

## Chromium Copper Solution

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Chromium Copper Solution

**Synonyms/Generic Names:** None

**Product Number:** 8458

**Product Use:** Industrial, Manufacturing or Laboratory use

**Manufacturer:** Columbus Chemical Industries, Inc.  
N4335 Temkin Rd.  
Columbus, WI. 53925

**For More Information Call:** 920-623-2140 (Monday-Friday 8:00-4:30)  
[www.columbuschemical.com](http://www.columbuschemical.com)

**In Case of Emergency Call:** CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

### 2. HAZARDS IDENTIFICATION

**Hazards Not Otherwise Classified (HNOC):** Oxidizer

**Target Organs:** Upper respiratory tract, gastrointestinal tract

**Signal Word:** Danger

**Pictograms:**



**GHS Classification:**

Acute toxicity, Oral	Category 3
Acute toxicity, Dermal	Category 2
Acute, Inhalation	Category 4
Skin corrosion/irritation	Category 1A
Serious eye damage/eye irritation	Category 1
Skin Sensitization	Category 1
Respiratory sensitization	Category 1
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity-repeated exposure	Category 1
Hazardous to the aquatic environment, long-term hazard	Category 2

**GHS Label Elements, including precautionary statements:****Hazard Statements:**

H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or exposure.
H411	Toxic to aquatic with long-lasting effects.

**Precautionary Statements:**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe fume/mist/vapors/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/face protection/protective clothing/eye protection.
P285	In case of inadequate ventilation, wear respiratory protection.
P301+P330+ 331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P272+P363	Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.
P304+P341	IF INHALED: if breathing is difficult, remove victim to fresh air and keep at rest in position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.
P391	Collect spillage. Hazardous to the aquatic environment.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

**Potential Health Effects**

<b>Eyes</b>	Causes severe eye burns.
<b>Inhalation</b>	Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Skin</b>	May be fatal if absorbed through skin. Causes skin burns.
<b>Ingestion</b>	Toxic if swallowed.

**NFPA Ratings**

<b>Health</b>	3
<b>Flammability</b>	0
<b>Reactivity</b>	1
<b>Specific hazard</b>	Not Available

**HMIS Ratings**

<b>Health</b>	3
<b>Fire</b>	0
<b>Reactivity</b>	1

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Water	Balance	7732-18-5	231-791-2	H <sub>2</sub> O	18.00 g/mol
Chromium Trioxide	10-12	1333-82-0	215-607-8	CrO <sub>3</sub>	99.99 g/mol
Cupric Nitrate, Hydrate	1-3	19004-19-4	221-838-5	Cu(NO <sub>3</sub> ) <sub>2</sub> • 2½ H <sub>2</sub> O	232.59 g/mol

### 4. FIRST-AID MEASURES

<b>Eyes</b>	Immediately rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
<b>Inhalation</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If experiencing respiratory symptoms: Get medical attention immediately.
<b>Skin</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. If skin irritation or rash occurs: Get medical attention immediately.
<b>Ingestion</b>	<b>Do Not Induce Vomiting!</b> Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.
<b>General Advice</b>	Get medical advice / attention if you feel unwell. Show safety data sheet to medical personnel.

### 5. FIRE-FIGHTING MEASURES

<b>Suitable (and unsuitable) extinguishing media</b>	Product is not flammable. Use appropriate media for adjacent fire (foam, dry powder, carbon dioxide, sand) Cool containers with water. Do not use a heavy water stream.
<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
<b>Specific hazards arising from the chemical</b>	Emits toxic fumes (oxides of chromium, copper, nitrogen) under fire conditions. (See also Stability and Reactivity section).

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures</b>	Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe fume, mist or vapors. See section 8 for recommendations on the use of personal protective equipment. Emergency procedure shall be executed only by specialists or authorized personnel.
<b>Environmental precautions</b>	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
<b>Methods and materials for containment and cleaning up</b>	Neutralize spill Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe fume/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation, wear respiratory protection. See section 8 for recommendations on the use of personal protective equipment. Wash thoroughly after using. Keep container closed when not in use.

### Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Chromium(VI)	0.0002 mg/m <sup>3</sup>	TWA - Inhalation	ACGIH®TLV®
	0.0005 mg/m <sup>3</sup>	STEL - Inhalation	ACGIH®TLV®
	0.005 mg/m <sup>3</sup>	TWA	OSHA PELs
Copper, fume, as Cu	0.0002 mg/m <sup>3</sup>	TWA	NIOSH RELs
	0.2 mg/m <sup>3</sup>	TWA	ACGIH®TLV®
	0.1 mg/m <sup>3</sup>	TWA	OSHA PELs
	0.1 mg/m <sup>3</sup>	TWA	NIOSH RELs

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit usually 15 minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

### Personal Protection

<b>Eyes</b>	Wear chemical safety glasses or goggles with face shield.
<b>Inhalation</b>	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
<b>Skin</b>	Wear nitrile or rubber gloves, and complete body suit.
<b>Other</b>	Handle in accordance with good industrial hygiene and safety practices.

### Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, amber liquid
Odor	Not Available
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available

Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Density	1.07 – 1.10 at 20°C
Solubility (ies)	Not Available
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	May react violently with reducing agents.
<b>Conditions to Avoid</b>	Direct sunlight. Extremely high or low temperatures.
<b>Incompatible Materials</b>	Strong reducing agents. Strong bases. Alcohol. Aldehydes, Aluminum, combustible materials. Metals.
<b>Hazardous Decomposition Products</b>	Chromium oxides, copper oxides, nitrogen oxides.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### *Chromium Trioxide*

<b>Skin</b>	LD50 – Rabbit – 57 mg/kg
<b>Eyes</b>	Not Available
<b>Respiratory</b>	LC50 – Rat – 217 mg/kg – 4h
<b>Ingestion</b>	LD50 – Rat – 52 mg/kg

#### *Cupric Nitrate, Hydrate*

<b>Skin</b>	Not Available
<b>Eyes</b>	Not Available
<b>Respiratory</b>	Not Available
<b>Ingestion</b>	LD50 – Rat – 940 mg/kg

#### *Chromium Copper Solution*

<b>ATE - Oral</b>	429 mg/kg
<b>ATE - Dermal</b>	476 mg/kg

### Carcinogenicity

<b>IARC</b>	1-Group 1: Carcinogenic to humans (Chromium(VI)).
<b>ACGIH</b>	A1: Confirmed for human (Chromium VI).
<b>NTP</b>	K: Known to be human carcinogen (Chromium (VI)).
<b>OSHA</b>	1910.1026 (Chromium (VI)).

### Signs & Symptoms of Exposure

<b>Skin</b>	Redness, burns, itching, pain.
<b>Eyes</b>	Causes serious burns, watering eyes, pain.
<b>Respiratory</b>	Coughing, shortness of breath, burning, choking, wheezing, headache.
<b>Ingestion</b>	Burns, nausea, vomiting, pain, severe diarrhea.

<b>Chronic Toxicity</b>	Adverse reproductive effects. Affect genetic material. May cause cancer.
<b>Teratogenicity</b>	May alter genetic material.

<b>Mutagenicity</b>	Mutagenic for mammalian somatic cells, bacteria, and yeast.
<b>Embryotoxicity</b>	May cause reproductive disorders.
<b>Specific Target Organ Toxicity</b>	Kidneys, liver, gastrointestinal tract, upper respiratory tract, skin, eyes.
<b>Reproductive Toxicity</b>	May cause reproductive disorders.
<b>Respiratory/Skin Sensitization</b>	Not Available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### *Chromium Trioxide*

<b>Aquatic Vertebrate</b>	LC50 – Tilapia mossambica – 21.05 – 141.38 mg/l – 96h LC50 – Leuciscus idus (Golden orfe) – 100 mg/l – 48h
<b>Aquatic Invertebrate</b>	EC50 – Daphnia magna (Water flea) – 0.8 mg/l – 48h
<b>Terrestrial</b>	Not Available

#### *Cupric Nitrate, hydrate*

<b>Aquatic Vertebrate</b>	LC50 – Pleuronectes americanus (winter flounder) – 0.057 – 0.1061 mg/l – 96h
<b>Aquatic Invertebrate</b>	EC50 – Moina dubia (water flea) – 0.037 – 0.044 mg/l – 48h
<b>Terrestrial</b>	Not Available

<b>Persistence and Degradability</b>	Not Available
<b>Bioaccumulative Potential</b>	Not Available
<b>Mobility in Soil</b>	Not Available
<b>PBT and vPvB Assessment</b>	Not Available
<b>Other Adverse Effects</b>	Very toxic to aquatic life.

## 13. DISPOSAL CONSIDERATIONS

<b>Waste Product or Residues</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
<b>Product Containers</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

## 14. TRANSPORTATION INFORMATION

US DOT	UN2922, Corrosive liquids toxic, n.o.s. (Chromium trioxide, Cupric nitrate) 8, (6.1) pg II
TDG	UN2922, CORROSIVE LIQUID TOXIC, N.O.S. (CHROMIUM TRIOXIDE, CUPRIC NITRATE) 8, (6.1) PG II
IMDG	UN2922, CORROSIVE LIQUID TOXIC, N.O.S. (CHROMIUM TRIOXIDE, CUPRIC NITRATE) 8, (6.1) PG II
Marine Pollutant	No
IATA/ICAO	UN2922, Corrosive liquids toxic, n.o.s. (Chromium trioxide, Cupric nitrate) 8, (6.1) pg II

## 15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA Active inventory.
DSL / NDSL	All ingredients are listed on the DSL inventory.
California Proposition 65	Listed: Chromium (hexavalent compounds)
Massachusetts: Toxic or Hazardous Substance List	Listed: Chromium Anhydride, Cupric Nitrate
New Jersey: Right to Know Hazardous Substance List	Listed: Chromic Trioxide, Cupric Nitrate
Pennsylvania: Hazardous Substance List	Listed: Chromium Oxide
Rhode Island: Hazardous Substance List	Listed: Chromic Acid, Cupric Nitrate
SARA 302	Listed: Chromium Trioxide
SARA 304	Listed: Chromium Trioxide
SARA 311	Physical Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Physical Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Listed: Chromium Compounds, Cupric Nitrate
WHMIS Canada	Class D1A: Material causing immediate and serious toxic effects. Class D2B: Material causing other toxic effects. Class E: Corrosive Material

## 16. OTHER INFORMATION

Revision	Date
Created on	08/25/2022

The information provided in this Safety Data Sheet ("SDS") is correct to the best of our knowledge, information and belief at the date of publication. The information in this SDS relates only to the specific Product identified under Section 1, and does not relate to its use in combination with other materials or products, or its use as to any particular process. Those handling, storing or using the Product should satisfy themselves that they have current information regarding the particular way the Product is handled, stored or used and that the same is done in accordance with federal, state and local law. WE DO NOT MAKE ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE. WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, INJURY, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT.