



MURSATT CHEMICALS LIMITED
11 REGALCREST COURT
WOODBIDGE; ONTARIO, CANADA; L4L 8P3
(905)-850-8444

PRODUCT: MURIATIC ACID

CODE: MUR0051

Section 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER/SUPPLIER..... MURSATT CHEMICALS LIMITED
11 REGALCREST COURT
WOODBIDGE, ONTARIO
CANADA
L4L 8P3
PREPARED BY..... REGULATORY AFFAIRS
PREPARATION DATE..... Jun01/08
PRODUCT NAME..... MURIATIC ACID
PRODUCT CODE..... MUR0051
CHEMICAL FORMULA..... HCL.
MOLECULAR WEIGHT..... 36.46.
CHEMICAL FAMILY..... INORGANIC ACID.
MATERIAL USE..... PH ADJUSTMENT.
EMERGENCY PHONE NO..... CANUTEC (613)-996-6666.

Section 02: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	%	Exposure Limit	C.A.S.#	LD/50, Route, Species	LC/50 Route, Species
HYDROCHLORIC ACID	31-36	SEE SECTION 11	7647-01-0	SEE SECTION 11	SEE SECTION 11

Section 03: HAZARDS IDENTIFICATION

ROUTE OF ENTRY:
SKIN CONTACT..... CORROSIVE! CONCENTRATED SOLUTIONS MAY CAUSE PAIN AND DEEP AND SEVERE BURNS TO THE SKIN. PROLONGED AND REPEATED EXPOSURE TO DILUTE SOLUTION OFTEN CAUSES IRRITATION, REDNESS, PAIN, DRYING AND CRACKING OF THE SKIN.

SKIN ABSORPTION..... N.AV.
EYE CONTACT..... EXTREMELY CORROSIVE. THIS PRODUCT CAUSES CORNEAL SCARRING AND CLOUDING. GLAUCOMA, CATARACTS AND PERMANENT BLINDNESS MAY OCCUR. LOW CONCENTRATIONS OF VAPOUR OR MIST (10-35 PPM) CAN BE IMMEDIATELY IRRITATING, CAUSING REDNESS.

INHALATION..... CORROSIVE. PRODUCT MAY CAUSE SEVERE IRRITATION OF THE NOSE, THROAT, AND RESPIRATORY TRACT. REPEATED AND/OR PROLONGED EXPOSURES MAY CAUSE PRODUCTIVE COUGH, RUNNING NOSE, BRONCHOPNEUMONIA, PULMONARY EDEMA (FLUID BUILD-UP IN LUNGS), AND REDUCTION OF PULMONARY FUNCTION.

INGESTION..... CORROSIVE. WILL IMMEDIATELY CAUSE SEVERE CORROSION OF AND DAMAGE TO GASTROINTESTINAL TRACT. SYMPTOMS MAY INCLUDE DIFFICULTY IN SWALLOWING, INTENSE THIRST, NAUSEA, VOMITING, DIARRHEA AND IN SEVERE CASES, COLLAPSE AND DEATH.

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

INHALATION, CHRONIC..... SEVERE EXPOSURES (E.G. 1000-2000 PPM), FOR EVEN A FEW MINUTES, CAN CAUSE A LIFE THREATENING ACCUMULATION OF FLUID IN THE LUNGS (PULMONARY EDEMA). SYMPTOMS OF PULMONARY EDEMA SUCH AS SHORTNESS OF BREATH CAN BE DELAYED FOR SEVERAL HOURS AFTER EXPOSURE.

Section 04: FIRST AID MEASURES

GENERAL:..... CORROSIVE EFFECTS ON THE SKIN AND EYES MAY BE DELAYED AND DAMAGE MAY OCCUR WITHOUT THE SENSATION OR ONSET OF PAIN. STRICT ADHERENCE TO FIRST AID MEASURES FOLLOWING ANY EXPOSURE IS ESSENTIAL. SPEED IS ESSENTIAL. OBTAIN IMMEDIATE MEDICAL ATTENTION.

