

CHAITANYA CHS, 2<sup>nd</sup> FLOOR, OFFICE # 206, SIDDHARTH NAGAR, S.V.ROAD, GOREGAON (W), MUMBAI 400062, MH, INDIA.  
CONTACT: +9122 28725393 /94/ 95 | EMAILID: CARE@SUVCHEM.COM

**MATERIAL SAFETY DATA SHEET (MSDS)****RUTHENIUM RED (34% RU)****1. Product Identification**

**Synonyms:** Ruthenium (III) chloride oxide ammoniated hydrate  
**CAS No.:** 11103-72-3

Product Coad: R0176200005

**Molecular Formula:**  $\text{Ru}_3\text{O}_2(\text{NH}_3)_{14}\text{Cl}_6 \cdot 2\text{H}_2\text{O}$

**Molecular Weight:** 822.38

**2. Composition/Information on Ingredients**

Ingredient	CAS No	Percent
RUTHENIUM RED	11103-72-3	90 - 100%

**3. Hazards Identification****Emergency overview:**

May be irritating to the eye, the skin, the respiratory tract, or the digestive tract.

Warning! Toxicological properties of this chemical have not been fully investigated.

Target Organs: None

Potential Health Effects: Eye: May cause eye irritation.

Skin: May cause skin irritation.

Ingestion: May cause irritation of the digestive tract.

Inhalation: May cause irritation of the respiratory tract.

**4. First Aid Measures**

**Eyes:** Immediately flush eyes with copious amounts of water for at least 15 minutes, lifting upper and lower eyelids from time to time. **Skin:** Flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical attention. Wash clothing and thoroughly clean shoes before reuse. Cover irritated skin with emollient or with anti-bacterial cream. If discomfort occurs or persists, seek immediate medical attention.

**Ingestion:** Do not induce vomiting unless directed to do so by medical personnel. If alert and conscious, give 2-4 cupfuls of water or milk. Never give anything by mouth to an unconscious person. Seek medical attention. **Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

**5. Fire Fighting Measures**

**General Information:** As in any fire, wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH approved or equivalent, full protective gear. **Extinguishing Media:** This substance is noncombustible. Use extinguishing media appropriate to the surrounding fire conditions.

**6. Accidental Release Measures**

**General Information:** Use proper protective equipment as outlined in Section 8.

**Spills/Leaks:** Sweep up or absorb material, then place in clean, dry, closed container for disposal. Provide ventilation, but avoid generating dusty conditions. Wash spill area after pick-up is complete.

**MATERIAL SAFETY DATA SHEET (MSDS)****RUTHENIUM RED (34% RU)****7. Handling and Storage**

**Handling:** Use adequate ventilation. Avoid contact with eyes, skin and clothing. Wash clothing before reuse. Avoid inhalation and ingestion. Wash thoroughly after handling.

**Storage:** Store in tightly closed container in cool, dry area away from incompatible materials such as oxidizing agents. Do not store above 25°C (77°F).

**8. Exposure Controls/Personal Protection**

Engineering Controls: Local exhaust required in handling area to keep airborne levels below recommended exposure limits. Safety shower and eyewash station should be available to the work area.

Exposure Limits: Not available.

Personal Protective Equipment

Eyes: ANSI approved safety glasses/goggles.

Skin: Rubber/Neoprene chemical-resistant gloves.

Clothing: Lab coat, apron or other chemical resistant protective clothing.

Respirators: NIOSH approved chemical cartridge respiratory for particulates and acid

gas or self-contained breathing apparatus with full-face shield.

**9. Physical and Chemical Properties**

Physical State: solid

Appearance: dark brown powder

Odor: ammoniacal odor

**10. Stability and Reactivity**

Chemical Stability: Stable

Conditions to Avoid: Incompatible materials, dust generation

Incompatibility with Other Materials: Oxidizing agents

Hazardous Decomposition of Products: Not available

Hazardous Polymerization: Will not occur

**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**

**Environmental Fate:** No information found.

**Environmental Toxicity:** No information found.

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**MATERIAL SAFETY DATA SHEET (MSDS)****RUTHENIUM RED (34% RU)****13. Disposal Considerations**

Place in a sealed container. Consult Federal EPA, State and local regulations for

proper disposal, recycling, or reclamation procedures. Note that chemical additions or processing or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.

**14. Transport Information**

NON HAZARDOUS FOR AIR, ROAD AND SEA TRANSPORT

**15. REGULATORY**

SARA Title III: N/A

Federal Regulatory: N/A

**16. Other Information**

**Product Use:** Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

**DISCLAIMER:**

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

**End of document**