



KENCRO

CHEMICALS

FERRIC CHLORIDE

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT IDENTIFIER: FERRIC CHLORIDE SOLUTION
PRODUCT USE: TREATMENT OF SEWAGE AND INDUSTRIAL WASTES, ETCHING AGENT, DISINFECTANT, PIGMENT, FEED ADDITIVE, WATER PURIFICATION, COAGULANT
CHEMICAL FAMILY: INORGANIC SALT SOLUTION
SUPPLIER'S NAME AND ADDRESS: KENCRO CHEMICALS LIMITED
2172 WYECROFT RD., UNIT #4
OAKVILLE, ON
L6L 5V6
905-827-4133
24 HR. EMERGENCY NUMBER: 613-996-6666 (CANUTEC)

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	C.A.S. #	WT.%	LC50	LD50
FERRIC CHLORIDE	7705-08-0	25 - 45	N/AV.	N/AV.
HYDROCHLORIC ACID	7647-01-0	0 - 3	N/AV.	N/AV.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

ORANGE, BROWN LIQUID, SLIGHT ODOUR OF ACID.
EXTREMELY IRRITATING TO EYES, SKIN, RESPIRATORY TRACT AND DIGESTIVE SYSTEM.

SIGNS AND SYMPTOMS OF SHORT-TERM EXPOSURE:

SKIN CONTACT: MAY CAUSE SKIN IRRITATION WITH DISCOMFORT OR RASH, SKIN BURNS OR ULCERATION. FERRIC CHLORIDE HAS BEEN INFREQUENTLY ASSOCIATED WITH SKIN SENSITIZATION IN HUMANS.

SKIN ABSORPTION: N/AP.

EYE CONTACT: HEALTH EFFECTS OF OVEREXPOSURE BY EYE CONTACT MAY INCLUDE DISCOLOURATION OF EYE TISSUES, EYE IRRITATION AND DISCOMFORT, TEARING AND BLURRING OF VISION, OR EYE CORROSION WITH CORNEAL OR CONJUNCTIVAL ULCERATION.

INHALATION: OVEREXPOSURE MAY RESULT IN IRRITATION OF THE UPPER RESPIRATORY PASSAGES WITH COUGHING.

INGESTION: MAY CAUSE CORROSIVE DAMAGE TO THE GI TRACT. REPEATED INGESTION OF SUBLETHAL DOSES MAY LEAD TO EXCESSIVE DEPOSITION IN THE TISSUES ACCOMPANIED BY PANCREATIC AND LIVER DAMAGE.

POTENTIAL CHRONIC HEALTH EFFECTS:
INGESTION IN HIGHER DOSES MAY LEAD TO ABNORMAL LIVER FUNCTION WITH NAUSEA OR VOMITING, REDUCED APPETITE, ABDOMINAL PAIN, LETHARGY, TARRY STOOLS, DIARRHEA, FAST AND WEAK PULSE, HYPERTENSION, DEHYDRATION, ACIDOSIS AND COMA.

OTHER IMPORTANT HAZARDS:
TEMPORARY ALTERATION OF THE HEART'S ELECTRICAL ACTIVITY MAY RESULT IN IRREGULAR PULSE, PALPITATIONS OR INADEQUATE CIRCULATION. IF DEATH DOES NOT OCCUR IMMEDIATELY, SYMPTOMS MAY CLEAR IN A FEW HOURS BUT RETURN WITHIN A DAY OF CYANOSIS, PULMONARY EDEMA, SHOCK, CONVULSIONS, ACIDOSIS, FEVER AND DEATH. INDIVIDUALS WITH PRE-EXISTING DISEASES OF THE LIVER MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF REPEATED EXPOSURES.

SECTION 4: FIRST AID MEASURES

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.
SKIN CONTACT: FLUSH SKIN WITH WATER. REMOVE CONTAMINATED CLOTHING; WASH BEFORE REUSE.
EYE CONTACT: IMMEDIATELY FLUSH EYES FOR 15 MINUTES WITH PLENTY OF WATER. CALL A PHYSICIAN.
INGESTION: DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER, THEN AN ANTACID. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS INDIVIDUAL. CALL A PHYSICIAN.

