


# MATERIAL SAFETY DATA SHEET

## Ruthenium Dioxide Hydrate

<b>NFPA</b> 	<b>HMIS</b> <table border="1"><tr><td>HEALTH</td><td style="text-align: center;">1</td></tr><tr><td>FLAMMABILITY</td><td style="text-align: center;">0</td></tr><tr><td>REACTIVITY</td><td style="text-align: center;">0</td></tr><tr><td>PERSONAL PROTECTION</td><td style="text-align: center;">J</td></tr></table>	HEALTH	1	FLAMMABILITY	0	REACTIVITY	0	PERSONAL PROTECTION	J
HEALTH	1								
FLAMMABILITY	0								
REACTIVITY	0								
PERSONAL PROTECTION	J								

### 1. Product And Company Identification

**Supplier**

Colonial Metals, Inc.  
Building 20  
505 Blue Ball Road  
Elkton, MD 21921 United States

**Company Contact:** Joseph Fittos III  
**Telephone Number:** 410-398-7200  
**FAX Number:** 410-398-2918  
**E-Mail:** jfittos@colonialmetals.com  
**Web Site:** colonialmetals.com

**Manufacturer**

Colonial Metals, Inc.  
Building 20  
505 Blue Ball Road  
Elkton, MD 21921 United States

**Company Contact:** Joseph Fittos III  
**Telephone Number:** 410-398-7200  
**FAX Number:** 410-398-2918  
**E-Mail:** jfittos@colonialmetals.com  
**Web Site:** colonialmetals.com

**Supplier Emergency Contacts & Phone Number**

**Chemtrac:** 800-424-9300  
**World Wide - Call COLLECT to U.S:** 703-527-3887

**Manufacturer Emergency Contacts & Phone Number**

**Chemtrac:** 800-424-9300  
**World Wide - Call COLLECT to U.S:** 703-527-3887

**Issue Date:** 02/17/2009

**Product Name:** Ruthenium Dioxide Hydrate  
**Chemical Name:** Ruthenium Dioxide, Ruthenium (IV) Oxide Hydrate  
**CAS Number:** 32740-79-7  
**Chemical Family:** Platinum Group Metal Salts  
**Chemical Formula:** RuO<sub>2</sub>.xH<sub>2</sub>O  
**MSDS Number:** 8005  
**Product Code:** 8005

### 2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
Ruthenium Dioxide	32740-79-7	78.7

### EMERGENCY OVERVIEW

**Irritant.**

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

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## Ruthenium Dioxide Hydrate

### Hazards Identification (Pictograms)



### 3. Hazards Identification

#### Primary Routes(s) Of Entry

Eye: Likely  
Inhalation: Likely  
Skin: Likely  
Ingestion: Likely

#### Eye Hazards

Mild to severe irritation.

#### Skin Hazards

Slight to mild irritation.

#### Ingestion Hazards

May be harmful if swallowed.

#### Inhalation Hazards

Irritation of the respiratory tract.

### 4. First Aid Measures

#### Eye

Flush thoroughly with plenty of water for 15 minutes. Contact a physician immediately.

#### Skin

Flush area for 15 minutes with plenty of water. If discomfort occurs or persists, contact a physician immediately. Remove contaminated clothing and shoes and wash before reuse.

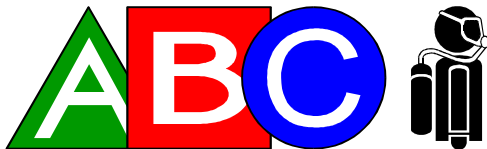
#### Ingestion

If swallowed wash out mouth with water provided the victim is conscious. Never give anything by mouth to an unconscious person. Induce vomiting only if directed to do so by medical personnel. Contact a physician immediately.

#### Inhalation

Remove to fresh air immediately. Contact a physician immediately.

### Fire Fighting (Pictograms)



### 5. Fire Fighting Measures

Flash Point: NA °C

Autoignition Point: NA °C

Flammability Class: NA

#### Fire And Explosion Hazards

Use proper safety equipment. Can ignite by spontaneous combustion in the presense of organics.

