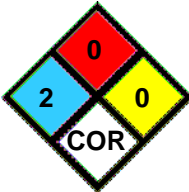


MATERIAL SAFETY DATA SHEET



Ruthenium (III) Chloride Anhydrous

Ru
Rh
Pd
Ag
Re
Os
Ir
Pt
Au

NFPA 	HMS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #00b0f0; color: white; padding: 2px;">HEALTH</td> <td style="text-align: center; padding: 2px;">02</td> </tr> <tr> <td style="background-color: #ff0000; color: white; padding: 2px;">FLAMMABILITY</td> <td style="text-align: center; padding: 2px;">0</td> </tr> <tr> <td style="background-color: #ffff00; padding: 2px;">REACTIVITY</td> <td style="text-align: center; padding: 2px;">0</td> </tr> <tr> <td style="padding: 2px;">PERSONAL PROTECTION</td> <td style="text-align: center; padding: 2px;">C</td> </tr> </table>	HEALTH	02	FLAMMABILITY	0	REACTIVITY	0	PERSONAL PROTECTION	C
HEALTH	02									
FLAMMABILITY	0									
REACTIVITY	0									
PERSONAL PROTECTION	C									

1. Product And Company Identification

<p>Supplier Colonial Metals, Inc. Building 20 505 Blue Ball Road Elkton, MD 21921 United States</p> <p>Company Contact: Wayne Sher Telephone Number: 410-398-7200 FAX Number: 410-398-2918 E-Mail: wsher@colonialmetals.com Web Site: colonialmetals.com</p>	<p>Manufacturer Colonial Metals, Inc. Building 20 505 Blue Ball Road Elkton, MD 21921 United States</p> <p>Company Contact: Wayne Sher Telephone Number: 410-398-7200 FAX Number: 410-398-2918 E-Mail: wsher@colonialmetals.com Web Site: colonialmetals.com</p>
<p>Supplier Emergency Contacts & Phone Number Chemtrac: 800-424-9300 World Wide - Call COLLECT to U.S: 703-527-3887</p>	<p>Manufacturer Emergency Contacts & Phone Number Chemtrac: 800-424-9300 World Wide - Call COLLECT to U.S: 703-527-3887</p>

Issue Date: 03/07/2011

Product Name: Ruthenium (III) Chloride Anhydrous
Chemical Name: Same as above
CAS Number: 10049-08-8
Chemical Family: Metal Halide
Chemical Formula: RuCl₃
MSDS Number: 8001
Product Code: 8001

2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
Ruthenium (III) Chloride Anyhydrous	10049-08-8	100

EMERGENCY OVERVIEW

Corrosive to skin and eyes. Material has a strong odor of chlorine. Inhalation will lead to burning of the respiratory tract.

Hazards Identification (Pictograms)**3. Hazards Identification****Primary Routes(s) Of Entry**

Inhalation: Likely
Ingestion: Likely

Eye Hazards

Corrosive Irritation

Skin Hazards

Causes burns to the skin

Ingestion Hazards

No information is available on the physiological effects of ingestion

Inhalation Hazards

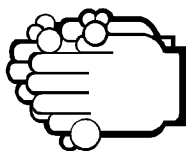
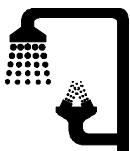
The material has a strong chlorine odor. Inhalation will lead to burning of the respiratory tract.

Conditions Aggravated By Exposure

Corrosive to skin, eyes, mucous membranes, and respiratory tract.

Conditions Aggravated By Overexposure

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

First Aid (Pictograms)**4. First Aid Measures****Eye**

Flush for 15 minutes with plenty of water. If discomfort occurs or persists, contact a physician.

Skin

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.

Ingestion

Seek medical attention immediately. Keep victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

Inhalation

Remove to fresh air immediately. If discomfort occurs or persists, contact a physician.



