

BACHARACH, INC.
MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet has been prepared to comply with the EC Directive, Canadian WHMIS and OSHA Hazard Communication Regulations.

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION
AND THE COMPANY/UNDERTAKING**

Bacharach, Inc.
621 Hunt Valley Circle
New Kensington, PA 15068

Emergency Phone: (800) 424-9300 (Chemtrec)
Information Phone: (724) 334-5760
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Product Name: Fluid, Fyrite, O2

Product Number: 11-0169

MSDS Number: 99-0004

Revision Number: 9

Product Use: Instrument Fluid

MSDS Date of Preparation/Revision: 7/01/03

SECTION 2: COMPOSITION/ INFORMATION INGREDIENTS

Chemical Name	CAS# / EINECS#	%	EU Classification (67/548/EEC)
Water and Chloride	Proprietary	>78.5%	Not Applicable
Hydrochloric Acid	7647-01-0 / 231-595-7	3%	C R34, R37
Isooctyl Alcohols (C7-9)	68526-83-0 / 271-231-4	<0.8%	Not Applicable
Zinc Chloride (as Zn)	7646-85-7 / 231-592-0	11.4%	C, N R34, R50/53
Chromium (II) Chloride (as Cr)	10049-05-5 / 233-163-3	6.3%	Not Applicable

See Section 16 for further information on EU Classification.

SECTION 3: HAZARDS IDENTIFICATION

Blue liquid with an unpleasant chlorine odor.

Emergency Overview: Corrosive material. Liquid causes burns to the eyes and skin. Vapors are irritating and may be harmful. May cause narcosis and other nervous system effects.

EU Preparation Classification (1999/45/EC): Corrosive (C), Dangerous for Environment (N) R34, R51/53

SECTION 4: FIRST AID

Eye Contact: Immediately flush with copious amounts of water for at least 20 minutes, lifting the upper and lower lids. Get immediate medical attention.

Skin Contact: Immediately flush with water while removing any contaminated clothing. Continue flushing for 20 minutes. Get medical attention if pain or irritation persists.

Inhalation: If acute overexposure occurs, remove victim to fresh air. Give artificial respiration if needed. Get immediate medical attention.

Ingestion: DO NOT induce vomiting. Do not give anything by mouth to a person who is unconscious or convulsing. Immediately rinse mouth out with a small amount of water. Get immediate medical attention.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Combustible

Test Method: N/A

Autoignition Temperature: N/A

Flammable Limits: LEL: N/A

UEL: N/A

Extinguishing Media: Use any media appropriate for surrounding fire.

Special Fire Fighting Procedures: Firefighters should wear NIOSH approved positive pressure self contained breathing apparatus and full protective clothing for all fires involving chemicals.

Unusual Fire And Explosion Hazards: Isooctyl alcohol has a flash point of 183°F and is insoluble in water. Only a small amount is present (<1%) so only a very slight fire hazard exists. The balance is not combustible.

Hazardous Combustion Products: Oxides of carbon, hydrogen chloride, chlorine and possibly zinc and chromium compounds.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Wear recommended protective equipment. Contain spill. Dilute spill with water and neutralize with baking soda or soda ash. Absorb neutralized material and place in container for disposal. Do not release to the environment. Refer to Section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

Work Practices: Prevent contact with the eyes, skin and clothing. Avoid breathing vapors. Use in a well ventilated area. When the fluid is used in an instrument (Fyrite), do not vent in inverted position or before the fluid has drained from the top well of the Fyrite. Hold the Fyrite away from the face when venting the instrument.

Special Precautions: Always change Fyrite fluid in the immediate vicinity of a sink with running water available in case of contact because of the corrosive effect of Fyrite fluid. DO NOT dispose of fluid down drain.

