



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..... May25/11  
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: 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. EFFECTS RANGE FROM DERMATITIS, REDNESS, SWELLING, PAIN, AND PERMANENT SCARRING, TO DEATH.

SKIN ABSORPTION..... N.AV.  
EYE CONTACT..... EXTREMELY CORROSIVE. LOW CONCENTRATIONS OF MISTS OR VAPORS (10-35PPM) CAN BE IRRITATING, CAUSING REDNESS. CONCENTRATED MISTS, VAPOURS OR SPLASHED LIQUID CAN CAUSE SEVERE IRRITATION, BURNS AND POSSIBLY PERMANENT BLINDNESS. THIS PRODUCT CAUSES CORNEAL SCARRING AND CLOUDING, GLAUCOMA AND CATARACTS.

INHALATION..... CORROSIVE. INHALATION OF ACID AEROSOLS INCLUDING MISTS, VAPOURS, GAS, FOG, AND OTHER AIRBORNE FORMS OF ANY PARTICLE SIZE CAUSES IRRITATION OF THE NOSE, THROAT, AND RESPIRATORY TRACT WITH COUGHING AND DISCOMFORT. HIGHER OR PROLONGED INHALATION EXPOSURE MAY LEAD TO CORROSION OF MUCUS MEMBRANES WITH TEMPORARY LUNG IRRITATION AND COUGH, DIFFICULTY IN BREATHING, SHORTNESS OF BREATH AND/OR PULMONARY EDEMA (FLUID ACCUMULATION IN THE LUNGS). PROLONGED INHALATION MAY LEAD TO DENTAL EROSION.

INGESTION..... CORROSIVE. INGESTION MAY CAUSE SEVERE ACID BURNS TO THE MOUTH, THROAT, ESOPHAGUS, AND STOMACH. 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..... SEE ABOVE.  
EFFECTS OF OVEREXPOSURE:..... ADVERSE SYMPTOMS OF INHALATION MAY INCLUDE RESPIRATORY TRACT IRRITATION AND COUGHING. SEVERE EXPOSURES (E.G. 1000-2000PPM), FOR EVEN A FEW MINUTES, CAN CAUSE A LIFE THREATENING ACCUMULATION OF FLUID IN THE LUNGS. INGESTION MAY LEAD TO STOMACH PAINS. OVER-EXPOSURE TO THE SKIN MAY LEAD TO PAIN, IRRITATION, REDNESS AND BLISTERING. OVER-EXPOSURE TO THE EYES MAY INCLUDE PAIN, WATERING AND REDNESS.

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 03: 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

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CODE: MUR0051

**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 PLENTY OF WATER FOR AT LEAST 20 MINUTES, OCCASIONALLY LIFTING THE UPPER AND LOWER EYELIDS. IF IRRITATION PERSISTS, REPEAT FLUSHING. GET MEDICAL ATTENTION IMMEDIATELY. DO NOT TRANSPORT VICTIM UNLESS THE RECOMMENDED FLUSHING PERIOD IS COMPLETED OR FLUSHING CAN BE CONTINUED DURING TRANSPORT.
SKIN CONTACT.....	IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 20 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. IF IRRITATION PERSISTS, REPEAT FLUSHING. GET MEDICAL ATTENTION IMMEDIATELY. DO NOT TRANSPORT VICTIM UNLESS THE RECOMMENDED FLUSHING PERIOD IS COMPLETED OR FLUSHING CAN BE CONTINUED DURING TRANSPORT.
INHALATION.....	MOVE EXPOSED PERSON TO FRESH AIR. IF NOT BREATHING, IF BREATHING IS IRREGULAR OR IF RESPIRATORY ARREST OCCURS, PROVIDE ARTIFICIAL RESPIRATION OR OXYGEN BY TRAINED PERSONNEL. 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. CALL MEDICAL DOCTOR OR POISON CONTROL CENTER IMMEDIATELY. SYMPTOMS MAY APPEAR UP TO 48 HOURS AFTER EXPOSURE.
INGESTION.....	WASH OUT MOUTH WITH WATER. DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY MEDICAL PERSONNEL. IF SPONTANEOUS VOMITING OCCURS, HAVE VICTIM LEAN FORWARD WITH HEAD DOWN TO AVOID BREATHING IN OF VOMITUS, RINSE MOUTH AND ADMINISTER MORE WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.
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.....	USE AN EXTINGUISHING AGENT SUITABLE FOR THE SURROUNDING FIRE. USE CARBON DIOXIDE OR DRY CHEMICAL MEDIA FOR SMALL FIRES. IF ONLY WATER IS AVAILABLE, USE IT IN THE FORM OF A FOG. 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.
SPECIAL FIREFIGHTING PROCEDURES...	FIRE-FIGHTERS SHOULD WEAR APPROPRIATE PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS (SCBA) WITH A FULL FACE-PIECE OPERATED IN POSITIVE PRESSURE MODE.
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.
FIRE AND EXPLOSION HAZARDS.....	NON-FLAMMABLE. ATTACKS MANY METALS PRODUCING EXTREMELY FLAMMABLE HYDROGEN GAS WHICH CAN FORM EXPLOSIVE MIXTURES WITH AIR. HYDROCHLORIC ACID FUMES MAY BE RELEASED FROM HEATING UNDER FIRE CONDITONS. DECOMPOSITION PRODUCTS MAY INCLUDE THE FOLLOWING MATERIALS: HALOGENATED COMPOUNDS.
HAZARDOUS COMBUSTION PRODUCTS..	HYDROGEN AND CHLORINE.