Ruthenium (III) Chloride Anhydrous

Ru Rh Pd Ag Re Os Ir Pt Au

Fire Fighting (Pictograms)

5. Fire Fighting Measures

Flash Point Method: NA
Flammability Class: NA

Fire And Explosion Hazards
 Use proper safety equipment. May decompose to emit toxic chlorine and hydrochloric acid fumes.

Extinguishing Media
 None required

Fire Fighting Instructions
 Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

6. Accidental Release Measures

Small spills can be mixed with vermiculite or sodium carbonate and swept up

7. Handling And Storage

Handling And Storage Precautions
 Store material in a tightly sealed bottle. If possible, handle the material in an efficient fume hood.

Handling Precautions
 Avoid breathing dust or vapor. Avoid contact with eyes. Avoid contact with skin and clothing.

Storage Precautions
 Store in a dry place. Store in original vented container.

Work/Hygienic Practices
 Wash thoroughly with soap and water after handling.

Protective Clothing (Pictograms)

8. Exposure Controls/Personal Protection

Engineering Controls
 If possible, handle the material in an efficient fume hood.

Eye/Face Protection
 ANSI approved safety glasses/goggles

Skin Protection
 Rubber/Neoprene (use compatible chemical-resistant gloves).

Ruthenium (III) Chloride Anhydrous**Ru Rh Pd Ag Re Os Ir Pt Au****8. Exposure Controls/Personal Protection - Continued****Respiratory Protection**

None required, unless large volumes are handled in a poorly ventilated area

Other/General Protection

Lab coat/apron, flame and chemical resistant protective clothing, eye wash, safety shower, and hygiene facilities for washing.

9. Physical And Chemical Properties**Appearance**

Black powder

Odor

Strong chlorine odor

Chemical Type: Mixture**Physical State:** Solid**Melting Point:** NA °C**Boiling Point:** NA °C**Specific Gravity:** NA**Molecular Weight:** 207.43**Vapor Pressure:** NA**Vapor Density:** NA**pH Factor:** NA**Solubility:** Soluble**Evaporation Rate:** NA**10. Stability And Reactivity****Stability:** Hygroscopic**Hazardous Polymerization:** Will not occur**Conditions To Avoid (Stability)**

Material may absorb water from the atmosphere on prolonged exposure.

Incompatible Materials

Strong reducing agents

Hazardous Decomposition Products

Hydrogen chloride and chlorine

11. Toxicological Information**Miscellaneous Toxicological Information**

Intraperitoneal (rat); LD50: 360 mg/kg

12. Ecological Information

No Data Available...

13. Disposal Considerations

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.

Ruthenium (III) Chloride Anhydrous**Ru Rh Pd Ag Re Os Ir Pt Au****14. Transport Information****Proper Shipping Name**

Corrosive solid, Acidic, inorganic, n.os. (Ru III Chloride, Anhydrous)

Hazard Class

8

DOT Identification Number

3260

DOT Shipping Label

Corrosive

Packaging Requirements

PG II

Additional Shipping Paper Description

See IATA and IMDG for further regulations.

DOT (Pictograms)**TDG - Canada (Pictograms)****15. Regulatory Information****U.S. Regulatory Information**

All ingredients of this product are listed or are excluded from listing under the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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.

Canadian Regulatory Information

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

European Union (EU) Regulatory Information

R36/37/38 - Irritating to eyes, respiratory system and skin

S24/25 - Avoid contact with skin and eyes

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S9 - Keep container in a well-ventilated place

MATERIAL SAFETY DATA SHEET



Ruthenium (III) Chloride Anhydrous

Ru Rh Pd Ag Re Os Ir Pt Au

WHMIS - Canada (Pictograms)



DSCL - Europe (Pictograms)



16. Other Information

NFPA Rating

Health: 2

Fire: 0

Reactivity: 0

Other: COR

HMIS Rating

Health: 02

Fire: 0

Reactivity: 0

Personal Protection: C

Precautionary Label

Corrosive

Revision/Preparer Information

MSDS Preparer: Wayne Sher

MSDS Preparer Phone Number: 410-398-7200

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 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.