



KENCRO

CHEMICALS

PRODUCT : FERRIC CHLORIDE SOLUTION

SECTION 1 : PRODUCT INFORMATION

T.D.G. CLASSIFICATION	CORROSIVE MATERIAL, 8
UN NUMBER	2582
PACKING GROUP	III
PRODUCT NAME	FERRIC CHLORIDE SOLUTION
WHMIS CLASSIFICATION	E
CHEMICAL FORMULA	FECL ₃
MOLECULAR WEIGHT	162.2
CHEMICAL FAMILY	INORGANIC SALT SOLUTION
MATERIAL USE	TREATMENT OF SEWAGE AND INDUSTRIAL WASTES, ETCHING AGENT, DISINFECTANT, PIGMENT, FEED ADDITIVE, WATER PURIFICATION, COAGULANT

SECTION 2: HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	T.L.V.	C.A.S. #	LD/50,ROUTE,SPECIE	LC/50,ROUTE,SPECIE
FERRIC CHLORIDE	25-60	1 MG/M ³	7705-08-0	1.3 G/KG	N.AV.
HYDROCHLORIC ACID	0-3	N.AV.	7647-01-0	0.9 G/KG	N.AV.

SECTION 3: PHYSICAL DATA

PHYSICAL STATE	ORANGE-BROWN LIQUID
ODOUR	SLIGHT ODOUR OF IRON/ACID
ODOUR THRESHOLD	N.AV.
VAPOUR PRESSURE (MMHG)	40 @ 35°C
VAPOUR DENSITY (AIR=1)	1.0 = AIR, N/F'
EVAPORATION RATE	1.0, N/F'
BOILING POINT	106°C
FREEZING POINT	N.AV.
PH	<1
SPECIFIC GRAVITY (WATER=1)	1.2 – 1.5
SOLUBILITY IN WATER (% W/W)	COMPLETE
COEFFICIENT OF WATER/OIL DIST.	N.AV.

SECTION 4 : FIRE AND EXPLOSION DATA

FLAMMABILITY	NOT FLAMMABLE
IF YES, UNDER WHICH CONDITIONS?	
EXTINGUISHING MEDIA	WATER SPRAY, FOG, FOAM, DRY CHEMICALS, CARBON DIOXIDE. AGENTS APPROPRIATE FOR SURROUNDING FIRE. WILL NOT BURN. USE MATERIALS APPROPRIATE FOR SURROUNDING FIRE.
SPECIAL PROCEDURES	WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING
FLASH POINT(C), METHOD	COOL EXTERIOR OF STORAGE TANKS. COOL EXPOSED TANKS WITH WATER. N.AP.
AUTO IGNITION TEMPERATURE	N.AP.
T.D.G. FLAM. CLASS	N.AV.
UPPER FLAMMABLE LIMIT (UFL) (% BY VOL)	N.AP.

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LOWER FLAMMABLE LIMIT (LFL) (% BY VOL)	N.AP.
HAZARDOUS COMBUSTION PRODUCTS.	MAY PRODUCE HYDROGEN CHLORIDE
EXPLOSION DATA	
SENSITIVITY TO STATIC DISCHARGE	N.AV.
SENSITIVITY TO IMPACT	N.AV.
RATE OF BURNING	N.AV.
EXPLOSIVE POWER	N.AV.

SECTION 5: REACTIVITY DATA

CHEMICAL STABILITY	
YES	YES
NO, WHICH CONDITIONS?	MAY REACT WITH METAL TO PRODUCE HYDROGEN GAS.

COMPATIBILITY WITH OTHER SUBSTANCES:	
YES	
NO, WHICH ONES?	ALLYL CHLORIDES, SODIUM, POTASSIUM. RAPIDLY CORRODES MOST METALS (TITANIUM IS ONE EXEPTION). MAY GENERATE FLAMMABLE, POTENTIALLY EXPLOSIVE HYDROGEN GAS. AVOID CONTACT WITH NYLON, ALUMINUM/ALUMINUM ALLOYS, CARBON STEEL, STAINLESS STEEL, AND COPPER/COPPER ALLOYS.

