



KENCRO

CHEMICALS

PRODUCT: CHROMIC ACID

SECTION 1: PRODUCT INFORMATION

T.D.G. CLASSIFICATION	5.1 (8)
T.D.G. NAME	CHROMIUM TRIOXIDE, ANHYDROUS
UN NUMBER	1463
PACKING GROUP	II
PRODUCT NAME	CHROMIUM TRIOXIDE
WHIMIS CLASSIFICATION	CLASS C – OXIDIZER CLASS D-1A – VERY TOXIC (ACUTE EFFECTS) CLASS D-2A – VERY TOXIC (CARCINOGENIC, RESPIRATORY SENSITIZER) CLASS D-2B – TOXIC (SKIN SENSITIZER) CLASS E – CORROSIVE
CHEMICAL FORMULA	CrO ₃
MOLECULAR WEIGHT	99.99
CHEMICAL FAMILY	METALLIC OXIDES. INORGANIC ACID

SECTION 2: HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	T.L.V.	C.A.S. #	LD/50,ROUTE, SPECIE	LC/50,ROUTE, SPECIE
CHROMIC ACID	99-100%	0.5mg/M ³ * A1 (as Cr)	00133-82-0	57 mg/kg (DERMAL, RABBIT)	217 mg/M ³ (INHALATION, RAT)

SECTION 3: PHYSICAL DATA

PHYSICAL STATE	SOLID, DARK RED FLAKES
ODOUR	ODOURLESS
ODOUR THRESHOLD	N. AV.
VAPOUR PRESSURE (MMHG)	NEGLIBLE
VAPOUR DENSITY (AIR=1)	N. AP.
EVAPORATION RATE	N. AP.
BOILING POINT.	197°C
FREEZING POINT	N. AV.
pH	1.1 (1% AQUEOUS SOLUTION) AT 25°C
SOLUBILITY	SOLUBLE IN ETHYL ALCOHOL, ETHYL ETHER, SULPHURIC ACID AND NITRIC ACID.
SOLUBILITY IN WATER (% W/W)	SOLUBLE IN WATER. 63% (BY WEIGHT) AT 25°C. DELIQUESCENT.
COEFFICIENT OF WATER/OIL DIST.	N. AV.

SECTION 4: FIRE AND EXPLOSION DATA

FLAMMABILITY **NOT FLAMMABLE**

IF YES, UNDER WHICH CONDITIONS? STRONG OXIDIZERS CAN CAUSE IGNITION OF COMBUSTIBLE OR OXIDIZABLE MATERIALS. MAY DECOMPOSE VIOLENTLY ON CONTACT WITH METALS, OR THEIR SALTS, DUSTS OR OTHER CONTAMINANTS. DAMP MATERIAL MAY DECOMPOSE EXOTHERMICALLY AND MAY CAUSE COMBUSTION OF ORGANIC MATERIAL. OXYGEN RELEASE DUE TO EXOTHERMIC DECOMPOSITION MAY SUPPORT COMBUSTION. CONTACT WITH OXIDIZABLE AND COMBUSTIBLE MATERIALS (WOOD, PAPER, AND ORGANIC MATERIALS SUCH AS SOLVENTS AND CARBON BASED CHEMICALS) CAN LEAD TO FIRES.

