



KENCRO

CHEMICALS

HYDROCHLORIC ACID – REAGENT GRADE

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT IDENTIFIER: HYDROCHLORIC ACID – REAGENT GRADE
CHEMICAL FAMILY: INORGANIC ACIDS, MINERAL ACIDS
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 INHALATION (RAT)	LD50 ORAL (RABBIT)
HYDROGEN CHLORIDE	7647-01-0	33 - 40	3124ppm/1H	900mg/kg
WATER	7732-18-5	60 - 67	---	---

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

POISON! DANGER! CORROSIVE.
LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE.
MAY BE FATAL IF SWALLOWED OR INHALED.

SIGNS AND SYMPTOMS OF SHORT-TERM EXPOSURE:

SKIN CONTACT: CORROSIVE! CAN CAUSE REDNESS, PAIN AND SEVERE SKIN BURNS. CONCENTRATED SOLUTIONS CAUSE DEEP ULCERS AND DISCOLOUR SKIN. PERSON WITH A PRE-EXISTING SKIN DISORDER MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.

SKIN ABSORPTION: N/A.

EYE CONTACT: CORROSIVE! VAPOURS ARE IRRITATING AND MAY CAUSE DAMAGE TO THE EYES. CONTACT MAY CAUSE SEVERE BURNS AND PERMANENT EYE DAMAGE. PERSON WITH A PRE-EXISTING EYE DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.

INHALATION: CORROSIVE! INHALATION OF VAPOURS CAN CAUSE COUGHING, CHOKING, INFLAMMATION OF THE NOSE, THROAT, AND UPPER RESPIRATORY TRACT, AND IN SEVERE CASES, PULMONARY EDEMA, CIRCULATORY FAILURE, AND DEATH.

INGESTION: CORROSIVE! SWALLOWING HYDROCHLORIC ACID CAN CAUSE IMMEDIATE PAIN AND BURNS OF THE MOUTH, THROAT, ESOPHAGUS AND GASTROINTESTINAL TRACT. MAY CAUSE NAUSEA, VOMITING AND DIARRHEA. SWALLOWING MAY BE FATAL.

POTENTIAL CHRONIC HEALTH EFFECTS:
LONG-TERM EXPOSURE TO CONCENTRATED VAPOURS MAY CAUSE EROSION OF TEETH. LONG-TERM EXPOSURES SELDOM OCCUR DUE TO THE CORROSIVE PROPERTIES OF THE ACID.

OTHER IMPORTANT HAZARDS:
PERSONS WITH PRE-EXISTING SKIN DISORDERS OR EYE DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.

SECTION 4: FIRST AID MEASURES

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. WASH CLOTHING BEFORE REUSE. THOROUGHLY CLEAN SHOES BEFORE REUSE. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATE FOR AT LEAST 15 MINUTES, LIFTING LOWER AND UPPER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: DO NOT INDUCE VOMITING! GIVE LARGE QUANTITIES OF WATER OR MILK IF AVAILABLE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

SECTION 5: FIRE FIGHTING MEASURES

FIRE HAZARDS/CONDITION OF FLAMMABILITY:

NON-FLAMMABLE. EXTREME HEAT OR CONTACT WITH METALS CAN RELEASE FLAMMABLE HYDROGEN GAS.

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 CONSIDERED TO BE AN EXPLOSION HAZARD.

SUITABLE EXTINGUISHING MEDIA:

IF INVOLVED IN A FIRE, USE WATER SPRAY. NEUTRALIZE WITH SODA ASH OR SLAKED LIME. USE APPROPRIATE MEDIA TO EXTINGUISH SURROUNDING FIRES.

SPECIAL FIRE-FIGHTING PROCEDURES/EQUIPMENT:

IN THE EVENT OF A FIRE, FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE. STRUCTURAL FIRE FIGHTER'S PROTECTIVE CLOTHING IS INEFFECTIVE FOR FIRES INVOLVING HYDROCHLORIC ACID. STAY AWAY FROM ENDS OF TANKS. COOL TANKS WITH WATER SPRAY UNTIL WELL AFTER FIRE IS OUT.

HAZARDOUS COMBUSTION PRODUCTS:

HYDROGEN AND CHLORINE.

