



KENCRO

CHEMICALS

PRODUCT : HYDROCHLORIC ACID (REAGENT GRADE)

SECTION 1: PRODUCT INFORMATION

T.D.G. CLASSIFICATION	8
UN NUMBER	1789
PACKING GROUP	II
PRODUCT NAME	HYDROCHLORIC ACID - REAGENT GRADE
SYNONYMS	MURIATIC ACID, HYDROGEN CHLORIDE SOLUTION
WHMIS CLASSIFICATION	D1A, E
CHEMICAL FORMULA	HCL
MOLECULAR WEIGHT	36.46
CHEMICAL FAMILY	INORGANIC ACIDS, MINERAL ACIDS

SECTION 2: HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	T.L.V.	C.A.S. #	LD/50,ROUTE,SPECIE	LC/50,ROUTE,SPECIE
HYDROCHLORIC ACID	30-40	7 (5 PPM)	7641-01-0	900 MG/KG (ORAL, RAT)	3124 PPM 1 HOUR (INHALATION,RAT)
NON-HAZARDOUS: WATER	60-70		7732-18-5		

SECTION 3: PHYSICAL DATA

APPEARANCE	CLEAR, COLORLESS, FUMING,
PHYSICAL STATE	LIQUID
ODOUR	PUNGENT ODOUR
ODOUR THRESHOLD	N.AV.
VAPOR PRESSURE (MMHG)	N.AP.
VAPOR DENSITY (AIR=1)	N.AP.
EVAPORATION RATE	N.AP.
BOILING POINT	149°C
FREEZING POINT	-25°C
PH	1.0
SPECIFIC GRAVITY (WATER=1)	1.18
SOLUBILITY IN WATER (% W/W)	MISCIBLE IN ALL PROPORTIONS WITH SLIGHT EVOLUTION OF HEAT
COEFFICIENT OF WATER/OIL DIST.	N.AV.

SECTION 4: FIRE AND EXPLOSION DATA

FLAMMABILITY	NOT FLAMMABLE
IF YES, UNDER WHICH CONDITIONS?	
EXTINGUISHING MEDIA	IF INVOLVED IN FIRE, USE WATER SPRAY. NEUTRALIZE WITH SODA ASH OR SLAKED LIME. USE APPROPRIATE MEDIA TO EXTINGUISH SURROUNDING FIRES
SPECIAL PROCEDURES	IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE. STRUCTURAL FIREFIGHTER'S PROTECTIVE CLOTHING IS INEFFECTIVE FOR FIRES INVOLVING HYDROCHLORIC ACID. FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN

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FLASH POINT(C), METHOD	POSITIVE PRESSURE MODE. MOVE CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE WATER TO KEEP FIRE EXPOSED CONTAINERS COOL
AUTO IGNITION TEMPERATURE	NON-FLAMMABLE
UPPER FLAMMABLE LIMIT (UFL) (% BY VOL)	N.AP.
LOWER FLAMMABLE LIMIT (LFL) (% BY VOL)	N.AP.
HAZARDOUS COMBUSTION PRODUCTS	HYDROGEN CHLORIDE, HYDROGEN, CHLORINE
FIRE AN EXPLOSION HAZARDS	REACTS WITH MOST METALS TO PRODUCE HYDROGEN GAS, WHICH CAN FORM AN EXPLOSIVE MIXTURE WITH AIR. PRODUCES HYDROGEN CHLORIDE & HYDROGEN GAS.
EXPLOSION DATA	
SENSITIVITY TO STATIC DISCHARGE	NONE IDENTIFIED
SENSITIVITY TO IMPACT	NONE IDENTIFIED
RATE OF BURNING	N.AP.
EXPLOSIVE POWER	NOT CONSIDERED AN EXPLOSION HAZARD.

