

SUPPLIER

**MATERION****MATERIAL SAFETY DATA SHEET**

GENERATED 03/15/2011, **REVISION** 11/16/2009, **SUPERCEDES REVISION** 05/25/2007, **DATE CREATED** 11/12/1986

SECTION I - PRODUCT IDENTIFICATION CIROM-IRX*

PRODUCT NAME: CIROM-IRX*
PRODUCT CODE: S-MSDS0027
REFERENCE #: MC0078
MANUFACTURER INFORMATION
COMPANY NAME: Materion Advanced Chemicals Inc.
1316 W. St. Paul Avenue
Milwaukee, WI 53233
EMERGENCY CONTACT: CHEMTREC (800)424-9300
ALTERNATE EMERGENCY CONTACT: Materion Advanced Chemicals Inc. (414)289-9800
CHEMICAL FAMILY: Mixed metal fluoride
FORMULA: Trade secret
SYNONYMS
Substance IRX

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION CIROM-IRX*

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits
(Trade Secret)	NA	0.0 -100.0 %	2.5 mg/m3 (fluoride)	2.5 mg/m3 (fluoride)	NE

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS CIROM-IRX*

PHYSICAL STATES: [] Gas [] Liquid [X] Solid
MELTING POINT: N.A.
BOILING POINT: N.A.
SPECIFIC GRAVITY (WATER = 1): 5.62 gm/cc

VAPOR PRESSURE (VS. AIR OR MM HG):**VAPOR DENSITY (VS. AIR = 1):****EVAPORATION RATE (VS BUTYL ACETATE=1):****SOLUBILITY IN WATER:** insoluble**SOLUBILITY NOTES****PERCENT VOLATILE:** N.A.**APPEARANCE AND ODOR**

Brown powder, pieces, tablets, granules; no odor.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA
CIROM-IRX*****FLASH PT:** N.A.**EXPLOSIVE LIMITS:** LEL: NA UEL: NA**EXTINGUISHING MEDIA**

USE: Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

UNUSUAL FIRE AND EXPLOSION HAZARDS

When heated to decomposition or comes in contact with acids/acid fumes, substance IRX may emit toxic fumes of fluorine.

HAZARDOUS COMBUSTION PRODUCTS**SECTION V - REACTIVITY DATA
CIROM-IRX*****STABILITY:** Unstable [] Stable [X]**CONDITIONS TO AVOID - INSTABILITY**

None

INCOMPATIBILITY - MATERIALS TO AVOID

Acids and strong oxidizing agents.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

Fumes of fluorine.

HAZARDOUS POLYMERIZATION: Will occur [] Will not occur [X]**CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION**

None

**SECTION VI - HEALTH HAZARD DATA
CIROM-IRX***

HEALTH HAZARDS (ACUTE AND CHRONIC)

Inorganic fluorides are generally highly irritating and toxic. Chronic fluorine poisoning, or "fluorosis," occurs among miners of cryolite, and consists of sclerosis of the bones, caused by fixation of the calcium by fluorine. There may also be some calcification of the ligaments. The teeth are mottled, and there is osteosclerosis and ostemalacia. Large doses can cause very severe nausea, vomiting, diarrhea, aggravate attacks of asthma and severe bone changes, making normal movements painful. Some signs of pulmonary fibrosis are noted. Some enzyme system effects are reported. Irritants to the eyes, skin and mucous membranes. Loss of weight, anorexia, anemia, wasting and cachexia and dental defects are among the common findings in chronic fluorine poisoning. There may be an eosinophilia and impairment of growth in young workers. Symptoms of intoxication include gastric, intestinal, circulatory, respiratory and nervous complaints and rashes. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

INHALATION:

Acute: May cause irritation to the respiratory tract and mucous membrane. Dusts may cause lung damage. May cause acute poisoning. Chronic: May cause chronic poisoning, fluorosis, pulmonary fibrosis, asthma attacks and severe bone changes. Fumes may cause cardiotoxic and bronchoconstrictor effects.

INGESTION:

Acute: May be a poison by ingestion and intraperitoneal route. May cause gastrointestinal irritation. Chronic: May affect the neorendocrine, circulatory, enzyme and nervous system. Also, it may affect the liver and kidney functions.

SKIN:

Acute: May be moderately toxic by subcutaneous route. May cause irritation and rashes. Chronic: May cause dermatitis.

EYE:

Acute: May cause irritation. Chronic: No chronic health effects recorded.

TARGET ORGANS: May affect the heart, liver, kidneys, blood, central nervous system, respiratory system, skin and eyes.

CARCINOGENICITY: NTP? No IARC Monographs? No OSHA Regulated? No

CARCINOGENICITY/OTHER INFORMATION

None

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

No toxicity data recorded.

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: May cause writhing, loss of muscle coordination, labored breathing, sedation, hypotension, and death by cardiovascular collapse. Acute poisoning may cause: excessive salivation, vomiting, colic, violent diarrhea, tremors, muscular paralysis of the central nervous system. Strong vasoconstriction, a rise in blood pressure, which may cause the stomach, intestines and kidneys to hemorrhage. Chronic poisoning is similar to acute but is less severe. Fibrosis may cause: sclerosis of the bones, calcification of ligaments, mottled teeth, osteosclerosis, ostemalacia, loss of weight, anorexia, anemia, wasting, cachia and dental defects.

INGESTION: May cause an increase in blood coagulation, nausea, vomiting, diarrhea, abdominal burning and cramp like pain.

SKIN: May cause redness, sensitivity to heat, itching and skin lesions.

EYE: May cause redness, itching, burning and watering.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Pre-existing respiratory and skin disorders.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention immediately.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention immediately. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if irritation persists.

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if irritation persists.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE CIROM-IRX*

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD

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

HAZARD LABEL INFORMATION:

Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

PRECAUTIONS TO BE TAKEN IN HANDLING

None

PRECAUTIONS TO BE TAKEN IN STORING

None

OTHER PRECAUTIONS

None

SECTION VIII- CONTROL MEASURES CIROM-IRX*

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

NIOSH respirator

EYE PROTECTION

Safety glasses

PROTECTIVE GLOVES

Rubber gloves

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination

VENTILATION

To maintain concentration at or below PEL, TLV

General ventilation not recommended

WORK/HYGIENIC/MAINTENANCE PRACTICES

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION IX - ADDITIONAL COMMENTS
CIROM-IRX*

*U.S. Patent No. 5,262,196

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