

## Safety Data Sheet

### 29 CFR 1910.1200

#### Section 1: Company and Product Identification

**Product Name:** Ruthenium(III) chloride anhydrous

**Product Code:** 8001

**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

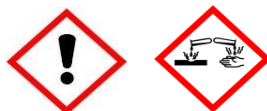
GHS07

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**Hazard Pictograms:**



**Signal Word:** Danger

**Hazard Category:** Aspiration hazard Cat 2  
 Skin corrosion/irritation Cat 1  
 Serious eye damage/eye irritation Cat 1

**Hazard Statements:** H305: May be harmful if swallowed and enters airways  
 H314: Causes severe skin burns and eye damage  
 H318: Causes serious eye damage

**Precautionary Statements:** P260: Do not breathe dust/fume/gas/mist/vapors/spray  
 P264: Wash thoroughly after handling  
 P270: Do not eat, drink or smoke when using this product  
 P271: Use only outdoors or in a well-ventilated area  
 P272: Contaminated work clothing should not be allowed out of the workplace  
 P280: Wear protective gloves/protective clothing/eye protection/face protection  
 P284: Wear respiratory protection

**Hazards not otherwise classified:** Corrosive to skin and eyes. Material has a strong odor of chlorine. Inhalation will lead to burning of the respiratory tract  
**Conditions Aggravated By Exposure**  
 Corrosive to skin, eyes, mucous membranes, and respiratory tract.  
**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 anhydrous	Irritant - Corrosive	10049-08-8	100
<b>Product Name:</b> Ruthenium (III) Chloride Anhydrous <b>Chemical Name:</b> Same as above <b>Chemical Family:</b> Metal Halide <b>Chemical Formula:</b> RuCl <sub>3</sub>			

**Section 4: First Aid Measures**

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**General Info:** Consult a Physician. Show this safety data sheet to the doctor in attendance.

**Notable Exposure symptoms:** 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. Contact a physician immediately. Remove contaminated clothing and shoes and wash before reuse.

**Section 5: Fire Fighting Measures**

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**General Info:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

**Extinguishing Method / Equipment:** Use water spray, dry chemical, carbon dioxide, or appropriate foam. Do not use organics

**Hazardous Decomposition Info:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Section 6: Accidental Release Measures**

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**Personal precautions, protective equipment 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. Sweep up and placed in a proper vessel for recovery or disposal. Avoid raising dust.  
Procedures: Ventilate and wash spill site after cleanup is complete..

Small Spills: Sweep or soak up and place in sealed container. Taking care to avoid dusting.

**Cleanup Procedures:** Small spills can be mixed with vermiculite or sodium carbonate and swept up

**Section 7: Handling and Storage**

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**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/vapor. 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. Keep away from heat and direct sunlight.

**Recommendations for Storage:** Store in a dry place. Store in original vented container

**Incompatibilities:** Organics, especially acetone and alcohol. Strong oxidizing agents

**Section 8: Exposure Control / Personal Protection**

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**General / Ventilation:** Local Exhaust: Required in handling area

**Engineering Controls:** 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 Protection:** NIOSH approved chemical cartridge respirator for particulates and dust or self-contained breathing apparatus with full face shield.

**Additional Information:** Observe good chemical hygiene practices. Do not smoke or eat while using this product. Wash hands or exposed skin after using the product.

**Section 9: Physical and Chemical Properties**

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<b>State:</b> Solid	<b>Melting Point:</b> N/A	<b>Freezing Point:</b> N/A
<b>Color:</b> Black Powder	<b>Boiling Point/Range:</b> N/A	<b>pH:</b> 1-2
<b>Molecular Wt.:</b> 207.43	<b>Odor:</b> Strong chlorine odor	<b>Water Solubility:</b> Soluble
<b>Specific Gravity:</b> 6.97 g/cm <sup>3</sup>	<b>Flash Point:</b> N/A	<b>Part. Coeff (n-octanol/water):</b> N/A
<b>Upper Flam Limits:</b> N/A	<b>Lower Flam Limits:</b> N/A	<b>Vapor Pressure:</b> N/A
<b>VOC Content (lbs/gal):</b> N/A	<b>Viscosity:</b> N/A	<b>Autoignition Temp:</b> N/A

**Section 10: Stability and Reactivity**

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**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:** Material may absorb water from the atmosphere on prolonged exposure.

**Incompatible materials:** Strong reducing agents

**Decomposition products:** Hydrogen chloride and chlorine

**Section 11: Toxicological Information**

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**General Information:** To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.

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

**Toxicological Information (contained substances)****Miscellaneous Toxicological Information**

Intraperitoneal (rat); LD50: 360 mg/kg

**Sensitization:** Product is not expected to be a sensitizer.

**Section 12: Ecological Information**

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**General information:** No data available

**Section 13: Disposal Information**

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**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.

**Section 14: Transport Information**

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**DOT: Proper Shipping Name**

Corrosive solid, Acidic, inorganic, n.o.s. (Ruthenium(III) chloride anhydrous)

**Hazard Class**

8

**DOT Identification Number**

3260

**DOT Shipping Label**

Corrosive

**IMO/IMDG: Packaging Requirements**

PG II - No data available

**IATA:** Same as DOT 49 CFR regulations. Consult IATA before shipping

**Section 15: Regulatory Information**

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**TSCA:** All ingredients of this product are listed or are excluded from listing under the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory

**SARA: SARA Section 313 Notification:**

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 Regulatory Information:** All ingredients of this product comply with the New Substances Notification requirements of the Canadian Environmental Protection Act (CEPA)

**European Union (EU) R36/37/38 - Irritating to eyes, respiratory system and skin**

**Regulatory S24/25 - Avoid contact with skin and eyes**

**Information: S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice**

**S9 - Keep container in a well-ventilated place**

**Section 16: Other Information**

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**NFPA Rating**

Health: 2

Fire: 0

Reactivity: 0

**HMIS Rating**

Health: 2

Fire: 0

Reactivity: 0

Personal

Protection: C

**Precautionary Label**

Irritant - 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.

**Version Date:**

6/20/2016