EYE CONTACT..... IMMEDIATELY FLUSH EYES WITH RUNNING WATER FOR A MINIMUM OF 20 MINUTES. HOLD EYELIDS OPEN DURING FLUSHING. IF IRRITATION PERSISTS, REPEAT FLUSHING. OBTAIN MEDICAL ATTENTION IMMEDIATELY. DO NOT TRANSPORT VICTIM UNTIL THE RECOMMENDED FLUSHING PERIOD IS COMPLETED UNLESS FLUSHING CAN BE CONTINUED DURING TRANSPORT.

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Section 04: FIRST AID MEASURES

SKIN CONTACT.....	IMMEDIATELY FLUSH SKIN WITH RUNNING WATER FOR A MINIMUM OF 20 MINUTES. START FLUSHING WHILE REMOVING CONTAMINATED CLOTHING. IF IRRITATION PERSISTS, REPEAT FLUSHING. OBTAIN MEDICAL ATTENTION IMMEDIATELY. DO NOT TRANSPORT VICTIM UNLESS THE RECOMMENDED FLUSHING PERIOD IS COMPLETED OR FLUSHING CAN BE CONTINUED DURING TRANSPORT.
INGESTION.....	IF VICTIM IS ALERT AND NOT CONVULSING, RINSE MOUTH OUT AND GIVE 240-300 ML (1 CUP) OF WATER TO DILUTE MATERIAL. IF MILK IS AVAILABLE, IT MAY BE ADMINISTERED AFTER THE WATER HAS BEEN GIVEN. DO NOT INDUCE VOMITING. IF SPONTANEOUS VOMITING OCCURS, HAVE VICTIM LEAN FORWARD WITH HEAD DOWN TO AVOID BREATHING IN OF VOMITUS, RINSE MOUTH AND ADMINISTER MORE WATER. IMMEDIATELY TRANSPORT VICTIM TO AN EMERGENCY FACILITY. IMMEDIATELY CONTACT LOCAL POISON CONTROL CENTRE.
INHALATION.....	MOVE VICTIM TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION ONLY IF BREATHING HAS STOPPED. DO NOT USE MOUTH-TO-MOUTH METHOD IF VICTIM INGESTED OR INHALED THE SUBSTANCE: INDUCE ARTIFICIAL RESPIRATION WITH THE AID OF A POCKET MASK EQUIPPED WITH A ONE-WAY VALVE OR OTHER PROPER RESPIRATORY MEDICAL DEVICE. GIVE CARDIOPULMONARY RESUSCITATION (CPR) IF THERE IS NO BREATHING AND NO PULSE. OXYGEN ADMINISTRATION MAY BE BENEFICIAL IN THIS SITUATION BUT SHOULD ONLY BE ADMINISTERED BY PERSONNEL TRAINED IN ITS USE. OBTAIN MEDICAL ATTENTION IMMEDIATELY. SYMPTOMS MAY APPEAR UP TO 48 HOURS AFTER EXPOSURE.
NOTES TO PHYSICIAN.....	THIS PRODUCT CONTAINS MATERIAL THAT MAY CAUSE SEVERE PNEUMONITIS IF ASPIRATED. IF INGESTION HAS OCCURRED LESS THAN 2 HOURS EARLIER, CARRY OUT CAREFUL GASTRIC LAVAGE; USE ENDOTRACHEAL CUFF IF AVAILABLE, TO PREVENT ASPIRATION. OBSERVE PATIENT FOR RESPIRATORY DIFFICULTY FROM ASPIRATION PNEUMONITIS. GIVE ARTIFICIAL RESUSCITATION AND APPROPRIATE CHEMOTHERAPY IF RESPIRATION IS DEPRESSED. FOLLOWING EXPOSURE, THE PATIENT SHOULD BE KEPT UNDER MEDICAL REVIEW FOR AT LEAST 48 HOURS AS DELAYED PNEUMONITIS MAY OCCUR. DO NOT ATTEMPT TO NEUTRALIZE THE ACID WITH WEAK BASES SINCE THE REACTION WILL PRODUCE HEAT THAT MAY EXTEND THE CORROSIVE INJURY.