HAZARDOUS POLYMERIZATION CONDITIONS TO AVOID	WILL NOT OCCUR
HAZARDOUS PRODUCTS OF DECOMPOSITION	AVOID CONTACT WITH STRONG ALKALIS AND OXIDIZERS HYDROGEN CHLORIDE

SECTION 6: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY	
SKIN CONTACT	VAPOURS, MISTS, AND LIQUIDS ARE CORROSIVE OR IRRITATING. SKIN CONTACT MAY CAUSE SKIN IRRITATION WITH DISCFORMORT OR RASH, SKIN BURN, OR ULCERATION. FERRIC CHLORIDE HAS BEEN INFREQUENTLY ASSOCIATED WITH SKIN SENSITIZATION IN HUMANS.
SKIN ABSORPTION	N.AV.
EYE CONTACT	CONTACT OF LIQUID MAY CAUSE EYE DAMAGE. HUMAN HEALTH EFFECTS OF OVEREXPOSURE BY EYE CONTACT MAY INLCUDE DISCOLORATION OF EYE TISSUES, EYE IRRITATION AND DISCOMFORT, TEARING AND BLURRING VISION, OR EYE CORROSION WITH CORNEAL OR JUNJUNCTIVAL ULCERATION.
INHALATION	VAPOURS AND MISTS MAY BE CORROSIVE TO THE RESPIRATORY TRACT. OVEREXPOSURE BY INHALATION MAY RESULT IN IRRITATION OF THE UPPER RESPIRATORY PASSAGES WITH COUGHING.
INGESTION	VAPOURS, MISTS AND LIQUIDS ARE CORROSIVE TO THE MOUTH, THROAT AND DIGESTIVE SYSTEM. REPEATED INGESTION OF SUBLETHAL DOSES MAY LEAD TO EXCESSIVE DEPOSITION IN THE TISSUES ACCOMPANIED BY PANCREATIC AND LIVER DAMAGE. INGESTION IN HIGHER DOSES MAY LEAD TO ABNORMAL LIVER FUNCTION WITH NAUSEA OR VOMITING, REDUCED APPETITE, ABDOMINAL PAIN, LETARGY, TARRY STOOLS, DIARRHEA, FASH AND WEEK PULSE, HYPERTENSION, DEHYDRATION, ACIDOSIS, AND COMMON. 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 WITH CYANOSIS, PULMONARY EDEMA, SHOCK, CONVULSIONS, ACIDOSIS, FEVER, AND DEATH.
EFFECTS OF ACUTE EXPOSURE	IRRITATION, BURNS - REFER TO ROUTE OF ENTRY.
EFFECTS OF CHRONIC EXPOSURE	EYE CORROSION WITH CORNEAL ULCERATION. WILL IRRITATE MOUTH, NOSE, THROAT, AND PRODUCE NAUSEA, VOMITING, SHORTNESS OF BREATH, ALBUMINURIA, AND NEMATURIA.
LD 50 MATERIAL, SPECIES & ROUTE	SEE SECTION II
LC 50 MATERIAL, SPECIES &	SEE SECTION II

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ROUTE	
EXPOSURE LIMIT OF MATERIAL	SEE SECTION II
IRRITANCY OF MATERIAL	EXTREMELY IRRITATING TO EYES, SKIN, RESPIRATORY TRACT AND DIGESTIVE SYSTEM. INDIVIDUALS WITH PRE-EXISTING DISEASES OF THE LIVER MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF REPEATED EXPOSURES.
SENSITIZING CAPABILITY OF MATERIAL	N.AP.
CARCINOGENICITY OF MATERIAL	ANIMAL TESTS DEMONSTRATE NO CARCINOGENICITY. NONE OF THE COMPONENTS OF THIS MATERIAL ARE LISTED AS A CARCINOGEN BY IARC, NTP, OSHA, OR ACGIH.
REPRODUCTIVE EFFECTS	N.AV.
TERATOGENICITY	N.AV.
MUTAGENICITY	N.AV.
SYNERGISTIC MATERIALS	N.AV.

