

Safety Data Sheet

29 CFR 1910.1200

Section 1: Company and Product Identification

Product Name: Ruthenium (III) Chloride Solution

Product Code: 8002-S

Company: Colonial Metals, Inc.
 Building 20
 505 Blue Ball Road
 Elkton, MD 21921 United States
 Company Contact: EHS Director
 Telephone Number: 410-398-7200
 FAX Number: 410-398-2918
 E-Mail : info@colonialmetals.com
 Web Site: www.colonialmetals.com



www.colonialmetals.com

Emergency Response: Supplier Emergency Contacts & Phone Number
 Chemtrec: 800-424-9300
 World Wide - Call COLLECT to U.S: 703-527-3887

Section 2: Hazards Identification

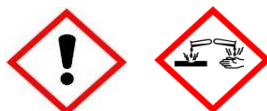
GHS07

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Hazard Pictograms:



Signal Word: Danger

Hazard Category: Serious eye damage/eye irritation Cat 1
 Skin corrosion/irritation Cat 1
 Acute tox, inh. Cat 4
 Acute tox, dermal Cat 5
 Acute tox, oral Cat 4

Hazard Statements: H318: Causes serious eye damage
 H314: Causes severe skin burns and eye damage
 H332: Harmful if inhaled
 H313: May be harmful in contact with skin
 H302: Harmful if swallowed

Precautionary Statements: P301+310: IF SWALLOWED: Immediately call a POISON CENTER or
 P337+313: If eye irritation persists get medical advice/attention
 P308+313: IF exposed or concerned: Get medical advice/attention

Hazards not otherwise classified:

Conditions Aggravated By Exposure

May cause irritation of the respiratory system. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization.

Conditions Aggravated By Overexposure

To the best of our knowledge, the chemical, the physical, and toxicological properties have not been thoroughly investigated.

Section 3: Composition / Information on Ingredients

Hazardous substance (name)	Hazard Category	CAS#	Weight %
Ruthenium (III) Chloride Solution	Corrosive	14898-67-0	1 - 25
Chemical Family: Platinum Group Metal Salts Chemical Formula: RuCl ₃ Synonyms: Ruthenium (III) Chloride			

Section 4: First Aid Measures

General Info: Consult a Physician. Show this safety data sheet to the doctor in attendance. **Note To Physician**
Treat symptomatic symptoms.

Notable Exposure symptoms: Can cause burns. May cause sensitization by skin contact or inhalation. Irritation to skin, eyes and areas of contact.

If ingested: Rinse mouth. Seek immediate medical attention. Clear the airway and administer artificial respiration if not breathing.
If swallowed, do not induce vomiting unless directed to do so by medical personnel.

If inhaled: Remove the victim from the contaminated area while protecting yourself from exposure by wearing an appropriate respirator. Put a similar respirator on the victim if possible. Get medical attention immediately.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Get immediate medical attention.

Skin contact: Flush area for 15 minutes with water and wash with soap and water. If discomfort occurs or persists, contact a physician. Remove contaminated clothing and shoes and wash before reuse.

Section 5: 5. Fire Fighting Measures

General Info: No usual fire or explosion hazards

Extinguishing Method / Equipment: In case of fire use dry chemical. Suitable: Noncombustible. Use appropriate media for surrounding fire conditions

Hazardous Decomposition Info: Constituents associated with burning / combustion are to be considered toxic. Firefighters should wear self-contained breathing apparatus and full protective gear.

Section 6: 6. Accidental Release Measures

Personal precautions and procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate respiratory protective equipment and clothing during clean-up. Avoid breathing dust. Ventilate area if easy to do so. Contact local authorities if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Containment Equipment and Procedures: Large Spills: Contain actively spilling material if safe and easy to do so. Do not let product enter drains.

Small Spills: can be mixed with vermiculite or sodium carbonate and swept up. Neutralize with dilute alkalis solution or use soda ash or lime. Soak up and place in sealed container for reclamation or disposal.

Cleanup Procedures: Contain spillage and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations.

Section 7: Handling and Storage

Safe Handling Precautions: Do not handle until all safety precautions have been read and understood. Keep containers tightly closed. Ensure adequate ventilation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment and wash thoroughly after handling. Keep away from ignition sources.

Recommendations for Storage: Store in cool, dry area in a tightly closed product container away from sources of ignition or flame in Corrosives area. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Incompatibilities: Store away from strong acids or oxidizing agents. Refer to Section 10.

