

Safety Data Sheet

29 CFR 1910.1200

Section 1: Company and Product Identification

Product Name: Chloro(Cyclopentadienyl)[Bis(Diphenylphosphino)methane]Ruthenium(II)

Product Code: 8107

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: 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: Warning

Hazard Category: Serious eye damage/eye irritation Cat 3
 Acute tox, dermal Cat 5
 Acute tox, inh. Cat 5
 Acute tox, dermal Cat 5
 Acute tox, oral Cat 5
 Acute tox, inh. Cat 5

Hazard Statements: H320: Causes eye irritation
 H313: May be harmful in contact with skin
 H333: May be harmful if inhaled
 H313: May be harmful in contact with skin
 H303: May be harmful if swallowed
 H333: May be harmful if inhaled

Precautionary Statements: P261: Avoid breathing dust/fume/gas/mist/vapors/spray
 P264: Wash thoroughly after handling
 P270: Do not eat, drink or smoke when using this product
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 P302+352: IF ON SKIN: Wash with soap and water
 P312: Call a POISON CENTER or doctor/physician if you feel unwell
 P332+313: If skin irritation occurs: Get medical advice/attention
 P337+313: If eye irritation persists get medical advice/attention
 P501: Dispose of contents/container in accordance with local/regional/national/international

Hazards not otherwise classified: This product contains no hazardous ingredients when evaluated by criteria established in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Hazardous substance (name)	Hazard Category	CAS#	Weight %
Chloro(Cyclopentadienyl)[Bis(Diphenylphosphino)methane]Ruthenium(II)	Irritant	71397-33-6	100
Product Name: Chloro(Cyclopentadienyl)[Bis(Diphenylphosphino)methane]Ruthenium(II)			
Chemical Family: Ruthenium			
Chemical Formula: C30H27C1P2Ru			

Section 4: First Aid Measures

- If ingested:** Never give anything by mouth to an unconscious victim. Rinse Mouth with Water
- If inhaled:** If inhaled, remove to fresh air. If not breathing, give artificial respiration.
- 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:** Wash affected areas with soap and water

Section 5: Fire Fighting Measures

- General Info:** Use proper safety equipment. Hazardous decomposition products formed under fire conditions: Carbon Oxides; Oxides of Phosphorus; Hydrogen Chloride Gas; Ruthenium Oxide
- Extinguishing Method / Equipment:** In case of fire, use water fog, dry chemical, CO₂, or "alcohol resistant" foam.
- Hazardous Decomposition Info:** **decomposition products formed under fire conditions:** Carbon Oxides, Oxides of Phosphorus, Hydrogen Chloride Gas, Ruthenium 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 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.
- 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:** Keep container tightly closed in a dry & well ventilated place
- Incompatibilities:** Strong oxidizing agents.

Section 8: Exposure Control / Personal Protection

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

Section 9: Physical and Chemical Properties

State: Solid	Melting Point: 190-196 °C	Freezing Point: N/A
Color: N/A	Boiling Point/Range: N/A	pH: N/A
Molecular Wt.: 586.01 g/mol	Odor: N/A	Water Solubility: N/A
Evaporation rate: 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

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.

Incompatible materials: Strong oxidizing agents.

Decomposition products: Hazardous decomposition products formed under fire conditions:
Carbon Oxides; Oxides of Phosphorus; Hydrogen Chloride Gas; Ruthenium Oxide

Section 11: Toxicological Information

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

Section 12: Ecological Information

General information: No 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.

Section 14: Transport Information

DOT: Proper Shipping Name:
Not Dangerous Goods

IATA: IATA: Non-hazardous for shipping. Consult IATA regulations before shipping.

Section 15: Regulatory Information

TSCA: All ingredients of this product are listed or are excluded from listing under the U.S. Toxic Substances Control Act

SARA SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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

European Union S3/9/14 - Keep in a cool, well ventilated place away from oxidizing agents

(EU) Regulatory Information

Section 16: Other Information

Health: 0	HMIS Rating
Fire: 0	Health: 0
Reactivity: 0	Fire: 0
	Reactivity: 0
	Personal
	Protection: E

Disclaimer: In compliance with the OSHA Hazard communication Standard, 29 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 believed to be correct; however, you (the customer), should perform 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.

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