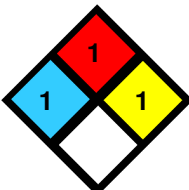


# MATERIAL SAFETY DATA SHEET

## Ruthenium (III) 2,4 pentanedionate

|  |  |        |   |              |   |            |   |                     |   |
|--|--|--------|---|--------------|---|------------|---|---------------------|---|
| <b>NFPA</b><br> | <b>HMIS</b><br><table border="1"><tr><td>HEALTH</td><td style="text-align: center;">1</td></tr><tr><td>FLAMMABILITY</td><td style="text-align: center;">1</td></tr><tr><td>REACTIVITY</td><td style="text-align: center;">1</td></tr><tr><td>PERSONAL PROTECTION</td><td style="text-align: center;">J</td></tr></table> | HEALTH | 1 | FLAMMABILITY | 1 | REACTIVITY | 1 | PERSONAL PROTECTION | J |
| HEALTH   | 1  |        |   |              |   |            |   |                     |   |
| FLAMMABILITY   | 1  |        |   |              |   |            |   |                     |   |
| REACTIVITY   | 1  |        |   |              |   |            |   |                     |   |
| 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:** 03/02/2009

**Product Name:** Ruthenium (III) 2,4 pentanedionate  
**CAS Number:** 14284-93-6  
**Chemical Family:** Platinum group organometallic complex  
**Chemical Formula:** C<sub>15</sub>H<sub>21</sub>O<sub>6</sub>Ru  
**MSDS Number:** 8019  
**Product Code:** 8019

**Synonyms**

Ruthenium Acetylacetonate

### 2. Composition/Information On Ingredients

| Ingredient Name                    | CAS Number | Percent Of Total Weight |
|------------------------------------|------------|-------------------------|
| ruthenium (III) 2,4 pentanedionate | 14284-93-6 | 98 - 100                |

### EMERGENCY OVERVIEW

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

### 3. Hazards Identification

**Primary Routes(s) Of Entry**

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

# MATERIAL SAFETY DATA SHEET

## Ruthenium (III) 2,4 pentanedionate

### 3. Hazards Identification - Continued

#### Eye Hazards

Irritating.

#### Skin Hazards

Irritating.

#### Ingestion Hazards

May be harmful if ingested.

#### Inhalation Hazards

May be harmful if inhaled.

### First Aid (Pictograms)



### 4. First Aid Measures

#### Eye

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

#### Skin

Wash with soap and copious amounts of water. Contact a physician immediately. Remove contaminated clothing and shoes and wash before reuse.

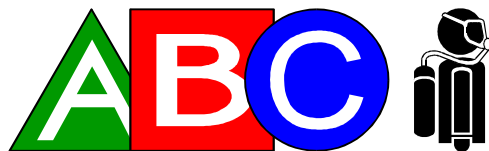
#### Ingestion

Seek medical attention immediately.

#### Inhalation

Remove to fresh air immediately. If victim is not breathing provide artificial respiration. 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. May emit carbon monoxide.

#### Extinguishing Media

Carbon dioxide, extinguishing powder or water spray.

#### Fire Fighting Instructions

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

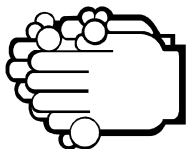
# MATERIAL SAFETY DATA SHEET

## Ruthenium (III) 2,4 pentanedionate

### 6. Accidental Release Measures

Wear proper personal protective equipment. Sweep 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.

### Handling & Storage (Pictograms)



### 7. Handling And Storage

#### Handling Precautions

Do not breathe dust. Do not get into eyes, on skin, or clothing. Avoid prolonged or repeated exposure.

#### Storage Precautions

Keep in a tightly sealed container in a cool, dry place away from oxidizing agents.

#### Work/Hygienic Practices

Wash thoroughly with soap and water after handling. Use good personal hygiene.

### Protective Clothing (Pictograms)



### 8. Exposure Controls/Personal Protection

#### Engineering Controls

Ventilation: Local Exhaust: Required in handling area  
Mechanical: Desirable  
Other: Recommended - 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).

#### Respiratory Protection

NIOSH approved chemical cartridge respiratory for particulates and acid gas 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

Red crystalline solid

**Chemical Type:** Mixture

# MATERIAL SAFETY DATA SHEET

## Ruthenium (III) 2,4 pentanedionate

### 9. Physical And Chemical Properties - Continued

#### Appearance - Continued

**Physical State:** Solid

**Melting Point:** 500 °F 260 °C

**Molecular Weight:** 398.40

**Solubility:** Insoluble

### 10. Stability And Reactivity

**Stability:** Stable

**Hazardous Polymerization:** Will not occur

#### Incompatible Materials

Oxidizing agents.

#### Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and metal oxide fume.

### 11. Toxicological Information

To the best of our knowledge the chemical, physical, and toxicological effects 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.

### 14. Transport Information

#### Proper Shipping Name

Non-hazardous

#### Additional Shipping Paper Description

IATA: Same as DOT. Always consult IATA manual before shipping.

### 15. Regulatory Information

#### European Union (EU) Regulatory Information

#### Other International Regulations

### 16. Other Information

#### NFPA Rating

**Health:** 1

**Fire:** 1

# MATERIAL SAFETY DATA SHEET

## Ruthenium (III) 2,4 pentanedionate

### 16. Other Information - Continued

#### NFPA Rating - Continued

Reactivity: 1

#### HMIS Rating

Health: 1

Fire: 1

Reactivity: 1

Personal Protection: J

#### Revision/Preparer Information

MSDS Preparer: Joseph J. Fittos III

MSDS Preparer Phone Number: (410)398-7200

This MSDS Supersedes A Previous MSDS Dated: 07/02/2008

#### 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.

Printed Using MSDS Generator™ 2000