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EXTINGUISHING MEDIA	USE MEDIA APPROPRIATE FOR SURROUNDING FIRE AND/OR MATERIALS. USE CARBON DIOXIDE OR DRY CHEMICAL MEDIA FOR SMALL FIRES. IF ONLY WATER IS AVAILABLE, USE IT IN THE FORM OF A FOG. SPILLED MATERIAL MAY CAUSE FLOORS AND CONTACT SURFACES TO BECOME SLIPPERY. USE SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING. PROTECTIVE CLOTHING FOR SKIN AND EYE PROTECTION SHOULD BE WORN TO PROTECT AGAINST CORROSIVE MATERIALS.
SPECIAL PROCEDURES	MINIMIZE AIR BORNE SPREADING OF DUST. ENFORCE NO SMOKING RULES IN AREA OF USE.
FLASH POINT(C), METHOD	NON-COMBUSTIBLE (DOES NOT BURN)
AUTO IGNITION TEMPERATURE	N.AP
UPPER FLAMMABLE LIMIT (% BY VOL)	N.AP
LOWER FLAMMABLE LIMIT (% BY VOL)	N.AP
HAZARDOUS COMBUSTION	THERMAL DECOMPOSITION PRODUCTS ARE TOXIC AND MAY INCLUDE OXIDES OF CHROMIUM AND IRRITATING GASES. DECOMPOSITION CAUSES EVOLUTION OF OXYGEN.
EXPLOSION DATA	
SENSITIVITY TO STATIC DISCHARGE	NOT EXPECTED TO BE SENSITIVE TO STATIC DISCHARGE
SENSITIVITY TO IMPACT	NOT EXPECTED TO BE SENSITIVE TO MECHANICAL IMPACT.
RATE OF BURNING	N. AV.
EXPLOSIVE POWER	N. AV.

SECTION 5: REACTIVITY DATA

CHEMICAL STABILITY	STABLE
YES	
NO, WHICH CONDITIONS?	
COMPATIBILITY WITH OTHER SUBSTANCES:	
YES	
NO, WHICH ONES?	REDUCING AGENTS. STRONG ACIDS, ALKALIES, OILS, GLYCEROL, ANHYDRIDE, PYRIDINES, TURPENTINE, ORGANIC MATERIALS, COMBUSTIBLES, ALUMINIUM AND ITS ALLOYS, BRONZE. CORROSIVE TO IRON, STEEL, COPPER AND THEIR ALLOYS, SILVER, BRASS, NICKEL, POTASSIUM-SODIUM ALLOYS. AVOID CONTACT WITH WATER. STRONG OXIDIZERS CAN CAUSE IGNITION OF COMBUSTIBLE OR OXIDIZABLE MATERIALS. MAY DECOMPOSE VIOLENTLY ON CONTACT WITH METALS, OR THEIR SALTS, DUSTS OR OTHER CONTAMINANTS, ACETIC ACID, ACETONE, DIETHYL ETHER, ETHYL ALCOHOL, DIMETHYLFORMAMIDE, HYDROGEN SULPHIDE, METHANOL, NAPHTHALENE, POTASSIUM FERRICYANIDE, AMMONIA.
REACTIVITY CONDITIONS	NOT FLAMMABLE. DAMP MATERIAL MAY DECOMPOSE EXOTHERMICALLY AND MAY CAUSE COMBUSTION OR ORGANIC MATERIAL. OXYGEN RELEASE DUE TO EXOTHERMIC DECOMPOSITION MAY SUPPORT COMBUSTION.
HAZARDOUS POLYMERIZATION CONDITIONS TO AVOID	WILL NOT OCCUR. HIGH TEMPERATURES, SPARKS, OPEN FLAMES AND ALL OTHER SOURCES OF IGNITION. DECOMPOSE AT 197° TO 250° C. DO NOT STORE IN HUMID PLACES. MINIMIZE AIR BORNE SPREADING OF DUST. SWEEP UP IMMEDIATELY TO ELIMINATE SLIPPING HAZARD.
HAZARDOUS PRODUCTS OF DECOMPOSITION	THERMAL DECOMPOSITION PRODUCTS ARE TOXIC AND MAY INCLUDE OXIDES OF CHROMIUM AND IRRITATING GASES. DECOMPOSITION CAUSES EVOLUTION OF OXYGEN.

SECTION 6: TOXICOLOGICAL PROPERTIES

<u>EMERGENCY OVERVIEW :</u>	TOXIC/POISONOUS! CORROSIVE! TOXIC EFFECTS ARE PRINCIPALLY RELATED TO ITS CORROSIVE PROPERTIES. MAY BE FATAL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED. CAUSES SEVERE SKIN AND EYE BURNS. DUST IS IRRITATING TO RESPIRATORY TRACT. MAY CAUSE SKIN AND RESPIRATORY SENSITIZATION OR OTHER ALLERGIC RESPONSES. CANCER HAZARD. THIS MATERIAL IS A STRONG OXIDIZER WHICH IS STABLE UNDER NORMAL CONDITIONS, BUT CAN DECOMPOSE IF CONTAMINATED. CONTACT WITH OTHER COMBUSTIBLE MATERIAL CAN CAUSE FIRE. DO NOT STORE INDOORS ON WOODEN PALLETS OR NEAR COMBUSTIBLE
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	MATERIALS (E.G. WOOD, PAPER, AND ORGANIC MATERIALS SUCH AS SOLVENTS AND CARBON CHEMICALS).
ROUTE OF ENTRY SKIN CONTACT	CORROSIVE! CHROMIC ACID MAY CAUSE SYMPTOMS OF SKIN IRRITATION SUCH AS REDDENING, SWELLING, RASHING, SCALING OR BLISTERING. BRIEF CONTACT WITH DUST CAUSES IRRITATION. GREATER EXPOSURE CAUSES SEVERE BURNS. IN THE PRESENCE OF MOISURE (E.G. PERSPIRATION, HUMIDITY, TEARS), THE DUST DISSOLVES TO FORM CORROSIVE SOLUTION WHICH MAY CAUSE BURNS. AVOID HANDLING WHEN THE SKIN IS MOIST, WET OR ABRAIDED. MAY CAUSE SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES.
SKIN ABSORPTION	TOXIC BY WAY OF SKIN CONTACT. PROLONGED OR WIDE SPREAD SKIN CONTACT MAY RESULT IN THE ABSORPTION OF POTENTIALLY HARMFUL AMOUNTS OF MATERIAL.
EYE CONTACT	EXTREMELY CORROSIVE. THIS PRODUCT CAUSES CORNEAL SCARRING AND CLOUDING. GLAUCOMA, CATARACTS AND PERMANENT BLINDNESS MAY OCCUR. PROLONGED OR REPATED EYE CONTACT MAY CAUSE CONJUNCTIVITIS.
INHALATION	TOXIC/POISONOUS! CORROSIVE! PRODUCT MAY CAUSE SEVERE IRRITATION OF THE NOSE, THROUGH RESPIRATORY TRACT. REPEATED AND/OR PROLONGED EXPOSURES MAY CAUSE COUGH, RUNNING NOSE, BRONCHOPNEUMONIA, PULMONARY OEDEMA (FLUID BUILD-UP IN LUNGS), AND REDUCTION OF PULMONONARY FUNCTION. MAY CAUSE RESPIRATORY SENSIZATION OR OTHER ALLERGIC RESPONSES.
INGESTION	TOXIC/POISONOUS! CORROSIVE! THIS PRODUCT CAUSES SEVERE BURNING AND PAIN IN MOUTH, THROAT AND ABDOMEN. VOMITING, DIARRHEA, AND PERFORATION OF THE ESOPHAGUS AND STOMACH LINING MAY OCCUR.
EFFECTS OF CHRONIC EXPOSURE	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. CHOMIUM VI COMPOUNDS ARE PRIMARY SKIN IRRITANTS AND THEY MAY CAUSE DERMATITIS, SKIN SENSITIZATION AND SKIN ULCERATION (“CHOMIC HOLES”). CHROMIUM VI COMPOUNDS MAY IRRITATE MUCOUS MEMBRANES CAUSING SNEEZING, IRRITATION, REDNESS OF THROAT, NOSEBLEEDS, AND PERFORATED NASAL SEPTA. RESPIRATORY SENSIZATION MAY DEVELOP. CHOMIUM VI COMPOUNDS HAVE BEEN IMPLICATED AS RESPONSIBLE FOR SUCH EFFECTS AS ULCERATED NASAL MUCOSA, PERFORATED EARDRUMS, PULMONARY OEDEMA, KIDNEY DAMAGE, AND EPIGASTRIC PAIN. MAY CAUSE PULMONARY OEDEMA, LIVER DAMAGE, KIDNEY DAMAGE AND CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION. PULMONARY OEDEMA IS THE BUILD-UP OF FLUID IN THE LUNGS THAT MIGHT BE FATAL. SYMPTOMS OF PULMONARY OEDEMA, SUCH AS SHORTNESS OF BREATH, MAY NOT APPEAR UNTIL SEVERAL HOURS AFTER EXPOSURE AND ARE AGGRAVATED BY PHYSICAL EXERTION. LIVER DAMAGE IS CHARACTERIZED BY THE LOSS OF APPETITE, JAUNDICE AND OCCASIONAL PAIN IN THE UPPER LEFT-HAND SIDE OF THE ABDOMEN. SIGNS AND SYMPTOMS OF KIDNEY DAMAGE GENERALLY PROGRESS FROM OLIGURIA, TO BLOOD IN THE URINE TO TOTAL RENAL FAILURE. CNS DEPRESSION IS CHARACTERIZED BY HEADACHE, DIZZINESS, DROWSINESS, NAUSEA, VOMINTING AND IN-COORDINATION. SEVERE OVEREXPOSURES MAY LEAD TO COMA AND POSSIBLE DEATH DUE TO RESPIRATORY FAILURE.
LD 50 MATERIAL, SPECIES & ROUTE	SEE SECTION II
LC 50 MATERIAL, SPECIES & ROUTE	SEE SECTION II
EXPOSURE LIMIT OF MATERIAL	SEE SECTION II
IRRITANCY OF MATERIAL	CHROMIC ACID MAY CAUSE SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES AND RESPIRATORY SENSITIZATION OR OTHER ALLERGIC RESPONSES. ONCE SENSITIZED, AN INDIVIDUAL CAN REACT TO EXTREMELY LOW AIRBORNE LEVELS, EVEN BELOW THE TLV OR TO SKIN CONTACT.
CARCINOGENICITY OF MATERIAL	CHROMIUM TRIOXIDE, IS (ARE) CLASSIFIED AS CARCINOGENIC BY IARC, NTP, AND NIOSH.
MUTAGENICITY DATA	NO ADVERSE MUTAGENIC EFFECTS ARE ANTICIPATED.
TERATOGENICITY DATA	NO ADVERSE TERATOGENIC EFFECTS ARE ANTICIPATED
REPRODUCTIVE EFFECTS	NO ADVERSE REPRODUCTIVE EFFECTS ARE ANTICIPATED.
SYNERGISTIC MATERIALS	NICKEL, CHROMIUM AND COBALT SALTS MAY ALL CROSS-REACT IN ALLERGIC RESPONSES.