Section 05: FIRE FIGHTING MEASURES

T.D.G. FLAM. CLASS.....	NON FLAMMABLE.
FLAMMABILITY.....	NON FLAMMABLE.
IF YES, UNDER WHICH CONDITIONS?	
EXTINGUISHING MEDIA.....	FOR LARGE FIRES USE EXTINGUISHING AGENTS COMPATIBLE WITH ACID AND APPROPRIATE FOR THE BURNING MATERIAL. AN ALL PURPOSE TYPE AFFF FOAM MAY BE USED ACCORDING TO FOAM MANUFACTURER'S RECOMMENDED TECHNIQUES. THE FOAM SUPPLIER SHOULD BE CONSULTED FOR RECOMMENDATIONS REGARDING FOAM TYPES AND DELIVERY RATES FOR SPECIFIC APPLICATIONS. USE CARBON DIOXIDE OR DRY CHEMICAL MEDIA FOR SMALL FIRES. IF ONLY WATER IS AVAILABLE, USE IT IN THE FORM OF A FOG.
SPECIAL PROCEDURES.....	AS APPROPRIATE FOR SURROUNDING MATERIALS/EQUIPMENT. WATER SPRAY SHOULD BE USED TO COOL CONTAINERS. WATER SPRAY MAY BE USED TO KNOCK DOWN ESCAPING VAPORS. USE SELF CONTAINED BREATHING APPARATUS AND SPECIAL PROTECTIVE CLOTHING. IF TANK, RAIL CAR OR TANK TRUCK IS INVOLVED IN FIRE, ISOLATE FOR 800 METERS (1/2 MILE) IN ALL DIRECTIONS. ALSO, CONSIDER INITIAL EVACUATION FOR 800 METERS (1/2 MILE) IN ALL DIRECTIONS.
FLASH POINT (C), METHOD.....	N.AP.
AUTO IGNITION TEMPERATURE.....	N.AP.
UPPER FLAMMABLE LIMIT (% BY VOL.)....	N.AP.
LOWER FLAMMABLE LIMIT (% BY VOL.)...	N.AP.
EXPLOSION DATA.....	N.AV.
EXPLOSIVE POWER.....	NOT SENSITIVE.
RATE OF BURNING.....	N.AP.
SENSITIVITY TO STATIC DISCHARGE.....	NOT EXPECTED TO BE SENSITIVE TO STATIC DISCHARGE.
SENSITIVITY TO IMPACT.....	NOT EXPECTED TO BE SENSITIVE TO MECHANICAL IMPACT.
HAZARDOUS COMBUSTION PRODUCTS..	HYDROGEN AND CHLORINE.

Section 06: ACCIDENTAL RELEASE MEASURES

LEAK/SPILL.....	RESTRICT ACCESS TO AREA UNTIL COMPLETION OF CLEAN UP. ENSURE TRAINED PERSONNEL CONDUCT CLEAN UP. WEAR ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. DO NOT TOUCH SPILLED MATERIAL. REMOVE ALL IGNITION SOURCES (NO SMOKING, FLARES, SPARKS, OR FLAMES). ALL EQUIPMENT SHOULD BE GROUNDED. VENTILATE AREA. STOP LEAK IF POSSIBLE WITHOUT PERSONAL RISK. SMALL SPILLS: COVER WITH DRY EARTH, SAND, OR
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Section 06: ACCIDENTAL RELEASE MEASURES

