

Safety Data Sheet

Product No. 19421 Ruthenium Red

Issue Date (07-31-15)

Review Date (10-9-15)

Section 1: Product and Company Identification

Product Name: Ruthenium Red

Use: Biological Stain

Synonym: Ruthenium (111) Chloride Oxide Ammoniated Hydrate

Company Name

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

Domestic Phone (800) 237-3526 (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: Hazard Identification

2.1 Classification of substance or mixture

GHS Pictograms



GHS09

GHS Categories

GHS09 – Irritant

Serious eye irritation 2B	H320: Causes eye irritation.
Skin corrosion/irritation 3	H316: Causes mild skin irritation.
Acute tox., inh. 5	H333: May be harmful if inhaled.
Acute tox., dermal 5	H313: May be harmful in contact with skin.
Acute tox., oral 4	H302: Harmful if swallowed.

2.2 Label elements

Hazard Pictograms



GHS09

Signal Word: Warning

Hazard statements:

- H302 Harmful if swallowed.
- H313 May be harmful in contact with skin.
- H316 Causes mild skin irritation.
- H320 Causes eye irritation.
- H333 May be harmful if inhaled.

Precautionary statements:

- P201 Obtain special instructions before use.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P308+313 IF exposed or concerned: Get medical advice/attention.

2.3 Other hazards

Health Effects:

NFPA Hazard Rating: Health: 1; Fire: 1; Reactivity: 0
HMIS® Hazard Rating: Health: 1; Fire: 1; Reactivity: 0
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Results of PBT and vPvB assessment: No data available.

PBT: ND

vPvB: ND

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: No

See Toxicological Information (Section 11)

Potential environmental effects

See Ecological Information (Section 12)

Section 3: Composition / Information on Ingredients

Principle Hazardous	%	OSHA	ACGIH	NTP	IARC	OSHA
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Component(s) (chemical and common name(s)) (Cas. No)		PEL mg/m3	TLV mg/m3	Carcinogen	Carcinogen	regulated Carcinogen
Ruthenium (111) Chloride Oxide Ammoniated Hydrate (12790-48-6)	91.5	NE	NE	No	No	No

Section 4: First Aid Measures

If accidental overexposure is suspected

General information: Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye(s) Contact: Flush area for 15 minutes with plenty of water and wash with soap and water. Remove contact lenses if present and easy to do. If discomfort occurs or persists, contact a physician.

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

Inhalation: Remove to fresh air. If discomfort occurs or persists, contact physician. Remove contaminated clothing and shoes and wash before reuse.

Ingestion: Rinse mouth. Seek immediate medical attention. Do not induce vomiting unless directed to do so by medical personnel.

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: ND

Flammable Limits: ND

Auto-ignition point: ND

Fire Extinguishing Media: Water fog, dry chemical, CO₂, or "alcohol resistant" foam.

Special Fire Fighting Procedures: Firefighters should wear self-contained breathing apparatus and full protective gear.

Unusual Fire and Explosion Hazards: 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: None.

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled

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.

Small spills: Wet brush and collect to waste receptacles.

Clean-up 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.

Waste Disposal Methods:

Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage

Precautions to be taken in Handling and Storage:

Handling: Do not handle until all safety precautions have been read and understood. Keep containers closed. Ensure adequate ventilation. Avoid breathing dust. 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.

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.

Incompatibilities: Store away from strong acids or oxidizing agents.

Storage temperature: NE

Storage Pressure: NE

Section 8: Exposure Controls / Personal Protection

Engineering Controls

Ventilation required: Local exhaust required in handling area. Mechanical: desirable to ensure concentration of material below TLV/TWA levels. Closed ventilation system – dust (laboratory fume hood).

Personal Protection Equipment

General precautions: Observe good chemical hygiene practices. Do not smoke or eat while using product. Wash hands or exposed skin after using the product.

Respiratory protection: Utilize organic vapor respirator if airborne levels are not maintained or if ventilation is inadequate. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under

appropriate government standards such as NIOSH (US) or CEN(EU).
Protective gloves: Wear chemical-resistant gloves.
Skin protection: Protective work clothing that covers skin and prevents exposures.
Eye protection: Wear safety glasses with side shields or goggles or face shield.
Additional clothing and/or equipment: NA

Exposure Guidelines

See Composition/Information on Ingredients (Section 3)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Dark brown powder.

Odor (threshold): Ammonia-like (ND)

Specific Gravity (density H₂O=1): ND

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: NA

pH: NA

Solubility in Water: Soluble

Molecular Weight: 858.35

Section 10: Stability and Reactivity

Stability: Stable under normal conditions of use.

Conditions to Avoid: Open flame, high temperatures, and ignition sources.

Materials to Avoid (Incompatibility): ND

Hazardous Decomposition Products: Ammonia and chlorine vapor.

Hazardous Polymerization: Does not occur.

Section 11: Toxicological Information

Results of component toxicity test performed: ND

Human experience: ND

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: ND

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: Not regulated

IMO: Proper shipping name: Not regulated

Marine Pollutant: Not listed.

Canadian TDG: Not regulated

Section 15: Regulatory Information

United States Federal Regulations

SDS 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

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.