

Safety Data Sheet
29 CFR 1910.1200

Section 1: Company and Product Identification

Product Name: Ruthenium (IV) Oxide Anhydrous

Product Code: 8004

CAS #: 12036-10-1

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 Supplier Emergency Contacts & Phone Number

Response: Chemtrec: 800-424-9300

World Wide - Call COLLECT to U.S: 703-527-3887

Section 2: Hazards Identification

GHS07

GHS05

BLANK

BLANK

Hazard Pictograms:



Signal Word: Warning

Hazard Category: Acute tox, oral Cat 4
Skin corrosion/irritation Cat 2
Serious eye damage/eye irritation Cat 2

Hazard Statements: H302: Harmful if swallowed
H315: Causes skin irritation
H319: Causes serious eye irritation

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: Danger! Causes eye irritation. May cause respiratory and digestive tract irritation. May cause skin irritation. Hygroscopic (absorbs moisture from the air).
Target Organs: Eyes.
Product incompatible with organics, especially acetone and alcohol.

Section 3: Composition / Information on Ingredients

| Hazardous substance (name) | Hazard Category | CAS# | Weight % |
|---|----------------------|------------|----------|
| Ruthenium Dioxide | Irritant - Corrosive | 12036-10-1 | 99 - 100 |
| Chemical Name: Ruthenium (IV) Oxide Anhydrous/ Ruthenium Oxide Chemical Family: Platinum Group Metal Salts Chemical Formula: RuO ₂ | | | |
| Synonyms Ruthenium Dioxide | | | |

Section 4: First Aid Measures

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

General Info: Can ignite by spontaneous combustion in the presence of organics. 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

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.

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

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/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 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. Store protected from moisture.

Incompatibilities: Organics, especially acetone and alcohol. 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: 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

| | | |
|---|---------------------------------|---|
| State: Solid | Melting Point: N/A | Freezing Point: N/A |
| Color: Black Powder | Boiling Point/Range: N/A | pH: 1-2 |
| Molecular Wt.: 133.07 | Odor: N/A | Water Solubility: Insoluble |
| Specific Gravity: 6.97 g/cm ³ | 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.

Stability: Stable

Conditions to Avoid: Dust generation, excess heat, exposure to moist air or water. Mixing with organics

Incompatible materials: Organics, especially acetone and alcohol. Strong oxidizing agents

Decomposition products: Ruthenium Oxide

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.

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

Toxicological Information (contained substances)

Carcinogenicity or mutagenicity: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

RTECS#:
CAS# 12036-10-1: VM2654000
LD50/LC50:
CAS# 12036-10-1:
Oral, mouse: LD50 = 5570 mg/kg;
Oral, rat: LD50 = 4580 mg/kg

Sensitization: Product is not expected to be a sensitizer.

Section 12: Ecological Information

General information: No data available

Aquatic toxicity: No specific 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:
Non-Hazardous

IMO/IMDG: No data available

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

Comments: None

Section 15: Regulatory Information

TSCA: This product is listed 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.

Other Regulations: Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE:

CAS# 12036-10-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

Canadian DSL: Canada - DSL/NDSL

CAS# 12036-10-1 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations. Canadian Ingredient Disclosure List

European Union (EU) Regulatory Information: **European/International Regulations:**
 European Labeling in Accordance with EC Directives
Hazard Symbols:
 XI
Risk Phrases:
 R 36 Irritating to eyes.
Safety Phrases:
 S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S 39 Wear eye/face protection.

Section 16: Other Information

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 Safety Data Sheet (SDS) 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 representation as to the accuracy of the information in the SDS. 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 SDS to your customer.

Colonial Metals, Inc.

SDS Author: Colonial Metals Inc.- An Ames Goldsmith Company

Version Date:

7/3/2019