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SECTION 7: PREVENTATIVE MEASURES

GLOVES & CLOTHING /TYPE	GLOVES AND PROTECTIVE CLOTHING MADE FROM PVC, NITRILE RUBBER OR NATURAL RUBBER SHOULD BE IMPERVIOUS UNDER CONDITIONS OF USE. DO NOT USE GLOVES OR PROTECTIVE CLOTHING MADE FROM LEATHER. PRIOR TO USE, USER SHOULD CONFIRM IMPERMEABILITY. DISCARD CONTAMINATED GLOVES.
RESPIRATORY/TYPE	DO NOT USE CHEMICAL CARTRIDGE RESPIRATORS WITH OXIDIZABLE SORBENTS (CHARCOAL). A NIOSH/MSHA – APPROVED FULL FACE PIECE AIR-PURIFYING RESPIRATOR EQUIPPED WITH DUST, MIST, FUME, ACID GAS CARTRIDGES FOR CONCENTRATIONS UP TO 0.5 MG/M3 IS RECOMMENDED. AIR-SUPPLIED RESPIRATOR IF CONCENTRATIONS ARE HIGHER OR UNKNOWN IS RECOMMENDED.
EYE/TYPE	SAFETY GOGGLES WITH SIDE SHIELDS ARE RECOMMENDED AS MINIMAL EYE PROTECTION. USE DUST-TIGHT CHEMICAL SAFETY GOGGLES WHERE THERE IS POTENTIAL FOR EYE CONTACT. USE FULL FACE SHIELD AND CHEMICAL SAFETY GOGGLES WHEN THERE IS POTENTIAL FOR CONTACT.
FOOTWEAR/TYPE	WEAR IMPERMEABLE APRON AND BOOTS.
OTHER/TYPE	LOCATE SAFETY SHOWER AND EYEWASH STATION CLOSE TO HANDLING AREA. TAKE ALL PRECAUTIONS TO AVOID PERSONAL CONTACT.
ENGINEERING CONTROLS	RECOMMENDATIONS LISTED IN THIS SECTION INDICATE THE TYPE OF EQUIPMENT, WHICH WILL PROVIDE PROTECTION AGAINST OVER EXPOSURE TO THIS PRODUCT. CONDITIONS OF USE, ADEQUACY OF ENGINEERING OR OTHER CONTROL MEASURES, AND ACTUAL EXPOSURES WILL DICTATE THE NEED FOR SPECIFIC PROTECTIVE DEVICES AT YOUR WORKPLACE. VENTILATION SHOULD BE CORROSION PROOF. LOCAL EXHAUST VENTILATION SHOULD BE CORROSION PROOF. MAKE UP AIR SHOULD BE SUPPLIED TO BALANCE AIR THAT IS REMOVED BY LOCAL OR GENERAL EXHAUST VENTILATION. VENTILATE LOW LYING AREA SUCH AS SUMPOS OR PITS WHERE DENSE DUST MAY COLLECT.
LEAK/SPILL	INFORMATION IN THIS SECTION IS FOR RESPONDING TO SPILLS, LEAKS OR RELEASES IN ORDER TO PREVENT OR MINIMIZE THE ADVERSE EFFECTS ON PERSONS, PROPERTY AND THE ENVIRONMENT. THERE MAY BE SEPCIFIC REPORTING REQUIREMENTS ASSOCIATED WITH SPILLS, LEAKS OR RELEASES, WHICH CHANGE FROM REGION TO REGION. IN ALL CASES OF LEAK OR SPILL CONTACT VENDOR AT EMERGENCY NUMBER SHOWN ON THE LAST PAGE OF THIS MSDS. MINIMIZE AIR BORNE SPREADING OF DUST. WEAR RESPIRATOR, PROTECTIVE CLOTHING, AND GLOVES. AVOID DRY SWEEPING. DO NOT USE COMPRESSED AIR TO CLEAN SURFACES. VACUUMING IS PREFERRED. RETURN ALL MATERIAL POSSIBLE TO CONTAINER FOR PROPER DISPOSAL.
DEACTIVITATING CHEMICALS	HEXAVALENT CHROMIUM MAY BE REDUCED TO TRIVALENT CHROMIUM BY REDUCING AGENTS SUCH AS SODIUM BISULPHITE, SODIUM SULPHITE, FERROUS SULPHATE, FERROUS CHLORIDE OR SULPHUR DIOXIDE. THE REDUCED CHROMIUM MAY THEN BE PRECIPITATED AS THE CHROMIC OXIDE BY NEUTRALIZING TO A pH OF 7.5 WITH SODA ASH, CAUSTIC SODA OR LIME. NEUTRALIZATION IS EXPECTED TO BE EXOTHERMIC. EFFERVESCENCE MAY RESULT. RECOVER SPILLED MATERIAL ON ABSORBENTS, SUCH AS SAND OR VERMICULITE AND PLACE IN COVERED CONTAINERS FOR DISPOSAL.
WASTE DISPOSAL	ANY RECOVERED PRODUCT CAN BE USED FOR THE USUAL PURPOSE, DEPENDING ON THE EXTENT AND KIND OF CONTAMINATION. WHERE A PACKAGE (DRUM OR BAG) IS DAMAGED AND/OR LEAKING, REPAIR IT, OR PLACE IT INTO AN OVER-PACK DRUM IMMEDIATELY SO AS TO AVOID OR MINIMIZE MATERIAL LOSS AND CONTAMINATION OF SURROUNDING ENVIRONMENT. REPLACE DAMAGED CONTAINERS IMMEDIATELY TO AVOID LOSS OF MATERIAL AND CONTAMINATION OF SURROUNDING ATMOSPHERE. COLLECT PRODUCT FOR RECOVERY OR DISPOSAL. FOR RELEASE TO LAND, OR STORM WATER RUN OF, CONTAIN DISCHARGE BY CONSTRUCTING DYKES OR APPLYING INERT ABSORBENT. FOR RELEASE TO WATER, UTILIZE DAMMING AND/OR WATER DIVERSION TO MINIMIZE THE SPREAD OF CONTAMINATION. VENTILATE ENCLOSED SPACES. NOTIFY APPLICABLE AUTHORITY IF RELEASE IS REPORTABLE AND COULD ADVERSELY AFFECT THE ENVIRONMENT. THIS INFORMATION APPLIES TO THE MATERIAL AS MANUFACTURED. RE-EVALUATION OF THE PRODUCT MAY BE REQUIRED BY THE USER AT THE TIME OF DISPOSAL SINCE THE PRODUCT USES, TRANSFORMATIONS, MIXTURES AND PROCESSES MAY INFLUENCE WASTE CLASSIFICATION. DISPOSE OF WASTE MATERIAL AT AN APPROVED (HAZARDOUS) WASTE TREATMENT/DISPOSAL FACILITY IN ACCORDANCE WITH APPLICABLE LOCAL, PROVINCIAL, AND FEDERAL

