

GELEST, INC.
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MATERIAL SAFETY
DATA SHEET

EMERGENCY TELEPHONE
CHEMTREC: 1-800-424-9300

NAME ON LABEL: **PHENANTHROLINE RUTHENIUM CHLORIDE, hydrate - OMRU026**

CHEMICAL NAME: PHENANTHROLINE RUTHENIUM CHLORIDE, hydrate

SYNONYMS: RUTHENOUS TRIS(1,10-PHENANTHROLINE) DICHLORIDE, hydrate

CHEMICAL FAMILY: RUTHENIUM COMPOUND

FORMULA: $C_{26}H_{24}N_6Cl_2Ru$

HMIS CODES HEALTH: 3 FLAMMABILITY: 1 REACTIVITY: 0

IDENTITY	CAS NO.	%	TLV
PHENANTHROLINE RUTHENIUM CHLORIDE, hydrate 304695-79-2 CAS# for anhydrous compound: [23570-43-6]		>95	not established
PHYSICAL DATA			

Boiling Point: NA
 Specific Gravity: >1
 Vapor Density: NA
 % volatiles: <1
 Molecular Weight: 712.61/730.61
 Appearance & Color: Orange-red powder.

Melting Point: >200°C
 Vapor Pressure: not determined
 Solubility in water: slightly soluble
 Evaporation rate: NA
 Other: NA

FIRE & EXPLOSION DATA

Flash Point, COC: >110°C (>230°F) Autoignition Temp.: not determined
 Flammability Limits- LEL: NA UEL: NA

Extinguishing Media: Water spray, foam, carbon dioxide, dry chemical.
 Special Fire Fighting Procedures: Avoid eye and skin contact. Do not breathe fumes or inhale vapors.
 Unusual Fire and Explosion Hazards: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

-1-(OMRU026)

ENVIRONMENTAL INFORMATION

Spill response: Sweep material and transfer to a suitable container for disposal.

Recommended Disposal: Dispose of as solid waste. In moderate quantities ruthenium recovery should be considered. Follow all chemical pollution control regulations.

HEALTH HAZARD DATA

Eye Contact: May cause immediate or delayed severe eye irritation.

Skin contact: May produce irritation or contact dermatitis. Prompt and thorough washing with soap and water will reduce or eliminate potential dermal effects.

Inhalation: Inhalation of dust or particulates may irritate the respiratory tract.

Oral Toxicity: not determined

Chronic Toxicity: not determined

SUGGESTED FIRST AID

EYES: In case of contact, immediately flush eyes with flowing water for at least 15 minutes. Get medical attention.

SKIN: Flush with water, then wash with soap and water.

INHALATION: Move exposed individual to fresh air. Administer oxygen if needed. Call a physician.

INGESTION: Never give fluids or induce vomiting if patient is unconscious or having convulsions. Get medical attention.

REACTIVITY DATA

Stability: Stable

Conditions to avoid: Material decomposes slowly in contact with air by reaction with water and carbon dioxide.

Hazardous decomposition products: Organic acid vapors and ruthenium oxide fumes.

-2-(OMRU026)

SPECIAL PROTECTION INFORMATION

Ventilation: Local exhaust is required. Mechanical is recommended.

Respiratory Protection: If exposure exceeds TLV, NIOSH approved dust and mist respirator.

Eye and Face Protection: Chemical worker's goggles. Do not wear contact lenses.

Other Clothing and Equipment: Rubber, neoprene or nitrile gloves. An eyewash and emergency shower should be available. Launder clothing before reuse.

OTHER PRECAUTIONS

For research use only.

Storage and Handling: Store in sealed containers away from light.

TRANSPORTATION

DOT SHIPPING NAME: CHEMICALS, NOI

DOT HAZARD CLASS: None required

DOT LABEL: None required

DOT ID No: None required

Prepared by safety and environmental affairs

ISSUE DATE OMRU026: 5/20/11

SUPERSEDES: none

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