: 22-42/43-49-50/53	R: 34-37
Content:	> 0.25% - < 1%	> 1% - < 10%

SECTION 4: FIRST AID MEASURES

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.

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. 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

Handling:

Avoid generation of vapors/aerosols. Do not inhale substance.

Storage:

Tightly closed in a well-ventilated place at +15 to +25 °C. Accessible only for authorized persons.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	*Value*	*Source*	*Type*	*Value*	*Source*
Hydrochloric Acid					
TWA (8hr)	8 mg/m³	Belgium	Ceiling	2 ppm	Canada (Ontario)
Ceiling	5 ppm	Canada (Quebec)	TWA (15min)	7.6 mg/m³	France
TWA (8hr)	3 mg/m³	Germany	TWA (8hr)	7 mg/m³	Greece
TWA (8hr)	8 mg/m³	Hungary	TWA (8hr)	8 mg/m³	Italy
TWA (8hr)	8 mg/m³	Netherlands	TWA (8hr)	5 mg/m³	Poland
Ceiling	2 ppm	Portugal	TWA (8hr)	8 mg/m³	Romania
TWA (8hr)	7.6 mg/m³	Spain	TWA (8hr)	2 mg/m³	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

Appearance:	Pink liquid	***Odor:***	Odorless	***Density at 20 °C:***	~ 1.0 g/cm³
Melting Point:	NA	***Boiling Point:***	ND	***Solubility:***	Soluble
pH at 20 °C:	< 0.5	***Explosion Limit:***	NA	***Flash Point:***	NA
Thermal Decomp.:	NA				

SECTION 10: *STABILITY AND REACTIVITY*

Conditions to be Avoided:

Strong Heating, Freezing

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.

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: hyper motility, 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
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.
Route of exposure
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 - carcinogen
Result: This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
IARC Carcinogen List
Rating: Group 2B
Chronic exposure - mutagen
Human, 4500 UG/L, Cell Type: lymphocyte
DNA damage
Mouse, 2 UMOL/L, Cell Type: mammary gland
Mutation in mammalian somatic cells.
Chronic exposure - teratogen
Species: Mouse, Dose: 47590 mg/Kg
Route of Application: Intravenous
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Chronic exposure - reproductive hazard
Species: Mouse, Dose: 3949 mg/Kg
Route of Application: Oral
Exposure Time: (13W MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.
Paternal Effects: Other effects on male.

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.
Route of exposure
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
Species: Rat, Dose: 450 mg/m³/1h
Route of Application: Inhalation
Exposure Time: (1D PRE)
Result: Specific Developmental Abnormalities.

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
Test Type: EC50 Algae, Species: Chlorella vulgaris: Time: 96 h, value: 0.5 mg/L
Test Type: EC50 Daphnia, Species: Daphnia magna: Time: 48 h, value: 1.1 - 1.60 mg/L
Test Type: LC50 Fish, Species: Cyprinus carpio: Time: 96 h, value: 0.33 mg/L

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 25mg/L.
Test Type: LC50 Species: Leuciscus idus: Time: 96 h, value: 862 mg/L (1N solution).
Harmful effects begins 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:

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: 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: 53-36/37-45: Avoid exposure - obtain special instruction before use. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

Contains: Cobalt(II) chloride hexahydrate; Additional labeling: May produce an allergic reaction

SECTION 16: OTHER INFORMATION

Text of R-phrases under Section 3

22: Harmful if swallowed.
34: Causes burns.
37: Irritating to respiratory system.
42/43: May cause sensitization by inhalation and skin contact.
49: May cause cancer by inhalation.
50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Revision Information

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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.