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DISPOSAL OF PACKAGING	REGULATIONS. DO NOT DISPOSE OF WASTE WITH NORMAL GARBAGE TO SEWER SYSTEMS. EMPTY CONTAINERS RETAIN PRODUCT RESIDUE AND CAN BE DANGEROUS. TREAT PACKAGE IN THE SAME MANNER AS THE PRODUCT.
HANDLING PROCEDURES AND EQUIPMENT	USE NORMAL "GOOD" INDUSTRIAL HYGIENE AND HOUSEKEEPING PRACTICES MINIMIZE AIR BORNE SPREADING OF DUST. IMMERSE CONTAMINATED CLOTHING IN WATER IMMEDIATELY AND KEEP WET UNTIL DISCARDED OR LAUNDERED. USE ONLY WITH ADEQUATE VENTILATION AND AVOID BREATHING DUSTS. AVOID CONTACT WITH EYES, SKIN, OR CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING. WASH CONTAMINATED CLOTHING THOROUGHLY BEFORE RE-USE. DO NOT STORE OR TRANSPORT WITH FOOD OR FEED.
STORAGE NEEDS	STORE IN A COOL, DRY, AND WELL-VENTILATED AREA. KEEP AWAY FROM HEAT, SPARKS, AND FLAMES. KEEP CONTAINERS CLOSED. AVOID MOISTURE CONTAMINATION. PROLONGED STORAGE MAY RESULT IN LUMPING OR CAKING. DO NOT STORE ON WOODEN FLOORS OR WOODEN PALLETS. EQUIPMENT FOR STORAGE, HANDLING, OR TRANSPORT SHOULD NOT BE MADE FROM THE FOLLOWING MATERIAL, OR WHERE APPLICABLE, ITS ALLOYS: BRASS, SILVER, ALUMINUM, AND ITS ALLOYS, BRONZE AND NICKEL. CORROSIVE TO IRON, STEEL, COPPER, AND THEIR ALLOYS. CONFIRM SUITABILITY OF ANY MATERIAL BEFORE USING.
SPECIAL SHIPPING INSTRUCTIONS	SEE SECTION 1 TDG CLASSIFICATION

