



Material Safety Data Sheet

Product No. 19421 Ruthenium Red

Issue Date (04-17-08)

Review Date (06-01-12)

Section 1: Product and Company Identification

Product Name: Ruthenium Red

Use: Biological Stain

Synonym: Ruthenium Red

Company Name

Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477

Domestic Phone (800) 247-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	%	OSHA PEL mg/m3	ACGIH TLV mg/m3	NTP	IARC	OSHA regulated
Ruthenium (111) Chloride Oxide Ammoniated Hydrate, (12790-48-6)	99.9-100	NE	NE	ND	ND	ND

Section 3: Hazard Identification

Emergency overview

Appearance: Dark brown powder.

Immediate effects: May cause irritation of the respiratory system. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization.

Potential health effects

Primary Routes of entry: Inhalation, skin, and ingestion.

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

Eyes: Irritation.

Skin: Irritation.

Ingestion: May cause irritation, nausea, and diarrhea. Poison is unlikely on single exposure.

Inhalation: Irritation and difficulty breathing.

Chronic Exposure: May cause irritation of the respiratory system.

Chemical Listed As Carcinogen Or Potential Carcinogen: ND

See Toxicological Information (Section 11)

Potential environmental effects

See Ecological Information (Section 12)

Section 4: First Aid Measures

If accidental overexposure is suspected

Eye(s) Contact: Flush area for 15 minutes with plenty of water and wash with soap and water. If

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

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

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

Ingestion: Not expected to be a problem in industry. However if swallowed and discomfort occurs, contact a physician.

Note to physician

Treatment: ND

Medical Conditions generally Aggravated by Exposure: May cause irritation of the respiratory system. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization.

Section 5: Fire Fighting Measures

Flash Point: NA

Flammable Limits: LEL=NA UEL=NA

Auto-ignition point: ND

Fire Extinguishing Media: Use water spray, foam, carbon dioxide, or medium to fight primary source.

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

Unusual Fire and Explosion Hazards: Use proper safety equipment. Can decompose to emit toxic ammonia and chlorine vapors.

Hazardous combustion products: Carbon monoxide, carbon dioxide, nitrogen dioxide, ammonia, hydrogen chloride gas, ruthenium oxide.

DOT Class: ND

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Sweep up or soak up solution and place in a sealed container, taking care to avoid dusting. Person protected with full-face shield and proper respirator for dust. Ventilate area and wash spill site after pick up is complete.

Waste Disposal Methods: Place in a sealed container and return to Colonial Metals for reclamation of Ruthenium. Consult Federal EPA, state and local regulations for proper disposal. Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage

Precautions to be Taken in Handling and Storage: Avoid contact with eyes and prolonged or repeated contact with skin. Avoid breathing dust. Use compatible chemical-resistant gloves. Wash hands thoroughly after handling.

Storage temperature: NE

Storage Pressure: NE

Section 8: Exposure Controls / Personal Protection

Engineering Controls

Ventilation required: Local exhaust required in handling area. Mechanical exhaust desirable to insure concentration of material below TLV/TWA levels.

Personal Protection Equipment

Respiratory protection: Chemical cartridge respirator for dust, mist, fume and radionuclide or self-contained breathing apparatus with full-face piece.

Skin protection: Avoid contact. Wear gloves and protective clothing.

Protective Gloves: Rubber/neoprene (compatible chemical-resistant gloves).

Eye protection: ANSI approved Safety glasses/goggles.

Additional clothing and/or equipment: Lab coat/apron, flame and chemical resistant protective clothing,

eye wash, safety shower, and hygienic facilities for washing.

Exposure Guidelines

See Composition/Information on Ingredients (Section2)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Dark brown powder.

Odor (threshold): Ammoniacal odor

Specific Gravity (density H₂O=1): NE

Vapor Pressure (mm Hg): NA

Vapor Density (air=1): NA

Percent Volatile by volume: ND

Evaporation Rate (butyl acetate=1): NA

Boiling Point: NA

Melting point: Decomposes

pH: NA

Solubility in Water: ND

Molecular Weight: 858.35

Section 10: Stability and Reactivity

Stability: Stable.

Conditions to Avoid: high temperature.

Materials to Avoid (Incompatibility): NE

Hazardous Decomposition Products: Ammonia and Chlorine vapor.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Results of component toxicity test performed: NE

Human experience: NIF

This product **does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information

Ecological Information: NIF

Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: ND

Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information

US DOT Information: Proper shipping name: Not Regulated

IATA: Proper shipping name: ND. Consult with IATA regulation before shipping.

IMO: Proper shipping name: ND

Marine Pollutant: Not listed.

Canadian TDG: Not Regulated

Section 15: Regulatory Information

United States Federal Regulations

MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.

SARA: NIF

SARA Title III: NIF

RCRA: Not listed.

TSCA: Not listed. It is for research and development use only.

CERCLA: None listed

State Regulations

California Proposition 65: Not listed

International Regulations

Canada WHMIS: NIF

Europe EINECS Numbers: NIF

Section 16: Other Information

Label Information: Avoid contact and inhalation.

European Risk and Safety Phrases: Caution: Substance not yet fully tested.

European symbols needed: ND

Canadian WHMIS Symbols: ND

Hazard Rating: Health: **ND**; Fire: **ND**; Reactivity: **ND**

(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Abbreviations used in this document

NE= Not established

NA= Not applicable

NIF= No Information Found

ND= No Data

Disclaimer

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.