Storage: Store in a cool, dry place, separate from caustic storage. Avoid crushing containers. When opening refill containers internal pressure may eject plastic plug after the cap has been removed. Always open containers slowly, holding away from face.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	Exposure Limits
Water and Chloride	None Established
Hydrochloric Acid (Hydrogen Chloride)	5 ppm PEL-Ceiling 2 ppm TLV-Ceiling
Isooctyl Alcohols (C7-9)	50 ppm TLV-TWA skin
Zinc Chloride (as fume)	1 mg/m ³ PEL-TWA 1 mg/m ³ TLV-TWA 2 mg/m ³ TLV-STEL
Chromium (II) Chloride (as Cr)	0.5 mg/m ³ PEL-TWA 0.5 mg/m ³ TLV-TWA

Ventilation: General ventilation should be adequate for normal use.

Respiratory Protection: None required for normal use. Do not inhale vapors.

Gloves: Rubber or other impervious gloves required when filling Fyrite or performing gas analysis.

Eye Protection: Wear chemical safety goggles and face shield when filling Fyrite or performing gas analysis.

Other Protective Equipment: An available source of running water for eye and skin flushing is recommended.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance And Odor: Blue liquid, unpleasant chlorine odor. The odor threshold for hydrochloric acid is reported to be 1-5 ppm.

pH: <1

Boiling Point: >100°C

Melting Point: <0°C

Solubility In Water: Isooctyl alcohol: insoluble

Octanol/Water Coefficient: Not determined

Specific Gravity: >1

Vapor Pressure: Not available

Vapor Density: Not available

Percent Volatile: >50%

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: Extremely high temperatures.

Incompatibility: Metals, bases, many organic materials including cyanides, sulfides, and aldehydes. Avoid exposure to any chemical whose compatibility has not been established.

Hazardous Decomposition Products: Reaction with metals can liberate flammable hydrogen gas. Heating to decomposition will release hydrogen chloride, chlorine and possibly chromium and zinc compounds.

Hazardous Polymerization: Will not occur.

Conditions To Avoid: N/A

SECTION 11: TOXICOLOGICAL INFORMATION**Potential Health Effects:**

Eye Contact: May cause severe irritation with possible chemical burns and permanent damage.

Skin Contact: May cause irritation or chemical burns, severity depends on duration of contact.

Inhalation: May cause eye, mucous membrane and respiratory irritation. Severe overexposures may cause pulmonary edema.

Ingestion: May cause gastrointestinal corrosion, nausea, vomiting, intense thirst and shock followed by renal failure and liver injury. May be fatal if swallowed.

Chronic Health Effects: Prolonged exposure to chromium salts may cause an allergic dermatitis, bronchial asthma and perforation of the nasal septum. Divalent and trivalent chromium compounds are considered to have a low order of systemic toxicity. Although hexavalent chromium is considered to be carcinogenic, trivalent and divalent chromium compounds are not. Prolonged inhalation of hydrochloric acid vapors may cause lung changes and dental erosion.

Carcinogen Status: None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP or OSHA.

Medical Conditions Aggravated By Exposure: Pre-existing skin and respiratory conditions may be aggravated by exposure to this material.

Acute Toxicity Data: Chromium (II) chloride: LD50 oral rat: 1,870 mg/kg.
Hydrochloric Acid: LC50 inhalation rat: 3,124 ppm/1hr.
LD50 oral rabbit: 900 mg/kg
Zinc Chloride: LD50 oral rat: 350 mg/kg

Irritancy Data: This material is corrosive to tissues.

Sensitization: Chromium salts have been reported to cause skin and respiratory sensitization.

Reproductive Toxicity: This material has not been tested as a whole. Zinc chloride and chromium (II) chloride have been reported to cause adverse reproductive effects in laboratory animals.

Teratogenicity: This material has not been tested as a whole. Zinc chloride, hydrochloric acid and chromium (II) chloride have been reported to cause birth defects in laboratory animals.

Mutagenicity: This material has not been tested a whole. Hydrochloric acid, zinc chloride and chromium (II) chloride have tested positive for mutagenicity in some test systems.