SECTION 8: FIRST AID MEASURES

<u>GENERAL GUIDELINES:</u>	PROMPT REMOVAL OF THE MATERIAL AND OBTAINING MEDICAL ATTENTION ARE ESSENTIAL FOR ALL CONTACT. REMOVE ALL CONTAMINATED CLOTHING AND IMMEDIATELY WASH THE EXPOSED AREAS WITH COPIOUS AMOUNTS OF WATER. CONTINUE THE FLUSHING DURING TRANSPORTATION TO THE EMERGENCY DEPARTMENT. CORROSIVE EFFECTS MAY BE DELAYED (UP TO 72 HOURS) AND DAMAGE MAY OCCUR WITH THE SENSATION OR ONSET OF PAIN. CONTACT LOCAL POISON CONTROL CENTRE FOR FURTHER GUIDANCE.
INHALATION	MOVE VICTIM TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION ONLY IF BREATHING HAS STOPPED. GIVE CARDIOPULMONARY RESESCITATION (CPR) ONLY IF THERE IS NO PULSE AND NO BREATHING. OBTAIN MEDICAL ATTENTION IMMEDIATELY .
SKIN CONTACT	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.
EYE CONTACT	IMMEDIATELY FLUSH EYES WITH RUNNING WATER FOR A MINIMUM OF 30 MINUTES, PREFERABLY UP TO 60 MINUTES. HOLD EYELIDS OPEN DURING FLUSHING. IF IRRITATION PERSISTS, REPEAT FLUSHING. DO NOT TRANSPORT VICTIM UNTIL RECOMMENDED FLUSHING PERIOD IS COMPLETED UNLESS FLUSHING CAN BE COMPLETED DURING TRANSPORT. WHERE POSSIBLE, CONSULT AN OPHTHALMOLOGIST.
INGESTION	DO NOT ATTEMPT TO GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. IF VICTIM IS ALERT AND NOT CONVULSING, RINSE MOUTH OUT AND GIVE ½ TO 1 GLASS OF WATER TO DILUTE MATERIAL. IMMEDIATELY CONTACT LOCAL POISON CONTROL CENTRE. VOMITING SHOULD ONLY BE INDUCED UNDER THE DIRECTION OF A PHYSICIAN OR A POISON CONTROL CENTRE. 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.
NOTES TO PHYSICIAN	VICTIMS HAVING INGESTED CHROMIUM VI COMPOUNDS SHOULD BE GIVEN 5-10 GRAMS OF ASCORBIC ACID (NOT EFFERVESCENT TABLETS) DISSOLVED IN WATER. THIS DOSE CAN BE REPEATED SEVERAL TIMES. MASSIVE OVEREXPOSURE TO SOLUTIONS OF THIS PRODUCT COULD LEAD TO KIDNEY FAILURE AND DEATH. DEATH HAS BEEN AVOIDED IN SEVERAL SUCH CASES THROUGH THE USE OF EARLY RENAL DIALYSIS. IT HAS BEEN REPORTED THAT THERE IS LITTLE VALUE FROM CHELATING AGENTS, HOWEVER, ASCORBIC ACID ADMINISTRED INTRAVENOUSLY IS AN EFFECTIVE ANTIDOTE IN PREVENTING RENAL FAILURE. SKIN ULCERS MAY BE TREATED BY REMOVAL FROM EXPOSURE, DAILY CLEANSING AND DEBRIDEMENT OF ANTIBIOTIC CREAM AND DRESSING.

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TREATMENT FOR CORROSIVE CHEMICAL CONTACT WITH SKIN:

1. IMMERSE THE EXPOSED PART **IMMEDIATELY** IN ICE WATER TO RELIEVE PAIN AND TO PREVENT SWELLING AND BLISTERING. PLACE COLD PACKS, ICE OR WET CLOTHS ON THE BURNED AREA IF IMMERSION IS NOT POSSIBLE.
2. REMOVE ANYTHING THAT IS CONSTRICTIVE, SUCH AS RINGS, BRACELETS OR FOOTWEAR, BEFORE SWELLING BEGINS.
3. COVER EXPOSED PART WITH A CLEAN, PREFERABLY STERILE, LINT-FREE DRESSING.
4. FOR SEVERE EXPOSURE, **IMMEDIATELY** SEEK MEDICAL ATTENTION AND MONITOR BREATHING AND TREAT FOR SHOCK.