SECTION 6: ACCIDENTAL RELEASE MEASURES

LEAK AND SPILL PROCEDURES:

VENTILATE AREA OF LEAK OR SPILL. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS SPECIFIED IN SECTION 8. ISOLATE HAZARD AREA. KEEP UNNECESSARY AND UNPROTECTED PERSONNEL FROM ENTERING. CONTAIN AND RECOVER LIQUID WHEN POSSIBLE. NEUTRALIZE WITH ALKALINE MATERIAL (SODA ASH, LIME), THEN ABSORB WITH AN INERT MATERIAL (E.G. VERMICULITE, DRY SAND, EARTH), AND PLACE IN A CHEMICAL WASTE CONTAINER. DO NOT USE COMBUSTIBLE MATERIALS, SUCH AS SAW DUST. DO NOT FLUSH TO SEWER! REPORT SPILLS AND LEAKS IN ACCORDANCE WITH APPLICABLE REGIONAL, NATIONAL AND LOCAL LAWS AND REGULATIONS.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING PROCEDURES:

PROTECT FROM PHYSICAL DAMAGE. KEEP OUT OF DIRECT SUNLIGHT AND AWAY FROM HEAT, WATER, AND INCOMPATIBLE MATERIALS. DO NOT WASH OUT CONTAINER AND USE IT FOR OTHER PURPOSES. WHEN DILUTING, THE ACID SHOULD ALWAYS BE ADDED SLOWLY TO WATER AND IN SMALL AMOUNTS. NEVER USE HOT WATER AND NEVER ADD WATER TO THE ACID. WATER ADDED TO ACID CAN CAUSE UNCONTROLLED BOILING AND SPLASHING.

STORAGE REQUIREMENTS:

STORE IN A COOL, DRY, VENTILATED STORAGE AREA WITH ACID RESISTANT FLOORS AND GOOD DRAINAGE. WHEN OPENING METAL CONTAINERS, USE NON-SPARKING TOOLS BECAUSE OF THE POSSIBILITY OF HYDROGEN GAS BEING PRESENT. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (VAPOURS, LIQUID); OBSERVE ALL WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT.

INCOMPATIBLE MATERIALS:

A STRONG MINERAL ACID, CONCENTRATED HYDROCHLORIC ACID IS INCOMPATIBLE WITH MANY SUBSTANCES AND HIGHLY REACTIVE WITH STRONG BASES, METALS, METAL OXIDES, HYDROXIDES, AMINES, CARBONATES AND OTHER ALKALINE MATERIALS. INCOMPATIBLE WITH MATERIALS SUCH AS CYANIDES, SULFIDES, SULFITES AND FORMALDEHYDE.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS				
INGREDIENTS	ACGIH TLV		OSHA PEL	
			PEL	STEL
HYDROGEN CHLORIDE	2 PPM (CEILING)		5 PPM (CEILING)	N/AV.

SEE COMPOSITION/INFORMATION ON INGREDIENTS, SECTION 2.

ENGINEERING CONTROLS:

A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE CONTAMINANT AT ITS SOURCE, PREVENTING DISPERSION OF IT INTO THE GENERAL WORK AREA.

GLOVES/TYPE:

RUBBER OR NEOPRENE GLOVES AS NEEDED IN AREAS OF UNUSUAL EXPOSURE TO PREVENT SKIN CONTACT.

RESPIRATORY/TYPE:

IF EXPOSURE LIMIT IS EXCEEDED, A FULL FACEPIECE RESPIRATOR WITH AN ACID GAS CARTRIDGE MAY BE WORN UP TO 50 TIMES THE EXPOSURE LIMIT OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. AIR PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES.

EYE/TYPE:

CHEMICAL SAFETY GOGGLES AND/OR A FULL FACE SHIELD WHERE SPLASHING IS POSSIBLE.

FOOTWEAR/TYPE:

IMPERVIOUS BOOTS AS NEEDED IN AREAS OF UNUSUAL EXPOSURE TO PREVENT SKIN CONTACT.

CLOTHING/TYPE:

ADDITIONAL PROTECTION INCLUDING APRON OR COVERALLS, AS NEEDED IN AREAS OF UNUSUAL EXPOSURE TO PREVENT SKIN CONTACT.

OTHER/TYPE:

MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
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PHYSICAL STATE:	LIQUID	APPEARANCE:	COLOURLESS, FUMING LIQUID.
ODOUR:	PUNGENT ODOUR OF HYDRGEN CHLORIDE.		
ODOUR THRESHOLD:	N/AV.		
PH:	1.0	BOILING POINT:	53°C(127°F)
SPECIFIC GRAVITY:	1.18	MELTING/FREEZING POINT:	-74°C(-101°F)
COEFFICIENT OF WATER/OIL		SOLUBILITY IN WATER:	COMPLETELY SOLUBLE
DISTRIBUTION:	N/AV.	VAPOUR DENSITY (AIR=1):	NOT FOUND
EVAPOURATION RATE:	NOT FOUND	VAPOUR PRESSURE (mmHg):	190
VOLATILITY:	100%		
MOLECULAR WEIGHT:	36.46		
MOLECULAR FORMULA:	HCL		

SECTION 10: REACTIVITY AND STABILITY DATA
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STABILITY AND REACTIVITY:

STABLE UNDER NORMAL CONDITIONS OF USE AND STORAGE.