# MATERIAL SAFETY DATA SHEET

## Ruthenium Dioxide Hydrate

### 5. Fire Fighting Measures - Continued

#### Extinguishing Media

Use medium suitable to fight surrounding fire.

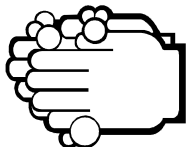
#### Fire Fighting Instructions

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

### 6. Accidental Release Measures

Sweep or soak up and place in sealed container. Taking care to avoid dusting. Person protected with full face shield and NIOSH approved respirator and cartridge for dust. Ventilate area and wash spill site after pick-up is complete.

### Handling & Storage (Pictograms)



### 7. Handling And Storage

#### Handling Precautions

Avoid contact with eyes, prolonged or repeated contact with skin. Avoid breathing dust.

#### Storage Precautions

Store in a tightly sealed container in a cool, dry place.

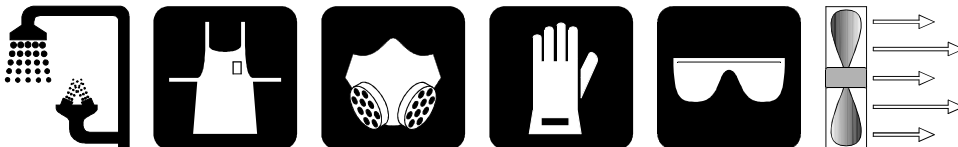
#### Work/Hygienic Practices

Always use good personal hygiene after handling.

#### Other Precautions

0.01 ppm high efficiency particular respirator/supplied air respirator/self-contained breathing apparatus; 0.2 ppm same as above with full face piece; 1 ppm powdered air purifying respirator with high efficiency filter/type C supplied air respirator operated in pressure demand mode. Store in a sealed container, plastic or plastic liner, in a cool, well ventilated, dry area away from volatile acids.

### Protective Clothing (Pictograms)



### 8. Exposure Controls/Personal Protection

#### Engineering Controls

Ventilation: Local Exhaust: Required in handling area  
Mechanical: Desirable to insure concentration of material below TLV/TWA levels  
Other: Closed Ventilation system - Dust (Laboratory Fume Hood)

Safety shower and eyewash

#### Eye/Face Protection

ANSI approved safety glasses/goggles

#### Skin Protection

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

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## Ruthenium Dioxide Hydrate

### 8. Exposure Controls/Personal Protection - Continued

#### Respiratory Protection

NIOSH approved chemical cartridge respirator for particulates and dust or self-contained breathing apparatus with full face shield.

#### 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

Odorless

**Chemical Type:** Mixture

**Physical State:** Solid

**Melting Point:** Decomposes °C

**Boiling Point:** NA °C

**Specific Gravity:** ~7.0

**Molecular Weight:** 160.07

**Vapor Pressure:** NA

**Vapor Density:** NA

**pH Factor:** NA

**Solubility:** Insoluble

**Evaporation Rate:** NA

### 10. Stability And Reactivity

**Stability:** Stable

**Hazardous Polymerization:** Will not occur

#### Conditions To Avoid (Stability)

Mixing with organics

#### Incompatible Materials

Organics, especially acetone and alcohol and active metals.

#### Hazardous Decomposition Products

NA

### 11. Toxicological Information

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

### 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.

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## Ruthenium Dioxide Hydrate

### 13. Disposal Considerations - Continued

#### RCRA Information

NL

### 14. Transport Information

#### Proper Shipping Name

Considered non-hazardous for shipping

#### Additional Shipping Paper Description

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

### 15. Regulatory Information

No Data Available...

### 16. Other Information

#### NFPA Rating

Health: 1

Fire: 0

Reactivity: 0

Other: COR

#### HMIS Rating

Health: 1

Fire: 0

Reactivity: 0

Personal Protection: J

#### Revision/Preparer Information

MSDS Preparer: Joseph J. Fittos III

MSDS Preparer Phone Number: 410-398-7200

This MSDS Supercedes A Previous MSDS Dated: 03/12/2001

### 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.