Synergistic Effects: There are no chemicals known to cause any additive adverse health effects.

SECTION 12: ECOLOGICAL INFORMATION

The ecological effects of this product have not been evaluated.

SECTION 13: DISPOSAL

Dispose in accordance with all local, state, and federal regulations.

RCRA Hazardous Waste Codes: D002, D007

SECTION 14: TRANSPORTATION DATA

DOT Shipping Name: Corrosive Liquid, Acidic, Inorganic, n.o.s. (Hydrochloric Acid, Zinc Chloride)
DOT Hazard Class: 8, PG II
UN Number: UN3264
DOT Labels Required (49CFR172.101): Corrosive
Hazardous Substance (49CFR172.101): Zinc Chloride
Reportable Quantity: 8,772 lbs (Product)
Emergency Response Guide Number: 154

IATA Shipping Name: Corrosive Liquid, Acidic, Inorganic, n.o.s., (Hydrochloric Acid, Zinc Chloride)
IATA Hazard Class: 8, PG II
UN Number: UN3264
IATA Hazard Labels Required: Corrosive (Cargo Aircraft Only 1-30 Liters)

SECTION 15: OTHER REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting: Acute health, Chronic health.

SARA 313: This product contains the following chemicals subject to Annual Release Reporting Requirements under SARA Section 313 (40 CFR 372):

Chromium (II) Chloride	6.3% (as Cr)
Hydrochloric Acid	3%
Zinc Chloride	11.4% (as Zn)

CERCLA SECTION 103 Reportable Quantity: 8,772 lbs. (Zinc Chloride 1000 lbs.)

US Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory.

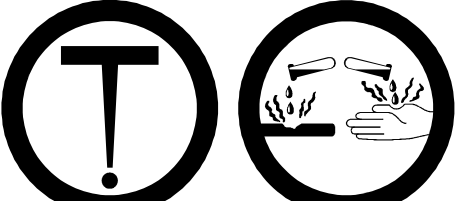
STATE REGULATIONS:

California Proposition 65: This product contains the following substances known to the State of California to cause Cancer and/or Reproductive Harm: None

INTERNATIONAL REGULATIONS:

Australian Inventory of Chemical Substances: All of the components in this product are listed on the AICS Inventory.



Canadian WHMIS Classification:

	Class D-2-B (Toxic Material Causing Other Chronic Effects) Class E (Corrosive Material)
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This product has been classified in accordance with the hazard criteria in the CPR and the MSDS contains all the information required by the CPR.

European Inventory Of Commercial Chemical Substances: All of the components of this product are listed on the EINECS Inventory.

European Community Labeling: Contains Zinc Chloride

 <p>CORROSIVE</p>	 <p>BAD FOR THE ENVIRONMENT</p>	<p>R34 Causes burns. R51/53 Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S61 Avoid release to the environment. Refer to special instructions/ material safety data sheet</p>
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Korean Existing Chemical Inventory: All of the components in the product are listed on the KECL Inventory.

Philippines Inventory of Chemicals and Chemical Substances: All of the components in this product are listed on the PICCS Inventory.

SECTION 16: OTHER INFORMATION

NFPA HAZARD RATING: **HEALTH:** 3 **FIRE:** 0 **REACTIVITY:** 0

EU Classes and Risk Phrases for Reference (See Sections 2 and 3):

- C Corrosive
- N Dangerous for the Environment
- R34 Causes burns.
- R37 Irritating to respiratory system
- R50/53 Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
- R51/53 Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment

Date of Latest MSDS Revision: 04/07/00

Revision Summary: Updated Format, Revised Section 1, 2, 3, 6, 7, 8, 9, 10, 11, 14, 15, 16

The preceding information is believed to be correct and current as of the date of preparation of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Bacharach, Inc., it is the users obligation to assure safe use of this product.