DUE TO THE SEVERLY IRRITATING OR CORROSIVE NATURE OF THE MATERIAL, SWALLOWING MAY LEAD TO ULCERATION AND INFLAMMATION OF THE UPPER ALIMENTARY TRACT WITH HEMORRHAGE AND FLUID LOSS. ALSO, PERFORATION OF THE ESOPHAGUS OR STOMACH MAY OCCUR, LEADING TO MEDIASTITIS OR PERITONITIS AND THE RESULTANT COMPLICATIONS. MUCOSAL INJURY FOLLOWING INGESTION OF THIS CORROSIVE MATERIAL MAY CONTRAINDICATE THE INDUCTION OF VOMITING IN THE TREATMENT OF POSSIBLE INTOXICATION. SIMILARLY, IF GASTRIC LAVAGE IS PERFORMED, INTUBATION SHOULD BE DONE WITH GREAT CARE. IF ORAL BURNS ARE PRESENT OR A CORROSIVE INGESTION IS SUSPECTED BY THE PATIENT'S HISTORY, PERFORM ESOPHAGOSCOPY AS SOON AS POSSIBLE. SCOPE SHOULD NOT BE PASSED BEYOND THE FIRST BURN BECAUSE OF THE RISK OF PERFORATION.

MEDICAL SUPERVISION OF ALL EMPLOYEES WHO HANDLE OR COME IN CONTACT WITH SENSITIZERS IS RECOMMENDED. THIS SHOULD INCLUDE PRE-EMPLOYMENT AND PERIODIC MEDICAL EXAMINATIONS. PERSONS SENSITIZED TO THIS MATERIAL SHOULD BE EXCLUDED FROM WORKING WITH THIS PRODUCT. ONCE A PERSON IS DIAGNOSED AS SENSITIZED, NO FURTHER EXPOSURE TO ANY SENSITIZER SHOULD BE PERMITTED.

MEDICAL CONDITIONS THAT MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT INCLUDE DISEASES OF THE SKIN, EYES OR RESPIRATORY TRACT, ASTHMA, PRE-EXISTING LIVER AND KIDNEY DISORDERS.

SECTION 9: PREPARATION INFORMATION

EMERGENCY PHONE NO (613) 996 6666 (CANUTEC)
PREPARED BY KENCRO CHEMICALS LIMITED
(905) 827 4133

DATE JULY 2008

LEGEND:

ACGIH	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
AFFF	AQUEOUS FILM FORMING FOAM
CAS #	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
CFR	CODE OF FEDERAL REGULATIONS
CPR	CARDIOPULMONARY RESUSCITATION
DOT	DEPARTMENT OF TRANSPORT
IARC	INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
LC ₅₀	THE CONCENTRATION OF MATERIAL IN AIR EXPECTED TO KILL 50% OF A GROUP OF TEST ANIMALS
LD ₅₀	LETHAL DOSE EXPECTED TO KILL 50% OF A GROUP OF TEST ANIMALS
LFL	LOWER FLAMMABLE LIMIT
MSHA	MINE SAFETY AND HEALTH ADMINISTRATION
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
PVC	POLYVINYL CHLORIDE
T.D.G.	TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS
TLV	THRESHOLD LIMIT VALUE
TWA	TIME-WEIGHTED AVERAGE
UFL	UPPER FLAMMABLE LIMIT
WHMIS	WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

PRODUCT: CHROMIC ACID

DEFINITIONS

DELIQUESCENT

SUBSTANCES THAT ABSORBS MOISTURE FROM THE AIR AND FORMS A WET SOLID OR SOLUTION ARE TERMED 'DELIQUESCENT'.

SENSITIZATION

THE PROCESS WHEREBY A BIOLOGICAL CHANGE OCCURS IN THE INDIVIDUAL BECAUSE OF PREVIOUS EXPOSURE TO A SUBSTANCE AND, AS A RESULT, THE INDIVIDUAL REACTS MORE STRONGLY WHEN SUBSEQUENTLY EXPOSED TO THE SUBSTANCE.

THE INFORMATION IS, TO THE BEST OF OUR KNOWLEDGE AND BELIEF, ACCURATE AND RELIABLE AS OF THE DATE COMPILED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE TO ITS ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO REVIEW THIS INFORMATION, SATISFY THEMSELVES AS TO ITS SUITABILITY AND COMPLETENESS AND PASS ON THE INFORMATION TO ITS EMPLOYEES OR CUSTOMERS. KENCRO CHEMICALS LIMITED DOES NOT ACCEPT RESPONSIBILITY FOR ANY LOSS OR DAMAGE WHICH MAY OCCUR FROM THE USE OF THIS INFORMATION.