LEAK/SPILL..... OTHER NON-COMBUSTIBLE MATERIAL. USE CLEAN NON-SPARKING TOOLS TO COLLECT MATERIAL AND PLACE IT INTO LOOSELY COVERED PLASTIC CONTAINERS FOR LATER DISPOSAL. ISOLATE SPILL OR LEAK AREA IMMEDIATELY FOR AT LEAST 25 - 50 METERS (80 - 60 FEET) IN ALL DIRECTIONS. KEEP UNAUTHORIZED PERSONNEL AWAY. STAY UPWIND. KEEP OUT OF LOW AREAS. PREVENT ENTRY INTO SEWERS AND CONFINED AREAS. DIKE WITH INERT MATERIAL (SAND, EARTH, FOAMED POLYURETHANE, FOAMED CONCRETE, ETC.). CONSIDER IN-SITU NEUTRALIZATION AND DISPOSAL. ABSORB BULK LIQUID WITH FLY ASH OR CEMENT POWDER. NEUTRALIZE WITH RECOMMENDED MATERIALS, TAKING CARE TO AVOID ANY FOAMING OR SPLATTERING THAT MAY OCCUR FROM THE NEUTRALIZATION REACTION OF THE ACID WITH THESE MATERIALS. MAKE SURE ALL LIQUID HAS BEEN THOROUGHLY CONTACTED AND ABSORBED BY THE DRY MATERIALS. TRANSFER ABSORBED SPILL MATERIAL AND ANY CONTAMINATED UNDERLYING SOIL TO A SUITABLE CHEMICAL AND WASTE CONTAINER. ENSURE ADEQUATE DECONTAMINATION OF TOOLS EQUIPMENT FOLLOWING CLEAN UP. WASHING DOWN OF SPILLS WITH WATER IS NOT RECOMMENDED AS THIS TENDS TO SPREAD THE CONTAMINATION AND INCREASES THE LIKELIHOOD OF PERCOLATING THE ACID DOWN THROUGH THE SOIL AND/OR OF UNCONTROLLED FLOW OF ACID INTO SEWERS, STREAMS, OR OTHER WATERS. HYDROCHLORIC ACID LEAKS, OR SPILLS MUST NOT COME IN CONTACT WITH ANY ACID SOLUBLE SULFIDE WASTES (SUCH AS SEWERS) BECAUSE OF THE DANGER OF EVOLVING HYDROGEN SULFIDE GAS. COMPLY WITH FEDERAL, PROVINCIAL/STATE AND LOCAL REGULATIONS ON REPORTING RELEASES.

Section 07: HANDLING AND STORAGE

HANDLING PROCEDURES AND TAKE ALL PRECAUTIONS TO AVOID PERSONAL CONTACT. PREVENT RELEASE OF EQUIPMENT VAPOR OR MIST INTO WORKPLACE AIR. ALWAYS ENSURE ADEQUATE VENTILATION IN HANDLING AREAS. LOCATE SAFETY SHOWER & EYEWASH STATION CLOSE TO CHEMICAL HANDLING AREA. INSPECT CONTAINERS FOR LEAKS BEFORE HANDLING. USE EXTREME CARE WHEN DILUTING WITH WATER. ALWAYS ADD ACID TO WATER. CAUTION: HYDROGEN, A HIGHLY FLAMMABLE GAS, CAN ACCUMULATE TO EXPLOSIVE CONCENTRATIONS INSIDE DRUMS, OR ANY TYPES OF STEEL CONTAINERS OR TANKS UPON STORAGE. STORAGE CONTAINERS SHOULD BE VENTED ON A REGULAR BASIS BY TRAINED PERSONNEL ONLY. LABEL CONTAINERS. KEEP CONTAINERS CLOSED WHEN NOT IN USE. EMPTY CONTAINERS MAY CONTAIN RESIDUES WHICH ARE HAZARDOUS.

STORAGE NEEDS..... STORE IN A COOL, DRY, WELL VENTILATED AREA, OUT OF DIRECT SUNLIGHT, AWAY FROM HEAT SOURCES, AND AWAY FROM INCOMPATIBLE MATERIALS SUCH AS OXIDIZING MATERIALS, REDUCING MATERIALS, AND STRONG BASES. USE CORROSION- RESISTANT STRUCTURAL MATERIALS AND LIGHTING AND VENTILATION SYSTEMS IN THE STORAGE AREA. USE CONTAINERS WHICH ARE SECURELY LABELED AND PROTECTED FROM DAMAGE. STORAGE DRUMS MUST BE COATED WITH AN ACID RESISTANT MATERIAL. RUBBER-LINED STEEL, PVC/FRP, FRP, HASTELLOY C-276, INCONEL 625, AND TANTALUM ARE THE MOST COMMONLY USED CORROSION-RESISTANT MATERIALS OF CONSTRUCTION AT ROOM TEMPERATURE. RUBBER, GLASS, PLASTIC AND CERAMIC WARE ARE ALSO RESISTANT TO CORROSION. VENTED CONTAINERS MUST BE USED AND MUST BE KEPT CLOSED WHEN NOT BEING USED. CONTAINERS SHOULD HAVE A SAFETY RELIEF VALVE. CARE SHOULD BE TAKEN TO RELEASE ANY INTERNAL PRESSURE SLOWLY. USE CORROSION-RESISTANT TRANSFER EQUIPMENT WHEN DISPENSING. LIMIT QUANTITY OF MATERIAL IN STORAGE. RESTRICT STORAGE AREA. POST WARNINGS SIGNS WHEN APPROPRIATE. KEEP STORAGE AREA SEPARATE FROM POPULATED WORK AREAS. INSPECT PERIODICALLY FOR DEFICIENCIES SUCH AS DAMAGE OR LEAKS. STORAGE TANKS SHOULD BE ABOVE GROUND AND SURROUNDED WITH DIKES CAPABLE OF HOLDING ENTIRE CONTENTS. IDEAL STORAGE TEMPERATURE IS 10-27°C. DO NOT EXPOSE SEALED CONTAINERS TO TEMPERATURES ABOVE 40°C. IF STORED INDOORS, BUILDING FLOORS SHOULD BE ACID RESISTANT WITH DRAINS TO A RECOVERY TANK. ELECTRICAL EQUIPMENT SHOULD BE FLAMEPROOF AND PROTECTED AGAINST CORROSIVE ACTION. WOOD AND OTHER ORGANIC MATERIALS SHOULD NOT BE USED ON FLOORS, STRUCTURAL MATERIALS AND VENTILATION SYSTEMS IN THE STORAGE AREA.

Section 08: EXPOSURE CONTROLS/PERSONAL PROTECTION

GLOVES/ TYPE..... GLOVES MADE OF NEOPRENE SHOULD BE IMPERVIOUS UNDER CONDITIONS OF USE.

