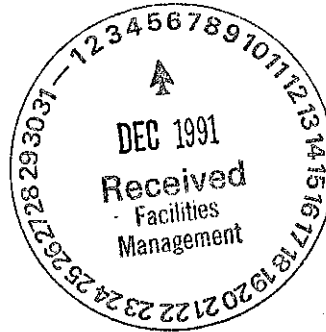


SARGENT WELCH SCIENTIFIC
P.O. BOX 1026
SKOKIE, IL. 60077
TELEPHONE: (800) 727-4368

01 014403359
BOVA SUPPLY CENTER

1023 ERIE BLVD W.
SYRACUSE NY 13204
ATTENTION: SAFETY OFFICER



11/16/91

DEAR CUSTOMER:

ENCLOSED ARE THE MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR THE PRODUCT(S) THAT YOUR COMPANY RECENTLY PURCHASED FROM SARGENT WELCH. PLEASE FORWARD THESE MSDS(S) TO YOUR SAFETY OFFICER OR OTHER INDIVIDUAL IN YOUR ORGANIZATION RESPONSIBLE FOR IMPLEMENTING THESE REGULATIONS.

"ALL DATA OR INFORMATION REGARDING THE PARTICULAR PRODUCT YOU HAVE PURCHASED FROM SARGENT WELCH, WHICH IS PROVIDED IN THE ENCLOSED MATERIAL SAFETY DATA SHEET, IS OFFERED GRATUITOUSLY AND IN GOOD FAITH AS ACCURATE, BUT IS FURNISHED WITHOUT GUARANTY. SARGENT WELCH MAKES NO REPRESENTATION AS TO THE ACCURACY OF THE INFORMATION IN THE MSDS. WHILE THE INFORMATION IS BELIEVED TO BE CORRECT, YOU SHOULD PERFORM YOUR OWN INVESTIGATION AND INDEPENDENT VERIFICATION. THE CONDITIONS OF THE USE OF THE PRODUCT, AND THE SUITABILITY OF THE PRODUCT FOR YOUR PARTICULAR PURPOSES, ARE BEYOND THE CONTROL OF SARGENT WELCH. THUS, ALL RISKS OF THE USE OF THE PRODUCT ARE THEREFORE ASSUMED BY YOU, THE USER, EXCEPT AS TO SUCH WARRANTIES AS MAY BE PUBLISHED BY SARGENT WELCH, WITH RESPECT TO A PARTICULAR PRODUCT. SARGENT WELCH EXPRESSLY DISCLAIMS ALL WARRANTIES OF EVERY KIND, AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. SARGENT WELCH SHALL IN NO EVENT BE RESPONSIBLE FOR ANY DAMAGES OF WHATEVER NATURE, DIRECTLY OR INDIRECTLY, RESULTING FROM USE OF THE PRODUCT, OR FROM THE PUBLICATION OF USE OF OR RELIANCE UPON DATA CONTAINED IN THE ENCLOSED MSDS. NOTHING IN THE MSDS IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS, OR WHICH EXTEND LICENSES UNDER VALID PATENTS. IF YOU RESELL THE PRODUCT, YOU ARE RESPONSIBLE TO PASS ON TO YOUR CUSTOMER THE INFORMATION CONTAINED IN THE MSDS, AND GIVE TO THEM APPROPRIATE WARNINGS AND SAFE HANDLING INSTRUCTIONS AS NECESSARY TO MAKE THE PRODUCT SAFE FOR THE INTENDED USES BY YOUR CUSTOMER.

THANK YOU,

SARGENT WELCH

11/16/91

P.O. NUMBER	INVOICE NUMBER	SALE DATE	CATALOG NUMBER	MSDS FORM/DOC NUMBER	
K63604	2728937	11/12/91	WL	C3631R	C11561

SARGENT WELCH SCIENTIFIC CO.
7400 NORTH LINDER AVENUE
SKOKIE, IL 60077
(708) 677-0600

MATERIAL SAFETY DATA SHEET
PRODUCT NO. C8627, C8630, C3631R, T, V
C11561-100GM, -500GM, -2.5KG
4/11/88
CHEMTREC 800-424-9300
DAY (312) 468-3700
24 HOUR EMERGENCY ASSISTANCE

SECTION I IDENTIFICATION

PRODUCT CUPRIC CHLORIDE, DIHYDRATE
TRADE/CHEMICAL COPPER CHLORIDE
SYNONYMS

FORMULA CUCL2.2H2O
RTECS# GL7000000
C.A.S.# 10125-13-0

HEALTH 3
FLAMMABILITY 0
REACTIVITY 0
HAZARD RATING
LEAST SLIGHT MODERATE HIGH EXTREME
0 1 2 3 4

SECTION II MIXTURE COMPONENTS

COMPONENT	CAS NUMBER	%	TLV
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NA=NOT APPLICABLE NE= NONE ESTABLISHED

SECTION III PHYSICAL CHARACTERISTICS INFORMATION

MELTING POINT C 70-200 C (LOSES WATER) SPECIFIC GRAVITY (H2O=1) 2.54
BOILING POINT C NA PERCENT VOLATILE BY VOLUME (%) NA
VAPOR PRESSURE MM HG/C NA EVAPORATION RATE (BUTYL ACETATE=1) NA
VAPOR DENSITY (AIR=1) NA SOLUBILITY IN WATER 110.4 % W/W @ 0 C
APPEARANCE AND ODOR LIGHT BLUE/GREEN CRYSTALS, SLIGHT HYDROCHLORIC ACID ODOR.