CONDITIONS TO AVOID:

HEAT AND DIRECT SUNLIGHT. CONTAINERS MAY BURST WHEN HEATED.

HAZARDOUS DECOMPOSITION PRODUCTS:

WHEN HEATED TO DECOMPOSITION, EMITS TOXIC HYDROGEN CHLORIDE FUMES AND WILL REACT WITH WATER OR STEAM TO PRODUCE HEAT AND TOXIC AND CORROSIVE FUMES. THERMAL OXIDATIVE DECOMPOSITION PRODUCES TOXIC CHLORINE FUMES AND EXPLOSIVE HYDROGEN GAS.

SECTION 11: TOXICOLOGICAL INFORMATION
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TOXICOLOGICAL DATA: NO SPECIFIC DATA.

CARCINOGENIC STATUS: NOT CLASSIFIABLE AS A HUMAN CARCINOGEN.

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:
REPEATED EXPOSURE TO LOW CONCENTRATIONS OF ACID MIST OR VAPOUR MAY CAUSE REDNESS, SWELLING AND PAIN (DERMATITIS). EXPOSURE TO LOW CONCENTRATION OF ACID MIST OR VAPOUR BY INHALATION MAY CAUSE BLEEDING OF NOSE AND GUMS, BRONCHITIS, STOMACH PAIN (GASTRITIS), AND BROWNISH DISCOLOURATION AND DAMAGE TO TOOTH ENAMEL. DENTAL EROSION BECOMES MORE SEVERE WITH INCREASED EXPOSURE.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS:
THE PRODUCT SHOULD NOT BE ALLOWED TO ENTER DRAINS OR WATER COURSES, OR BE DEPOSITED WHERE IT CAN AFFECT GROUND OR SURFACE WATERS. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS NOT EXPECTED TO BIODEGRADE.

IMPORTANT ENVIRONMENTAL CHARACTERISTICS:
NO INFORMATION AVAILABLE.

ECOTOXICOLOGICAL: THIS MATERIAL IS EXPECTED TO BE TOXIC TO AQUATIC LIFE.

SECTION 13: DISPOSAL CONSIDERATIONS

HANDLING FOR DISPOSAL: THE GENERATION OF WASTE SHOULD BE AVOIDED OR MINIMIZED WHEREVER POSSIBLE. THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY. AVOID DISPERSAL OF SPILLED MATERIAL AND RUNOFF AND CONTACT WITH SOIL, WATERWAYS, DRAINS AND SEWERS. EMPTY CONTAINERS OR LINERS MAY RETAIN SOME PRODUCT RESIDUES. DISPOSE OF SURPLUS AND NON-RECYCLABLE PRODUCTS VIA A LICENSED WASTE DISPOSAL CONTRACTOR.

METHOD OF DISPOSAL: WHATEVER CAN BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE HANDLED AS HAZARDOUS WASTE AND SENT TO AN APPROVED WASTE FACILITY. DISPOSAL SHOULD BE IN ACCORDANCE WITH APPLICABLE REGIONAL, NATIONAL AND LOCAL LAWS AND REGULATIONS.

SECTION 14: TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: HYDROCHLORIC ACID
TDG CLASSIFICATION: UN1789, HYDROCHLORIC ACID, CLASS 8, PACKING GROUP II

SECTION 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION: CLASS E: CORROSIVE MATERIAL

SECTION 16: OTHER INFORMATION

LEGEND:	ACGIF	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
	CAS #	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
	LC	LETHAL CONCENTRATION
	LD	LETHAL DOSE
	N/AP.	NOT APPLICABLE
	N/AV.	NOT AVAILABLE
	NIOSH	NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
	PEL	PERMISSIBLE EXPOSURE LIMIT
	STEL	SHORT TERM EXPOSURE LIMIT
	TDG	TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS
	TLV	THRESHOLD LIMIT VALUE
	WHMIS	WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

PREPARED BY: KENCRO CHEMICALS LIMITED
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MSDS PREPARATION DATE: (DD/MM/YYYY)
01/06/2011

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