SECTION 5: REACTIVITY DATA

CHEMICAL STABILITY	
YES	STABLE UNDER ORDINARY CONDITIONS OF USE & STORAGE.
NO, WHICH CONDITIONS?	CONTAINERS MAY BURST WHEN HEATED.
COMPATIBILITY WITH OTHER SUBSTANCES:	
YES	
NO, WHICH ONES?	MOST COMMON METALS, WATER, AMINES, METAL OXIDES, HYDROXIDES, ACETIC ANHYDRIDE, PROPIOLACTONE, VINYL ACETATE, MERCURIC SULFATE, CALCIUM PHOSPHIDE, FORMALDEHYDE, ALKALIES, CARBONATES, STRONG BASES, SULPHURIC ACID, SULPHIFIDES, SULFITES, CHLOROSULFONIC ACID,
REACTIVITY CONDITIONS	CYANIDES.
HAZARDOUS POLYMERIZATION	REACTS WITH METALS TO PRODUCE HYDROGEN GAS
CONDITIONS TO AVOID	WILL NOT OCCUR
HAZARDOUS PRODUCTS OF DECOMPOSITION	HIGH TEMPERATURES, DIRECT SUNLIGHT, MOISTURE HYDROGEN CHLORIDE, HYDROGEN, CHLORINE WHEN HEATED TO DECOMPOSITION, EMITS TOXIC HYDROGEN CHLORIDE FUMES AND WILL REACT WITH WATER OR STREAM TO PRODUCE HEAT AND TOXIC AND CORROSIVE FUMES. THERMAL OXIDATIVE DECOMPOSITION PRODUCES TOXIC CHLORINE FUMES AND EXPLOSIVE HYDROGEN GAS.

SECTION 6: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY	
SKIN CONTACT	CORROSIVE! LIQUID CAN CAUSE REDNESS, PAIN, AND SEVERE SKIN BURNS. CONCENTRATED SOLUTIONS CAUSE DEEP ULCERS AND DISCOLOR SKIN. PERSON WITH A PRE-EXISTING SKIN DISORDER MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.
SKIN ABSORPTION	N.A.V.
EYE CONTACT	CORROSIVE! LIQUID MAY CAUSE SEVERE BURNS & PERMANENT EYE DAMAGE. PERSONS WITH A PRE-EXISTING EYE DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.
INHALATION	CORROSIVE! INHALATION OF VAPORS MAY CAUSE COUGHING, CHOKING AND DIFFICULTY BREATHING, PULMONARY EDEMA, CIRCULATORY SYSTEM COLLAPSE, DAMAGE TO UPPER RESPIRATORY SYSTEM COLLAPSE, AND DEATH.
INGESTION	CORROSIVE! IS HARMFUL AND EVEN FATAL, MAY CAUSE SEVERE BURNS OF THE MOUTH, THROAT, AND STOMACH, NAUSEA, VOMITING AND DIARRHEA.
EFFECTS OF ACUTE EXPOSURE	REFER TO ROUTE OF ENTRY
EFFECTS OF CHRONIC EXPOSURE	LONG-TERM EXPOSURE TO CONCENTRATED VAPORS MAY CAUSE EROSION OF TEETH. LONG-TERM EXPOSURES SELDOM OCCUR DUE TO THE CORROSIVE PROPERTIES OF THE ACID.
LD 50 MATERIAL, SPECIES & ROUTE	SEE SECTION II

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LC 50 MATERIAL, SPECIES & ROUTE	SEE SECTION II
EXPOSURE LIMIT OF MATERIAL	OSHA PERMISSIBLE EXPOSURE LIMIT (PEL): 5 ppm CEILING ACGIH THRESHOLD LIMIT VALUE (TLV): 5 ppm CEILING
IRRITANCY OF MATERIAL	SEE ABOVE
CARCINOGENICITY OF MATERIAL	THE INGREDIENTS OF THIS PRODUCT ARE NOT LISTED AS CARCINOGENS BY NTP (NATIONAL TOXICOLOGY PROGRAM) NOR THE Z-LIST, NOT REGULATED AS CARCINOGENS BY OSHA (OCCUPATIONS SAFETY AND HEALTH ADMINISTRATION), AND HAVE NOT BEEN EVALUATED BY ACGIH (AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS). IARC CATEGORY: 3
MUTAGENICITY DATA	NO INFORMATION AVAILABLE. NO ADVERSE MUTAGENIC EFFECTS ARE ANTICIPATED
TERATOGENICITY DATA	NO INFORMATION AVAILABLE. NO ADVERSE TERATOGENIC EFFECTS ANTICIPATED
REPRODUCTIVE EFFECTS	NO INFORMATION AVAILABLE. NO ADVERSE REPRODUCTIVE EFFECTS ANTICIPATED
SYNERGISTIC MATERIALS	NONE KNOWN

SECTION 7: PREVENTATIVE MEASURES

GLOVES/TYPE	NEOPRENE OR RUBBER GLOVES ARE RECOMMENDED
RESPIRATORY/TYPE	WARNING! AIR PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES. RESPIRATORY PROTECTION REQUIRED IF AIRBORNE CONCENTRATION EXCEEDS TLV. AT CONCENTRATIONS UP TO 100 PPM, A CHEMICAL CARTRIDGE RESPIRATOR WITH ACID CARTRIDGE IS RECOMMENDED. ABOVE THIS LEVEL, A SELF-CONTAINED BREATHING APPARATUS IS ADVISED.
EYE/TYPE	SAFETY GOGGLES AND FACE SHIELD
FOOTWEAR/TYPE	IMPERVIOUS BOOTS
CLOTHING /TYPE	UNIFORM, PROTECTIVE SUIT, APRON, COVERALLS.
OTHER/TYPE	EYE BATH AND SAFETY SHOWER AND QUICK DRENCH FACILITIES IN WORK AREA.
ENGINEERING CONTROLS	USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET TLV REQUIREMENTS
LEAK/SPILL	WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. STOP LEAK IF YOU CAN DO SO WITHOUT RISK. VENTILATE AREA. NEUTRALIZE SPILL WITH SODA ASH LIME OR INERT MATERIAL (E.G., SAW DUST). WITH CLEAN SHOVEL, CAREFULLY PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND COVER, FROM AREA. FLUSH SPILL AREA WITH WATER. DO NOT FLUSH TO SEWER.
REMOVE WASTE DISPOSAL	WHATEVER CAN BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE HANDLED AS HAZARDOUS WASTE AND SENT TO AN APPROVED WASTE FACILITY. PROCESSING, USE OR CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEMENT OPTIONS. CONSULT FEDERAL, PROVINCIAL, STATE AND LOCAL REGULATIONS ON CHEMICAL WASTE DISPOSAL
HANDLING PROCEDURES AND EQUIPMENT	STORE IN A COOL, DRY, VENTILATED STORAGE AREA WITH ACID RESISTANT FLOORS FLOORS AND GOOD DRAINAGE. 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 WOULD 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. 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 (VAPORS, LIQUID); OBSERVE ALL WARNINGS, AND PRECAUTIONS LISTED FOR THE PRODUCT.
STORAGE NEEDS	KEEP CONTAINER TIGHTLY CLOSED. STORE IN CORROSION-PROOF AREA. ISOLATE FROM INCOMPATIBLE MATERIALS. DO NOT STORE NEAR OXIDIZING MATERIALS.
SPECIAL SHIPPING INSTRUCTIONS	SEE SECTION 1 TDG CLASSIFICATION

SECTION 8: FIRST AID MEASURES

INSTRUCTIONS:

CONTACT WITH SKIN: IMMEDIATELY FLUSH AFFECTED AREA WITH RUNNING WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. CONSULT A PHYSICIAN. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

CONTACT WITH EYES: IMMEDIATELY FLUSH EYES WITH RUNNING WATER FOR AT LEAST 15 MINUTES. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

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INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION AND OXYGEN. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

INGESTION: DO NOT INDUCE VOMITING! IF CONSCIOUS, GIVE WATER, MILK OR MILK OF MAGNESIA. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

SECTION 9: PREPARATION INFORMATION

EMERGENCY PHONE NO (613) 996 6666 (CANUTECH)
PREPARED BY KENCRO CHEMICALS LIMITED
(905) 827 4133
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.A.P	NOT APPLICABLE
N. AV	NOT AVAILABLE
NIOSH	NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
NTP	NATIONAL TOXICOLOGY PROGRAM
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL	PERMISSIBLE EXPOSURE LIMIT
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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