

Safety Data Sheet
29 CFR 1910.1200

Section 1: Company and Product Identification

Product Name: Ruthenium (III,III,III) Mu-oxoacetate trihydrate

Product Code: 8062

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:

Warning

Hazard Category:

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

Hazard Statements:

H320: Causes eye irritation
 H315: Causes skin irritation
 H332: Harmful if inhaled
 H312: Harmful in contact with skin
 H302: Harmful if swallowed
 H335: May cause respiratory irritation

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
 P271: Use only outdoors or in a well-ventilated area
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel
 P302+352: IF ON SKIN: Wash with soap and water
 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
 P312: Call a POISON CENTER or doctor/physician if you feel unwell
 P322: Specific measures (see First Aid Supplement on this label)
 P330: Rinse mouth
 P332+313: If skin irritation occurs: Get medical advice/attention
 P337+313: If eye irritation persists get medical advice/attention
 P362: Take off contaminated clothing and wash before reuse
 P403+233: Store in a well ventilated place. Keep container tightly closed
 P405: Store locked up
 P501: Dispose of contents/container in accordance with

Hazards not otherwise classified:

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

Section 3: Composition / Information on Ingredients

Hazardous substance (name)	Hazard Category	CAS#	Weight %
Ruthenium(III,III,III) Mu-oxoacetate trihydrate	Irritant	38998-79-7	98 - 100
Product Name: Ruthenium(III, III, III) Mu-oxoacetate trihydrate Chemical Family: Platinum group organometallic complex Chemical Formula: C7H21O15Ru3.H2O Synonyms: Hexakis mu-(acetato-O:O') -triaqua-mu3-oxotriruthenium (III)			

Section 4: First Aid Measures

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. If discomfort occurs or persists, contact a physician. Remove contaminated clothing and shoes and wash before reuse.

Section 5: Fire Fighting Measures

General Info: Use proper safety equipment. Hazardous decomposition products formed under fire conditions: Carbon Oxides; Hydrogen Chloride Gas; Ruthenium Oxide

Extinguishing In case of fire, use water fog, dry chemical, CO₂, or "alcohol resistant" foam.

Method / Equipment:

Hazardous Firefighters should wear self-contained breathing apparatus and full protective gear. Hazardous

Decomposition Info: decomposition products formed under fire conditions.

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 and Equipment and Procedures: Small spills can be mixed with vermiculite, powdered limestone, or powdered sodium bicarbonate and swept up and placed in a bag for reclaim or waste disposal. Avoid raising dust. 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 Do not handle until all safety precautions have been read and understood. Keep containers tightly

Precautions: 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 in a tightly sealed container away from heat and direct sunlight

Incompatibilities: Strong oxidizing agents.

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 Protection: NIOSH approved chemical cartridge respiratory for particulates and acid gas or self-contained breathing apparatus with full face shield

Section 9: Physical and Chemical Properties

State: Solid	Melting Point: N/A	Freezing Point: N/A
Color: Green	Boiling Point/Range: N/A	pH: N/A
Molecular Wt.: 648.44 (dry)	Odor: N/A	Water Solubility: Insoluble
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
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.

Incompatible materials: Strong oxidizing agents. Very strong oxidizing agents such as nitric acid may produce toxic volatile ruthenium tetroxide

Decomposition products: Carbon monoxide, carbon dioxide, nitrogen oxides, organic fumes, and ruthenium dioxide

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:
Non-hazardous for shipping

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

Section 15: Regulatory Information

TSCA: Not Listed

SARA SARA 302: No chemicals in this material are subject to the reporting requirements of SARA

Section 16: Other Information

NFPA Rating

Health: 2
Fire: 0
Reactivity: 0

HMIS Rating

Health: 2
Fire: 0
Reactivity: 0
Personal Protection: E

Precautionary Label

Irritant

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 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:

7/30/2015