

Safety Data Sheet

29 CFR 1910.1200

Section 1: Company and Product Identification

Product Name: Carbonylchlorohydridotris(triphenylphosphine) Ruthenium (II)

Product Code: 8069

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

Hazard Pictograms:



Signal Word:

Danger

Hazard Category:

Acute tox, inh. Cat 4
 Acute tox, dermal Cat 4
 Acute tox, oral Cat 4
 Skin corrosion/irritation Cat 2
 Serious eye damage/eye irritation Cat 2
 Specific target organ tox, single exp. Cat 3 (resp irrit)

Hazard Statements:

H332: Harmful if inhaled
 H312: Harmful in contact with skin
 H302: Harmful if swallowed
 H315: Causes skin irritation
 H319: Causes serious eye irritation
 H335: May cause respiratory irritation

Precautionary Statements:

P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
 P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove
 P261: Avoid breathing dust/fume/gas/mist/vapours/spray
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P363: Wash contaminated clothing before reuse
 P403: Store in a well ventilated place
 P501: Dispose of contents/container in accordance with local/regional/national/international rules.

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 %
Carbonylchlorohydridotris (Triphenylphosphine) Ruthenium (II)	Irritant	16971-33-8	99
Product Name: Carbonylchlorohydridotris (Triphenylphosphine) Ruthenium (II) Chemical Family: Platinum Group Metal Organometallic Complex Chemical Formula: C55H46ClOP3Ru			

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

Section 4: First Aid Measures

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

Notable Exposure: Irritation to skin, eyes and areas of contact.

symptoms:

If ingested: Not expected to be a problem in industry. However if swallowed and discomfort occurs, contact a physician. Never give anything by mouth to an unconscious victim.

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: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Method / Equipment:

Hazardous: Constituents associated with burning / combustion are to be considered toxic. Firefighters should

Decomposition Info: wear self-contained breathing apparatus and full protective gear.

Section 6: 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.

Procedures: Sweep up and place in sealed container. Taking care to avoid dusting. Person protected with full face shield and NIOSH respirator and cartridge for dust. Wear rubber boots and heavy rubber gloves. Ventilate area and wash spill site after pick up is complete.

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. 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 / Engineering Ventilation: Local Exhaust: Required in handling area**Controls:** Mechanical: Desirable to insure concentration of material below TLV/TWA levels
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 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**

State: Solid	Melting Point: 204-206 °C	Freezing Point: No Data Available
Color: Tan Powder	Boiling Point/Range: N/A	pH: No Data Available
Molecular Wt. 952.72	Odor: N/A	Water Solubility: Insoluble
Specific Gravity: N/A	Flash Point: N/A	Part. Coeff (n-octanol/water): No Data Available
Upper Flam Limits: N/A	Lower Flam Limits: N/A	Vapor Pressure: No Data Available
VOC Content (lbs/gal): N/A	Viscosity: N/A	Autoignition Temp: No Data Available

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:** Stable**Conditions to Avoid:** Material may absorb water from the atmosphere on prolonged exposure.**Incompatible materials:** Strong oxidizing agents.**Decomposition products:** Carbon monoxide, carbon dioxide, hydrogen chloride, oxides of phosphorous and/or phosphine.**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.

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:

Considered non-hazardous for transport

IATA: Same as DOT. Always consult IATA manual before shipping.**Section 15: Regulatory Information**

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.**SARA 311/312** Acute Health Hazard**Hazards****Rstate Right to Know:** Carbonylchlorohydrotris(triphenylphosphine) ruthenium(II), CAS-No.16971-33-8**Section 16: Other Information**

NFPA Rating

Health: 2

Fire: 0

Reactivity: 1

AIR

HMIS Rating

Health: 2

Fire: 0

Reactivity: 1

Personal

Protection: C

Precautionary Label

Toxic by inhalation, Harmful by ingestion, Harmful by skin absorption, Irritant

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:** Dr. Ernest Addo**Version Date:** 02/16/16