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Section 08: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY/TYPE.....	A NIOSH/MSHA APPROVED AIR-PURIFYING RESPIRATOR EQUIPPED WITH ACID GAS CARTRIDGES UP TO TEN TIMES THE TLV. AN AIR SUPPLIED RESPIRATOR IF CONCENTRATIONS ARE HIGH OR UNKNOWN. UP TO 50 PPM: CHEMICAL CARTRIDGE RESPIRATOR WITH CARTRIDGE (S) TO PROTECT AGAINST HYDROGEN CHLORIDE; OR GAS MASK WITH CANISTER TO PROTECT AGAINST HYDROGEN CHLORIDE OR OWERED AIR-PURIFYING RESPIRATOR WITH CARTRIDGE(S) TO PROTECT AGAINST HYDROGEN CHLORIDE. OR SUPPLIED AIR RESPIRATOR (SAR); OR FULL FACEPIECE SELF-CONTAINED BREATHING APPARATUS (SCBA).
EYE/TYPE.....	WEAR SPLASH RESISTANT CHEMICAL GOGGLES AND FULL FACE SHIELD. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.
FOOTWEAR/TYPE.....	BOOTS.
CLOTHING/TYPE.....	PROTECTIVE CLOTHING MADE FROM NEOPRENE SHOULD BE IMPERVIOUS UNDER CONDITIONS OF USE, INCLUDING BOOTS, GLOVES, LAB COAT, APRON OR FULL BODY SUIT, AS APPROPRIATE, TO PREVENT SKIN CONTACT.
OTHER/TYPE.....	EYE BATH AND SAFETY SHOWER.
ENGINEERING CONTROLS.....	LOCAL EXHAUST VENTILATION SHOULD BE APPLIED WHEREVER THERE IS AN INCIDENCE OF POINT SOURCE EMISSIONS OR DISPERSION OF REGULATED CONTAMINANTS IN THE WORK AREA. THE MOST EFFECTIVE MEASURES ARE THE TOTAL ENCLOSURE OF PROCESSES AND THE MECHANIZATION OF HANDLING PROCEDURES TO PREVENT ALL PERSONAL CONTACT WITH HYDROCHLORIC ACID. BECAUSE OF THE HIGH POTENTIAL HAZARD ASSOCIATED WITH THIS SUBSTANCE, STRINGENT CONTROL MEASURES SUCH AS ENCLOSURE OR ISOLATION ARE RECOMMENDED WHEN DEALING WITH LARGE QUANTITIES. ELECTRICAL INSTALLATIONS SHOULD BE PROTECTED AGAINST THE CORROSIVE ACTION OF ACID VAPORS. SMOKING SHOULD BE PROHIBITED IN AREAS IN WHICH HYDROCHLORIC ACID IS STORED OR HANDLED. WHERE SUITABLE ENGINEERING CONTROLS ARE NOT IN PLACE OR ARE INADEQUATE, WEAR SUITABLE RESPIRATORY EQUIPMENT.

Section 09: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE.....	COLOURLESS, OR SLIGHTLY YELLOW LIQUID.
ODOUR.....	PUNGENT ODOUR.
ODOUR THRESHOLD.....	<1.
VAPOUR PRESSURE (MMHG).....	20.
VAPOUR DENSITY (AIR=1).....	1.27 (FOR HYDROGEN CHLORIDE GAS).
BY VOLUME.....	N.AV.
BY WEIGHT.....	N.AV.
EVAPORATION RATE.....	N.AV.
BOILING POINT.....	85 C.
FREEZING POINT.....	-40 (C).
PH.....	<1.
SPECIFIC GRAVITY (WATER=1)	
SOLUBILITY IN WATER (% W/W).....	COMPLETELY SOLUBLE IN ALL PROPORTIONS.
COEFFICIENT OF WATER/OIL DIST.....	N.AV.

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY:	
YES.....	STABLE UNDER NORMAL CONDITIONS OF USE.
NO, WHICH CONDITIONS?.....	KEEP AWAY FROM HEAT, FLAMES SPARKS AND OTHER IGNITION SOURCES.
CONDITIONS TO AVOID.....	KEEP AWAY FROM HEAT AND SOURCES OF IGNITION.
COMPATABILITY WITH OTHER SUBSTANCES:	
YES	
NO, WHICH ONES?.....	A STRONG MINERAL ACID, CONCENTRATED HYDROCHLORIC ACID IS INCOMPATIBLE WITH MANY SUBSTANCES AND HIGHLY REACTIVE WITH STRONG BASES, METALS, ETALOXIDES, HYDROXIDES, AMINES, CARBONATES AND OTHER ALKALINE MATERIALS. INCOMPATIBLE WITH MATERIALS SUCH AS CYANIDES, SULFIDES, SULFITES, SULFURIC ACID, AND FORMALDEHYDE. CONTACT WITH METALS MAY PRODUCE FLAMMABLE HYDROGEN GAS. WHEN DILUTING, ADD ACID TO WATER. DO NOT ADD WATER TO ACID. COMBUSTIBLE MATERIALS. CYANIDES, SULFIDES, FORMALDEHYDE.
REACTIVITY CONDITIONS:.....	CONTACT WITH INCOMPATIBLES. EXCESSIVE HEAT, SPARKS AND OPEN FLAME. CONTAMINATION OF ANY KIND. REACTS VIOLENTLY AND EXPLOSIVELY WITH A WIDE VARIETY OF ORGANIC AND INORGANIC CHEMICALS INCLUDING ALCOHOL, CARBIDES, CHLORATES, PICRATES, NITRATES, METALS AND OTHER COMBUSTIBLE MATERIALS.
HAZARDOUS PRODUCTS OF DECOMPOSITION.....	WHEN HEATED TO DECOMPOSITION, EMITS TOXIC HYDROGEN CHLORIDE FUMES. THERMAL OXIDATIVE DECOMPOSITION PRODUCES TOXIC CHLORINE FUMES AND EXPLOSIVE HYDROGEN GAS.
HAZARDOUS POLYMERIZATION.....	WILL NOT OCCUR.