SECTION 7 : PREVENTATIVE MEASURES

GLOVES/TYPE	WEAR IMPERVIOUS RUBBER GLOVES
RESPIRATORY/TYPE	USE A NIOSH/OSHA APPROVED RESPIRATOR WITH A DUST/MIST CARTRIDGE IF THERE IS POTENTIAL OF EXPOSURE TO MISTS IN EXCESS OF APPLICABLE LIMITS.
EYE/TYPE	SPLASH PROOF CHEMICAL GOGGLES WITH SIDE SHIELD. WHERE A FACE SHIELD IF THE POSSIBILITY OF MATERIAL SPLASHING OR SPRAYING EXISTS. DO NOT WEAR CONTACT LENSES
FOOTWEAR/TYPE	RUBBER BOOTS
CLOTHING /TYPE	WEAR IMPERVIOUS PROTECTIVE CLOTHING; APRON, HOOD, PANTS JACKET.
OTHER/TYPE	EYE BATH AND SAFETY SHOWER. FACE SHIELD
ENGINEERING CONTROLS	LOCAL EXHAUST
LEAK/SPILL	WEAR SUITABLE PROTECTIVE CLOTHING AND EYE PROTECTION TO PREVENT SKIN AND EYE CONTACT. CONTAIN SPILL IN ORDER TO PREVENT CONTAMINATION OF WATER WAY. NEUTRALIZE WITH LIME OR SODA ASH. <u>CAUTION:</u> HEAT AND GASES MAY BE GENERATED DURING NEUTRALIZATION. ADD LIME OR SODA ASH SLOWLY. AVOID BREATHING GASES. FLUSH AREA WITH WATER. 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). <u>CAUTION:</u> LIMESTONE AND SODA ASH WILL EVOLVE CO ₂ . VENTILATION SHOULD BE PROVIDED IN ENCLOSED AREAS. DIKE AROUND SPILL TO PREVENT SPREADING, AND USE ABSORBENT MATERIAL TO PICK UP SPILL.
WASTE DISPOSAL IS	IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL AND FEDERAL REGULATIONS. IT THE RESPONSIBILITY OF THE USER TO DETERMINE WHETHER A SUBSTANCE SHOULD BE CLASSIFIED AS A HAZARDOUS WASTE AT THE TIME OF DISPOSAL. THIS IS DUE TO THE FACT THAT PRODUCT USE, TRANSFORMATION, SYNTHESIS, MIXTURES, ETC. MAY CHANGE THE NATURE OF THE PRODUCT.
HANDLING PROCEDURES AND EQUIPMENT	WEAR SAFETY EQUIPMENT. PRODUCT IS CORROSIVE TO MOST METALS EXCEPT TITANIUM. AVOID ALL SKIN CONTACT AND GETTING IN EYES. PROTECT CONTAINER FROM PHYSICAL DAMAGE. KEEP CONTAINER CLOSED AND DRY. EMPTIED CONTAINER MAY RETAIN VAPOUR AND PRODUCT RESIDUE. MAINTAIN GOOD PERSONAL HYGIENE.
STORAGE	STORE IN RUBBER LINED OR POLYTHENE DRUMS. STORE AWAY FROM HEAT AND OXIDIZING AGENTS.
SPECIAL SHIPPING INSTRUCTIONS	SEE SECTION 1 TDG CLASSIFICATION

SECTION 8 : FIRST AID MEASURES

INSTRUCTIONS

- SKIN:** RINSE WITH WATER AND WASH WITH SOAP AND WATER IMMEDIATELY AFTER EXPOSURE. REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE.
- EYES:** TIME IS OF THE ESSENCE. IF THIS CHEMICAL GETS IN THE EYES IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER AND CONTINUE TO FLUSH FOR 15 MINUTES WHILE OCCASIONALLY LIFTING THE UPPER AND LOWER EYELIDS. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

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INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS OF THIS CHEMICAL MOVE PERSON TO FRESH AIR AT ONCE. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.

INGESTION: IF THIS CHEMICAL IS SWALLOWED DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH IF VICTIM IS RAPIDLY LOSING CONSCIOUSNESS OR IS UNCONSCIOUS OR CONVULSING. RINSE MOUTH THOROUGHLY WITH WATER. HAVE VICTIM DRINK 200-400 MLS OF WATER TO DILUTE THEN AN ANTACID. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

SECTION 9 : PREPARATION INFORMATION

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DATE JUNE 2008

LEGEND:

ACGIH	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
CAS #	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
IARC	INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
LFL	LOWER FLAMMABLE LIMIT
N.AP.	NOT APPLICABLE
N. AV.	NOT AVAILABLE
N/F	NONE FOUND
NIOSH	NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
T.D.G.	TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS
TLV	THRESHOLD LIMIT VALUE
UFL	UPPER FLAMMABLE LIMIT
WHMIS	WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

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