

## Safety Data Sheet

### 29 CFR 1910.1200

#### Section 1: Company and Product Identification

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**Product Name:** 1,3-cyclohexadiene Ruthenium tricarbonyl

**Product Code:** 8038

**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

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**Hazard Pictograms:**



**Signal Word:** Warning

**Hazard Category:** Acute tox, oral Cat 5  
 Skin corrosion/irritation Cat 3  
 Serious eye damage/eye irritation Cat 3  
 Aspiration hazard Cat 2

**Hazard Statements:** H303: May be harmful if swallowed  
 H316: Causes mild skin irritation  
 H320: Causes eye irritation  
 H305: May be harmful if swallowed and enters airways

**Precautionary Statements:** P202: Do not handle until all safety precautions have been read and understood  
 P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking  
 P241: Use explosion-proof electrical/ventilating/light/.../equipment  
 P264: Wash thoroughly after handling  
 P280: Wear protective gloves/protective clothing/eye protection/face protection  
 P302+334: IF ON SKIN: Immerse in cool water/wrap in wet bandages  
 P405: Store locked up  
 P501: Dispose of contents/container in accordance with local/national/international rules.  
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

**Hazards not otherwise classified:**

**Conditions Aggravated By Exposure:**

Any respiratory condition such as asthma. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization. Platinum salts can cause a condition called Platnosis, effecting respiratory system.

**Conditions Aggravated By Overexposure:**

May result in pulmonary fibrosis. 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 %
1,3-cyclohexadiene Ruthenium tricarbonyl	Irritant	12108-25-7	100
<b>Chemical Family:</b> Platinum Group Metal Organometallic Complex <b>Chemical Formula:</b> C <sub>9</sub> H <sub>8</sub> O <sub>3</sub> Ru			

**Section 4: First Aid Measures**

**General Info:** Irritating to respiratory tract, skin & eyes. Maybe harmful if swallowed.

**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 if victim is having problems breathing.

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

**Skin contact:** Take off immediately all contaminated clothing. Rinse with water thoroughly. Get medical advice if irritation develops or persists.

**Section 5: Fire Fighting Measures**

**Extinguishing Method / Equipment:** Suitable: Water spray. Dry chemical powder, carbon dioxide, or appropriate foam

**Hazardous Decomposition Info:** Firefighters should wear self-contained breathing apparatus and full protective gear. Can decompose to emit toxic, irritating fumes of carbon monoxide, carbon dioxide and metal oxide.

**Section 6: Accidental Release Measures**

**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 protective equipment and clothing during clean-up. Avoid breathing dust. Ventilate area if easy to do so. For personal protection, see section 8 of the SDS.

**Containment Equipment and Procedures:** Contain actively spilling material if safe and easy to do so, avoid generating dust. Collect material and dispose.

**Cleanup Procedures:** Collect all contaminated media, or other cleanup materials into a waste receptacle. If cleaning surface is necessary, utilize vacuum cleaner, provided adequate ventilation is available.

**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. Protect against electrostatic charges

**Recommendations for Storage:** Store in cool, dry area in a tightly closed product container away from direct sunlight/heat. Store in sealed glass container, plastic, or plastic liners, in a cool, well ventilated, dry area away from air. Store under inert gas for long term stability.

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

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

**General / Engineering Controls:** Use with properly operating chemical fume hood designed for hazardous chemicals with adequate local and general exhaust ventilation.

**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:** Utilize organic vapor respirator if airborne levels are not maintained or if ventilation is inadequate.

**Section 9: Physical and Chemical Properties**

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<b>State:</b> Liquid	<b>Melting Point:</b> 71.6 °F 22 °C	<b>Specific Gravity:</b> N/A
<b>Color:</b> Light Yellow	<b>Boiling Point/Range:</b> Unknown	<b>pH:</b> N/A
<b>Molecular Wt.:</b> 319.32	<b>Odor:</b> Unpleasant Odor of Organic Origin	<b>Water Solubility:</b> Very low solubility in H <sub>2</sub> O; Moderate in Alcohol; very soluble in organics.
<b>Evaporation rate:</b> N/A	<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.
- Incompatible materials:** Oxidizing agents and air
- Decomposition products:** Can decompose to emit toxic, irritating fumes of carbon monoxide, carbon dioxide and metal oxide.

**Section 11: Toxicological Information**

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**General Information:** The acute oral LD-50 Study was conducted

**Toxicological Information (product):** Not available

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

**Toxicological Information (contained substances)**

**Carcinogenicity or mutagenicity:** No data available

**Sensitization:** Platinum salts, especially ionic platinum halogeno complexes, may cause severe allergic reactions.

**Other Notes:** Any respiratory condition such as asthma. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization. Platinum salts can cause a condition called Platnosis, effecting respiratory system

**Section 12: Ecological Information**

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**General information:** Product not tested.

**Aquatic toxicity:** No specific data available. Do not allow large quantities of product to reach water, ground water, water courses or sewer systems.

**Degradation / Mobility info:** No specific data available.

**Bioaccumulative potential:** No specific data available.

**Section 13: Disposal Information**

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**Product disposal:** Dispose of product in accordance with local, regional, and national regulations. Consult with a licensed professional waste contractor to dispose of this material.

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

**Other considerations:** Chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.

**Section 14: Transport Information**

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**DOT:** Considered non-hazardous for transport.

**IMO/IMDG:** Considered non-hazardous for transport. Consult regulations

**IATA:** Considered non-hazardous for transport. Consult regulations

**Section 15: Regulatory Information**

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

**SARA 313** Acute Health Hazard

**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.

DSL: No  
NDSL: No

**European Union (EU) S:** 24/25-22

**Regulatory Information:** **Safety Statements:** Avoid contact with skin and eyes. Do not breathe dust

**Section 16: Other Information**

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**NFPA Rating**

Health: 1  
Fire: 1  
Reactivity: 1

**HMIS Rating**

Health: 1  
Fire: 1  
Reactivity: 1  
Personal  
Protection: J

**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:** 6/8/2016