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CODE: MUR0051

**Section 06: ACCIDENTAL RELEASE MEASURES**

LEAK/SPILL..... DO NOT BREATHE VAPOUR OR MIST. PROVIDE ADEQUATE VENTILATION. WEAR APPROPRIATE RESPIRATOR WHEN VENTILATION IS INADEQUATE. PUT ON APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. REMOVE ALL IGNITION SOURCES (NO SMOKING, FLARES, SPARKS OR FLAMES). COVER WITH DRY EARTH, SAND, OR OTHER NON-COMBUSTIBLE MATERIAL. AVOID DISPERSAL OF SPILLED MATERIAL AND RUNOFF AND CONTACT WITH SOIL, WATERWAYS, DRAINS AND SEWERS. INFORM THE RELEVANT AUTHORITIES IF THE PRIDUCT HAS CAUSED ENVRIONMENTAL POLLUTION (SEWERS, WATERWAYS, SOIL OR AIR).

**Section 07: HANDLING AND STORAGE**

HANDLING PROCEDURES AND ..... PUT ON APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (SEE SECTION 8). EQUIPMENT EATING, DRINKING, AND SMOKING SHOULD BE PROHIBITED IN AREAS WHERE THIS MATERIAL IS HANDLED, STORED, AND PROCESSED. PREVENT RELEASE OF VAPOUR OR MIST IN HANDLING AREAS. LOCATE SAFETY SHOWER AND EYE WASH STATION. WORKERS SHOULD WASH HANDS AND FACE BEFORE EATING, DRINKING AND SMOKING. DO NOT GET IN EYES OR ON SKIN OR CLOTHNG. DO NOT BREATH VAPOUR OR MIST. DO NOT INGEST. USE ONLY WITH ADEQUATE VENTILATION. USE EXTREME CARE WHEN DILUTING WITH WATER. ALWAYS ADD ACID TO WATER. WEAR APPROPRIATE RESPIRATOR WHEN VENTILATION IS INADEQUATE. KEEP IN THE ORGINAL CONTAINER OR AN APPROVED ALTERNATIVE MADE FROM A COMPATIBLE MATERIAL, KEPT TIGHTLY CLOSED WHEN NOT IN USE. KEEP AWAY FROM ALKALIS. EMPTY CONTAINERS RETAIN PRODUCT RESIDUE AND CAN BE HAZARDOUS. DO NO REUSE CONTAINER.

STORAGE NEEDS..... STORE IN ACCORDANCE WITH LOCAL REGULATIONS. STORE IN ORIGINAL CONTAINER PROTECTED FROM DIRECT SUNLIGHT IN A DRY, COOL AND WELL-VENTIALTED AREA, AWAY FROM INCOMPATIBLE MATERIALS (SEE SECTION 10) AND FOOD AND DRINK. SEPARATE FROM ALKALIS. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE. CONTAINERS THAT HAVE BEEN OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE. DO NOT STORE IN UNLABELED CONTAINERS. USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION. 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.

**Section 08: EXPOSURE CONTROLS AND PERSONAL PROTECTION**

GLOVES/ TYPE..... CHEMICAL-RESISTANT, IMPERVIOUS GLOVES COMPLYING WITH AN APPROVED STANDARD SHOULD BE WORN AT ALL TIMES WHEN HANDLING CHEMICAL PRODUCTS IF A RISK ASSESSMENT INDICATES THIS IS NECESSARY, >8 HOURS (BREAKTHROUGH TIME): NITRILE GLOVES.

RESPIRATORY/TYPE..... A NIOSH/MSHA APPROVED AIR-PURIFYING RESPIRATOR EQUIPPED WITH ACID GAS CARTIDGES UP TO TEN TIMES THE TLV. RESPIRATOR SELECTION MUST BE BASED ON KNOWN OR ANTICIPATED EXPOSURE LEVELS, THE HAZARDS OF THE PRODUCT AND THE SAFE WORKING LIMITS OF THE SELECTED RESPIRATOR. RECOMMENDED: VAPOUR RESPIRATOR.