Section 8: Exposure Control / Personal Protection

General / Ventilation: Local Exhaust: Required in handling area**Engineering Mechanical:** Desirable to insure concentration of material below TLV/TWA levels**Controls:** Other: Closed Ventilation system - Dust (Laboratory Fume Hood)**Work Clothing:** Protective work clothing which covers skin and prevents exposures.**Eye/face protection:** Wear safety glasses with side shields or goggles or face shield.**Skin Protection:** Wear chemical resistant gloves.**Respiratory** Utilize organic vapor respirator if airborne levels are not maintained or if ventilation is inadequate.**Protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).**Additional** Observe good chemical hygiene practices. Do not smoke or eat while using this product. Wash**Information:** hands or exposed skin after using the product.**Section 9: Physical and Chemical Properties**

State: Liquid	Melting Point: N/A	Freezing Point: N/A
Color: Dark Brown	Boiling Point/Range: N/A	pH: N/A
Molecular Wt.: N/A	Odor: Hydrogen Chloride Odor	Water Soluble: Soluble
Specific Gravity: N/A	Flash Point: N/A	Part. Coeff (n-octanol/water): N/A
Upper Flam Limits: N/A	Lower Flam Limits: N/A	Vapor Pressure: N/A
VOC Content (lbs/gal): N/A	Viscosity: N/A	Autoignition Temp: N/A

Section 10: Stability and Reactivity

General: This product is stable and non-reactive under normal conditions of use. Product is not subject to hazardous polymerization. Avoid open flame and ignition sources.**Stability:** Hygroscopic**Conditions to Avoid:** Hygroscopic: absorbs moisture or water from the air.**Incompatible materials:** Most metals, alkalis, metallic oxides, strong oxidants, and organics. Also water carbonates, cyanides, and sulfides.**Decomposition products:** Hydrogen chloride, chlorine, carbon monoxide, carbon dioxide, ruthenium, oxides of ruthenium**Section 11: Toxicological Information**

General Information: To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.**Toxicological Information (product):** No data available

Likely Routes of Exposure: Eye Contact
Skin Contact
Inhalation
Ingestion - possible, but considered unlikely.

Toxicological Information (contained substances)**Carcinogenicity or mutagenicity:** To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.**Sensitization:** Product is not expected to be a sensitizer.**Other Notes:** None

Section 12: Ecological Information

General information: No data available

Aquatic toxicity: No data available

Degradation / Mobility info: No specific data available.

Bioaccumulative potential: No specific data available.

Section 13: Disposal Information

Product disposal: Place in a sealed container. Consult Federal EPA, State and local regulations for proper disposal/recycle/reclamation
NOTE: Chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.

Container disposal: Treat empty containers with extra care. Consult waste contractor.

Other considerations: No further information.

Section 14: Transport Information

DOT: Proper Shipping Name
Corrosive Liquid, n.o.s. (contains ruthenium (III) chloride solution)
Hazard Class
8
Secondary Hazard Class
NA
DOT Identification Number
1760
DOT Shipping Label
Corrosive Liquid, n.o.s. (contains ruthenium (III) chloride solution)
Freight Class
See 49 CFR
Packaging Exceptions
See 49 CFR
Packaging Requirements
See 40 CFR

IMO/IMDG: No data available

IATA: Proper Shipping Name: Corrosive Liquid, n.o.s. (contains ruthenium (III) chloride solution)
IATA UN#: 3260
Hazard Class: 8
Packaging Group: II

Comments: None

Section 15: Regulatory Information

TSCA: Listed in the TSCA inventory as RuCl₃ (CAS# 10049-08-8).

SARA 313 This product does not contain any ingredients regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.

Canadian DSL: This product has been classified in accordance with the hazard criteria of CPR, and the MSDS contains all the information required by the CPR.

European Union (EU) Symbol of Danger: C

Regulatory Information: Indication of Danger: Corrosive
R: 34

Risk Phrase: Causes burns.

S: 26 36/37/39 45

Safety Phrase: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately. (show the label where possible)

Other International US Classification and Label Text**Regulations:** Indication of Danger: CorrosiveRisk Phrase: Causes burns.Safety Phrase: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately. (show the label where possible).

Section 16: Other Information

NFPA Rating

Health: 3

Fire: 0

Reactivity: 1

COR

HMIS Rating

Health: 3

Fire: 0

Reactivity: 1

Personal

Protection: J

Precautionary Label

Corrosive

Disclaimer: In compliance with the OSHA Hazard communication Standard, 2.9 C.F.R 1910.1200, we are providing you with a Materials Safety Data Sheet (MSDS) for the hazardous material you are purchasing.

It is your responsibility to educate your employees on the safe use of the hazardous material. With this in mind, a copy should be forwarded to the supervisor of the user or to the user themselves, and copy should be retained in your files for future reference.

Colonial Metals, Inc. makes no presentation as to the accuracy of the information in the MSDS. The information is believe to be correct; however, you (the customer), should preform your own investigation and independent verification. If you resell the product, you are responsible to forward the information in the MSDS to your customer.

Colonial Metals, Inc.

SDS Author: John Kerchner**Version Date:** 7/30/2015