SECTION 5: FIRE FIGHTING MEASURES

FIRE HAZARDS/CONDITION OF FLAMMABILITY:

NON-FLAMMABLE.

FLASH POINT: N/AP.

FLASH POINT METHOD: N/AP.

LOWER FLAMMABLE LIMIT: N/AP.

(% BY VOL.)

OXIDIZING PROPERTIES: N/AP.

FLAME PROJECTION LENGTH: N/AP.

AUTO IGNITION TEMPERATURE: N/AP.

UPPER FLAMMABLE LIMIT: N/AP.

(% BY VOL.)

EXPLOSION DATA: SENSITIVITY TO MECHANICAL IMPACT/STATIC DISCHARGE:

NOT EXPECTED TO BE SENSITIVE TO STATIC DISCHARGE OR MECHANICAL IMPACT.

SUITABLE EXTINGUISHING MEDIA:

WILL NOT BURN. USE MATERIALS APPROPRIATE FOR SURROUNDING FIRE.

SPECIAL FIRE-FIGHTING PROCEDURES/EQUIPMENT:

COOL EXPOSED TANKS WITH WATER.

HAZARDOUS COMBUSTION PRODUCTS:

MAY PRODUCE HYDROGEN CHLORIDE.

SECTION 6: ACCIDENTAL RELEASE MEASURES

LEAK AND SPILL PROCEDURES:

REVIEW SAFETY PRECAUTIONS BEFORE PROCEEDING WITH CLEANUP. USE APPROPRIATE PERSONAL PROTECTION EQUIPMENT. NEUTRALIZE SPILL WITH LIME (CALCIUM HYDROXIDE), LIMESTONE (CALCIUM CARBONATE), OR SODA ASH (SODIUM CARBONATE). CAUTION: LIMESTONE AND SODA ASH WILL EVOLVE CO₂; VENTILATION SHOULD BE PROVIDED IN ENCLOSED AREAS. DIKE AREA AROUND SPILL TO PREVENT SPREADING, AND USE ABSORBENT MATERIAL TO PICK UP SPILL.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING PROCEDURES:

WEAR SAFETY EQUIPMENT. PRODUCT IS CORROSIVE TO MOST METALS EXCEPT TITANIUM. AVOID ALL SKIN CONTACT AND GETTING IN EYES. PROTECT CONTAINER FROM PHYSICAL DAMAGE. EMPTIED CONTAINER MAY RETAIN VAPOUR AND PRODUCT RESIDUE.

STORAGE REQUIREMENTS:

KEEP CONTAINERS CLOSED. USE RUBBER-LINED STEEL TANK CARS/TRUCKS; POLYETHYLENE DRUMS AND BOTTLES.

INCOMPATIBLE MATERIALS:

ALLYL CHLORIDES, SODIUM, POTASSIUM. RAPIDLY CORRODES MOST METALS (TITANIUM IS ONE EXCEPTION). MAY GENERATE FLAMMABLE, POTENTIALLY EXPLOSIVE HYDROGEN GAS. AVOID CONTACT WITH NYLON, ALUMINUM/ALUMINUM ALLOYS, CARBON STEEL, STAINLESS STEEL, AND COPPER/COPPER ALLOYS.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS

INGREDIENTS	ACGIH TLV
SOLUBLE IRON SALTS	1MG/M ³ AS FE (8 HOUR TIME-WEIGHTED AVERAGE)
HYDROCHLORIC ACID	7.5MG/M ³ (CEILING)

SEE COMPOSITION/INFORMATION ON INGREDIENTS, SECTION 2.

ENGINEERING CONTROLS:

ADEQUATE GENERAL VENTILATION SHOULD BE PROVIDED TO KEEP VAPOUR AND MISTS BELOW EXPOSURE LIMITS.

GLOVES/TYPE:

IMPERVIOUS GLOVES.

RESPIRATORY/TYPE: WEAR A NIOSH/OSHA APPROVED RESPIRATOR WITH A DUST/MIST CARTIDGE IF THERE IS POTENTIAL OF EXPOSURE TO MISTS IN EXCESS OF APPLICABLE LIMITS.
EYE/TYPE: WEAR SAFETY GLASSES WITH SIDE SHIELDS.
FOOTWEAR/TYPE: IMPERVIOUS BOOTS.
CLOTHING/TYPE: WHERE THERE IS POSSIBILITY OF SKIN CONTACT, WEAR APRON, HOOD, PANTS AND JACKET.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	LIQUID	APPEARANCE:	ORANGE, BROWN LIQUID
ODOUR:	SLIGHTLY ACID	ODOUR THRESHOLD:	N/AV.
PH:	<1	BOILING POINT:	106°C(223°F)
SPECIFIC GRAVITY:	1.2 – 1.5	MELTING/FREEZING POINT:	-12°C(10°F) 40% SOLN.
COEFFICIENT OF WATER/OIL		SOLUBILITY IN WATER:	COMPLETE
DISTRIBUTION:	N/AV.	VAPOUR DENSITY (AIR=1):	1.0=AIR, NONE FOUND
EVAPOURATION RATE:	NONE FOUND	VAPOUR PRESSURE (mmHg):	40
VOLATILITY:	55 – 75 (WATER)		
MOLECULAR WEIGHT:	162.2		
MOLECULAR FORMULA:	FECL ₃		

SECTION 10: REACTIVITY AND STABILITY DATA

STABILITY AND REACTIVITY: STABLE.
CONDITIONS TO AVOID: MAY REACT WITH METAL TO PRODUCE HYDROGEN CHLORIDE.
HAZARDOUS DECOMPOSITION PRODUCTS: HYDROGEN CHLORIDE.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA: NO SPECIFIC DATA.
CARCINOGENIC STATUS: NOT LISTED AS CARCINOGENIC BY IARC, NTP, OSHA OR ACGIH.
REPRODUCTIVE EFFECTS: N/AV.
TERATOGENICITY: N/AV.
MUTAGENICITY: N/AV.
SENSITIZATION TO MATERIAL: SEE ROUTE OF ENTRY: SKIN CONTACT.
SYNERGISTIC MATERIALS:N/AV.
MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: EYE CORROSION WITH CORNEAL ULCERATION.
ADDITIONAL HEALTH HAZARDS: NONE KNOWN.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS: THIS PRODUCT SHOULD NOT BE ALLOWED TO ENTER DRAINS OR WATER COURSES, OR BE DEPOSITED WHERE IT CAN AFFECT GROUND OR SURFACE WATERS.
IMPORTANT ENVIRONMENTAL CHARACTERISTICS: NO INFORMATION AVAILABLE.
ECOTOXICOLOGICAL: TOXIC EFFECTS IN ANIMALS FROM REPEATED EXPOSURE BY INGESTION INCLUDE REDUCED WEIGHT GAIN, ELEVATED SERUM IRON LEVELS, INCREASED RED BLOOD CELL COUNTS AND IRON DEPOSITION IN MANY ORGANS. TESTS IN BACTERIAL AND MAMMALIAN CELL CULTURES DEMONSTRATES NO GENETIC DAMAGE.

SECTION 13: DISPOSAL CONSIDERATIONS

HANDLING FOR DISPOSAL:SEE SECTION 7 – HANDLING AND STORAGE FOR FURTHER DETAILS.
METHOD OF DISPOSAL: DISPOSE IN ACCORDANCE WITH FEDERAL, PROVINCIAL AND LOCAL HAZARDOUS WASTE LAWS.

SECTION 14: TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: FERRIC CHLORIDE SOLUTION
TDG CLASSIFICATION: CLASS 8, CORROSIVE UN2582, PACKING GROUP III

SECTION 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION: E

SECTION 16: OTHER INFORMATION

LEGEND:	ACGIH	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
	CAS #	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
	IARC	INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
	LC	LETHAL CONCENTRATION
	LD	LETHAL DOSE
	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
	N/AP.	NOT APPLICABLE
	N/AV.	NOT AVAILABLE
	NIOSH	NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
	NTP	NATIONAL TOXICOLOGICAL PROGRAM
	TDG	TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS
	TLV	THRESHOLD LIMIT VALUE
	WHMIS	WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

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