MATERIAL SAFETY DATA SHEET

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GENIUM PUBLISHING CORP.

NO. 121

CUPRIC CHLORIDE

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SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: CUPRIC CHLORIDE

OTHER DESIGNATIONS: Copper (II) Chloride, $CuCl_2$, CAS #007 447 394; $CuCl_2 \cdot 2H_2O$, CAS #013 933 170; also CAS #001 344 678

MANUFACTURER: Available from several suppliers, including:

Mallinckrodt, Inc.
P.O. Box M
Paris, KY 40361
Tel: (606) 987-7000

G. Frederick Smith Chemical Co.
867 McKinley Ave
P.O. Box 23214
Columbus, OH 43223 Tel: (614) 224-5343

SECTION II. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Cupric Chloride (forms the dihydrate, $CuCl_2 \cdot 2H_2O$ in moist air)		8-hr TWA 1.0 mg/m^3* (dust or mist, as Cu) $CuCl_2$ Rat Oral LI_0 140 mg/kg Mouse, Oral LD_{50} 190 mg/kg Human, Oral LDL_0 200 mg/kg

*Current OSHA PEL and ACGIH (1983) TLV. STEL is 2.0 mg/m^3 (dust or mist, as Cu)

SECTION III. PHYSICAL DATA

	$CuCl_2$	$CuCl_2 \cdot 2H_2O$
Boiling pt, 1 atm, deg C (at >300 C (decomposes to CuCl and Cl2)	993 (dec)	loses water 70-200C
Specific gravity, 25/4C	3.39	2.54
Melting point, deg C	620	100
Soluble in water, @ 0 C, g/100 ml	70.6	110.4
pH (0.2 molar soln)	3.6	3.6
Molecular weight	134.4	170.5
Appearance & Odor	Yellow to brown hygroscopic powder. May have an HCl odor	Fine, light blue-green needle-like crystal

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits in Air	Lower	Upper
None				

Extinguishing media: Non-combustible. Use any media appropriate for the surrounding fire. Use water spray to cool fire-exposed containers. Material exposed in a fire situation will decompose at extreme temperatures releasing chlorine gas.

Firefighters should wear self-contained breathing apparatus and protective clothing.

SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature under normal storage and handling conditions. It does not undergo hazardous polymerization.

Cupric Chloride ($CuCl_2$) is hygroscopic. Forms dihydrate in moist air.

A mixture of either potassium or sodium with cupric chloride produces a strong explosion on impact. Incompatible with hydrazine and nitromethane. Corrosive to aluminum with moisture present.

Aqueous solutions are acidic (See Section III).

Thermal-oxidative degradation can produce chlorine gas, which can also be generated on reaction with strong oxidizing agents.

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SECTION VI. HEALTH HAZARD INFORMATION

TLV 1.0 mg/m^3 (See Sect II) (dust or mist, as Cu)

Inhalation of dusts or mists results in coughing, sore throat and irritation of the upper respiratory tract. Skin contact can cause redness and irritation with possible dermatitis. Eye contact will cause redness, pain and possible blurred vision from its corrosive effects. Ingestion will cause abdominal pain, vomiting and diarrhea. Copper is an essential trace element in the body, but can be toxic in excessive exposures.

FIRST AID:

Eye Contact: Irrigate with running water for 15 min. including under eyelids.
Skin Contact: Wash affected area with soap and water.
Inhalation: Remove to fresh air.
Ingestion: Give several glasses of water to drink to dilute. Induce vomiting.

Seek medical assistance for further treatment, observation and support after first aid.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel. Provide adequate ventilation. Clean up personnel need protection against possible inhalation of dust and contact with solid or solution (corrosive). Carefully sweep up dry material and collect in a suitable container for reclamation or disposal, avoiding dusty conditions. Avoid flushing directly to sewers (except, possibly, a few grams or trace residues with high dilution) or surface waters. Material dissolved in water can be neutralized with soda ash to precipitate copper; separate precipitate for disposal.

DISPOSAL: Waste may be buried in an approved landfill.
Follow Federal, State and Local regulations.
EPA(CWA) Reportable Quantity is 10 lbs. (40 CFR 117)

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate general exhaust ventilation to meet TLV requirements. Exhaust filtration to collect dust may be required or desirable.
Use a NIOSH approved dust mask when handling large quantities of material or where dusting conditions exist.
Wear protective clothing (rubber gloves, apron, boots) appropriate for the work situation to avoid skin contact. Use chemical safety goggles to prevent eye contact.
Eyewash station and washing facilities should be accessible to areas of use and handling.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in tightly closed containers under dry conditions to preserve anhydrous salt or the crystalline hydrate. Protect containers from physical damage.
Use good housekeeping techniques. Copper chloride solutions are acidic and corrosive.
Avoid inhalation of dust or mist. Prevent skin and eye contact. Do not ingest. Wash hands and face thoroughly after handling. Follow good hygiene practices.

DOT Classification: ORM-B I.D. No. UN2802 Label: (None)
DATA SOURCE(S) CODE: 1,2,4-7,9,10,12,14

APPROVALS: MIS/CRD J. M. Nielsen
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