SECTION IV FIRE/EXPLOSION HAZARD INFORMATION

FLASH POINT C NA (METHOD) FLAMMABLE LIMITS IN AIR % BY VOLUME LOWER:
UPPER:

FIRE EXTINGUISHER TYPE USE ANY MEDIUM SUITABLE FOR EXTINGUISHING SUPPORTING
FIRE.

FIRE FIGHTING PROCEDURES (CALL FIRE DEPT. IMMEDIATELY) 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.

FIRE / EXPLOSION HAZARDS NOT CONSIDERED TO BE A FIRE/EXPLOSION HAZARD.

D.O.T. COPPER CHLORIDE ORM-B UN2802

D.O.T. REGULATIONS MAY CHANGE FROM TIME TO TIME. PLEASE CONSULT THE MOST
RECENT D.O.T. REGULATIONS. ESSENTIALLY SIMILAR TO FORM OSHA-174.

SECTION V HEALTH HAZARD INFORMATION

THRESHOLD LIMIT VALUE (TLV) 1 MG/M3 (AS CU) TWA

OVEREXPOSURE SYMPTOMS (WHEN IN DOUBT CALL A PHYSICIAN OR LOCAL POISON CONTROL CENTER) TOXIC. ACUTE: IRRITATION AND PAIN TO SKIN, EYES, LUNGS, MUCOUS MEMBRANES, AND GI TRACT. NAUSEA, CHILLS, SORE THROAT. CHRONIC: SYSTEMIC METAL POISONING HAZARD. LIVER/KIDNEY DAMAGE. DERMATITIS, SKIN ULCERS.

EMERGENCY AND
FIRST AID PROCEDURES

SKIN: REMOVE ANY CONTAMINATED CLOTHING. WASH SKIN WITH SOAP OR MILD DETERGENT AND WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS. EYES: WASH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, LIFTING LOWER AND UPPER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION IMMEDIATELY. INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN. INGESTION: IF SWALLOWED, INDUCE VOMITING IMMEDIATELY BY GIVING TWO GLASSES OF WATER AND STICKING FINGER DOWN THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CALL A PHYSICIAN IMMEDIATELY.

SECTION VI REACTIVITY INFORMATION
STABILITY STABLE CONDITIONS TO AVOID HEAT

INCOMPATIBILITIES (MATERIALS TO AVOID) POTASSIUM, SODIUM, ALUMINUM, STRONG OXIDIZERS, ACETYLENE, NITROMETHANE

HAZARDOUS
DECOMPOSITION PRODUCTS CHLORINE.

HAZARDOUS POLYMERIZATION WILL NOT OCCUR
CONDITIONS TO AVOID NONE

SECTION VII SPILL CLEANUP / DISPOSAL INFORMATION
CLEANUP METHOD(S) CLEANUP/DISPOSAL METHODS ARE RECOMMENDATIONS ONLY. CHECK YOUR LOCAL, STATE, AND FEDERAL REGULATIONS. VENTILATE AREA OF LEAK OR SPILL. CLEAN-UP PERSONNEL MAY REQUIRE PROTECTIVE CLOTHING AND RESPIRATORY PROTECTION FROM DUST. SPILLS: SWEEP UP AND CONTAINERIZE FOR RECLAMATION OR DISPOSAL. AVOID DUST DISPERSAL.

DISPOSAL METHOD(S) DISPOSAL: WHATEVER CANNOT BE SAVED FOR RECLAMATION MAY BE DISPOSED IN A RCRA APPROVED HAZARDOUS WASTE FACILITY. DO NOT FLUSH TO THE SEWER. TOXIC TO AQUATIC LIFE.

SECTION VIII PERSONAL PROTECTION RECOMMENDATIONS
RESPIRATORY PROTECTION (SPECIFY TYPE) DUST

VENTILATION LOCAL EXHAUST X
MECHANICAL (GENERAL) X
PROTECTIVE GLOVES VINYL OR RUBBER EYE PROTECTION GOGGLES

OTHER PROTECTIVE
EQUIPMENT LAB COAT

SECTION IX ADDITIONAL INFORMATION
STORE IN A COOL DRY LOCATION.

CONDITIONS AGGRAVATED/TARGET ORGANS: PERSONS WITH PREEXISTING SKIN, KIDNEY/
LIVER, OR HEART DISORDERS OR WILSON'S DISEASE MAY BE MORE SUSCEPTIBLE.

REV NO 2 DATE 4/11/88 APPROVED K. KUCHEL SAFETY DIR. RMC
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IS OFFERED IN GOOD FAITH FOR THE USER'S CONSIDERATION AND
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OF CURRENT SCIENTIFIC AND MEDICAL KNOWLEDGE THAT THE MATERIAL CAN
BE USED SAFELY.

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CENTER