EYE/TYPE..... SAFETY EYEWEAR COMPLYING WITH AN APPROVED STANDARD SHOULD BE USED WHEN A RISK ASSESSMENT INDICATES THIS IS NECESSARY TO AVOID EXPOSURE TO LIQUID SPLASHES, MISTS OR DUSTS. RECOMMENDED: SPLASH GOGGLES WITH FULL FACE SHIELD. MAINTAIN EYE WASH STATION 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. EMISSIONS FROM VENTILATION OR WORK PROCESS EQUIPMENT SHOULD BE CHECKED TO ENSURE THEY COMPLY WITH THE REQUIREMENTS OF ENVIRONMENTAL PROTECTION LEGISLATION. IN SOME CASES, FUME SCRUBBERS, FILTERS OR ENGINEERING MODIFICATIONS TO THE PROCESS EQUIPMENT WILL BE NECESSARY TO REDUCE EMISSIONS TO ACCEPTABLE LEVELS.

ENGINEERING CONTROLS..... USE ONLY WITH ADEQUATE VENTILATION. USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION OR OTHER ENGINEERING CONTROLS TO KEEP WORKER EXPOSURE TO AIRBORNE CONTAMINANTS BELOW ANY RECOMMENDED OR STATUTORY LIMITS. THE ENGINEERING CONTROLS ALSO NEED TO KEEP GAS, VAPOUR OR DUST CONCENTRATIONS BELOW ANY LOWER EXPLOSIVE LIMITS. ELECTRICAL INSTALLATIONS SHOULD BE PROTECTED AGAINST THE CORROSIVE ACTION OF VAPOURS. SMOKING SHOULD BE PROHIBITED IN AREAS IN WHICH HYDROCHLORIC ACID IS STORED OR HANDLED.

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**Section 09: PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL STATE..... COLOURLESS TO LIGHT YELLOW.  
 ODOUR..... PUNGENT ODOUR.  
 ODOUR THRESHOLD..... N.AV.  
 VAPOUR PRESSURE (MMHG)..... 35.  
 VAPOUR DENSITY (AIR=1)..... N.AV.  
 BY VOLUME  
 BY WEIGHT  
 EVAPORATION RATE..... >1 (BUTYL ACETATE = 1).  
 BOILING POINT..... 84°C(183.2°F).  
 FREEZING POINT..... -62.5°C(-80.5°F).  
 PH..... <1.  
 SPECIFIC GRAVITY (WATER=1)..... 1.18.  
 SOLUBILITY IN WATER (% W/W)..... COMPLETELY SOLUBLE.  
 COEFFICIENT OF WATER/OIL DIST..... N.AV.

**Section 10: STABILITY AND REACTIVITY**

CHEMICAL STABILITY:..... STABLE UNDER NORMAL CONDITIONS OF USE.  
 CONDITIONS TO AVOID..... ELEVATED TEMPERATURES. KEEP AWAY FROM FLAME, SPARKS AND OTHER  
 IGNITION SOURCES. TAKE ANY PRECAUTION TO AVOID MIXING WITH  
 INCOMPATIBLES.  
 MATERIALS TO AVOID..... OXIDIZING MATERIALS, REDUCING MATERIALS AND STRONG BASES. HIGHLY  
 REACTIVE WITH METALS. HYDROXIDES, AMINES, SULFIDES, CARBONATES,  
 HYPOCHLORITES, FORMALDEHYDE AND ALKALIS ARE ALSO INCOMPATIBLE  
 MATERIALS.  
 HAZARDOUS PRODUCTS OF ..... UNDER NORMAL CONDITIONS OF STORAGE AND USE, HAZARDOUS  
 DECOMPOSITION DECOMPOSITION PRODUCTS SHOULD NOT BE PRODUCED. 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.

**Section 11: TOXICOLOGICAL INFORMATION**

EXPOSURE LIMIT OF MATERIAL..... FOR HYDROGEN CHLORIDE: 2 PPM 15-MINUTE SHORT-TERM EXPOSURE LIMIT.  
 LC 50 OF MATERIAL, SPECIES & ROUTE.. N.AV.  
 LD 50 OF MATERIAL, SPECIES & ROUTE.. N.AV.  
 CARCINOGENICITY OF MATERIAL..... IARC - GROUP 3 CARCINOGEN.  
 REPRODUCTIVE EFFECTS..... N.AV.  
 IRRITANCY OF MATERIAL..... SEE SECTION 2.  
 SENSITIZING CAPABILITY OF MATERIAL. SEE ROUTE OF ENTRY: SKIN CONTACT.  
 SYNERGISTIC MATERIALS..... N.AV.  
 MUTAGENICITY..... N.AV.  
 TERATOGENICITY..... N.AV.

**Section 12: ECOLOGICAL CONSIDERATIONS**

ECOLOGICAL INFORMATION..... MATERIAL IS EXTREMELY TOXIC TO AQUATIC LIFE ON AN ACUTE BASIS. ACUTE  
 LC50 282000 ug/L, FISH, 96 HOURS EXPOSURE; ACUTE LC50 240000 ug/L,  
 CRUSTACEANS, 48 HOURS EXPOSURE.

**Section 13: DISPOSAL CONSIDERATIONS**

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

**Section 14: TRANSPORT INFORMATION**

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

**Section 15: REGULATORY INFORMATION**

WHMIS CLASSIFICATION..... E.  
 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.

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CODE: MUR0051

**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.