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Section 11: TOXICOLOGICAL INFORMATION

EXPOSURE LIMIT OF MATERIAL..... 5 PPM.
 LC 50 OF MATERIAL, SPECIES & ROUTE.. N.AV.
 LD 50 OF MATERIAL, SPECIES & ROUTE.. 900 MG/KG (ORAL, RABBIT).
 CARCINOGENICITY OF MATERIAL..... THE INGREDIENTS OF THIS PRODUCT ARE NOT CLASSIFIED AS CARCINOGENIC BY ACGIH (AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS) OR IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER), NOT REGULATED AS CARCINOGENS BY OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION), AND NOT LISTED AS CARCINOGENS BY NTP (NATIONAL TOXICOLOGY PROGRAM).
 REPRODUCTIVE EFFECTS..... FEMALE RATS WERE EXPOSED TO 450 MG/M3 FOR 1 HOUR EITHER PRIOR TO MATING OR ON DAY 9 OF PREGNANCY. DEVELOPMENT EFFECTS WERE OBSERVED IN THE OFFSPRING. HOWEVER, THIS EXPOSURE CAUSED TOXIC EFFECTS, INCLUDING MORTALITY IN MOTHERS.
 IRRITANCY OF MATERIAL..... SEE SECTION 03.
 SENSITIZING CAPABILITY OF MATERIAL. N.AV.
 SYNERGISTIC MATERIALS..... NONE KNOWN.
 MUTAGENICITY..... N.AV. THE SIGNIFICANCE OF THE POSITIVE REPORTS IS QUESTIONABLE SINCE PH (ACIDITY) CAN INFLUENCE THE RESULTS OF SHORT-TERM TESTS.
 TERATOGENICITY..... NO INFORMATION IS AVAILABLE AND NO ADVERSE TERATOGENIC/EMBRYOTOXIC EFFECTS ARE ANTICIPATED.

Section 12: ECOLOGICAL CONSIDERATIONS

ECOLOGICAL INFORMATION..... N.AV.

Section 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL..... DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

Section 14: TRANSPORT INFORMATION

TDG CLASSIFICATION..... 8.
 PROPER SHIPPING NAME..... HYDROCHLORIC ACID.
 UN NUMBER..... 1789.
 PACKING GROUP..... II.
 SPECIAL SHIPPING INSTRUCTIONS..... CORROSIVE MATERIAL.

Section 15: REGULATORY INFORMATION

CPR COMPLIANCE..... THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.
 WHMIS CLASSIFICATION..... D1A. E.

Section 16: OTHER INFORMATION

N.AP.=NOT APPLICABLE
 N.AV.=NOT AVAILABLE
 OTHER INFORMATION..... THE DATA IN THIS MSDS RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN AND DOES NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PROCESS. THIS DATA IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS PRODUCT SPECIFICATIONS. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.