OXFORD LAB FINE CHEM LLP

Regd Office: Unit no 12, 1st Floor,
Neminath Industrial Estate No.6,
Navghar, Vasai (East), Palghar - 410210.
Maharashtra, INDIA.

Tel: +91 250 2390032 / 2390989 / 2390990
Email: sales@oxfordlabchem.com /
info@oxfordlabchem.com
Web: www.oxfordlabchem.com

Oxford
Range of
Laboratory Chemicals

MATERIAL SAFETY DATA SHEET

RUTHENIUM TRICHLORIDE (For Synthesis)

CAS NO. : 14898-67-0

Section 1: Chemical Product and Company Identification

Section 1: Chemical Product

Product Name: RUTHENIUM TRICHLORIDE (For Synthesis)
CAS#: 14898-67-0
C.I. No.: Not available.
Synonym: Not available.
Chemical Name: RUTHENIUM TRICHLORIDE (For Synthesis)
Chemical Formula: RuCl3.3H2O

Brand: OXFORD

Details Of The Supplier Of The Safety Data Sheet:

Company identification: **OXFORD LAB FINE CHEM LLP**
Unit. No. 12, 1st Floor, Neminath Industrial Estate No. 6,
Navghar, Vasai (East). Palghar - 401 210.
Mumbai, Maharashtra, INDIA.
Tel: 91-250-2390989
Tel/Fax: 91-250-2390032

Section 2: Composition and Information on Ingredients

Substances
Formula: RuCl3.3H2O
Molecular weight: 207.43 g/mol
CAS-No.: 14898-67-0
Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	CAS-No.	Concentration
Ruthenium(III) chloride hydrate	14898-67-0	<=100%

Section 3: Hazards Identification

Classification of the substance or mixture

Classification of the substance according to Regulation (EC) No 1272/2008:
Skin corrosion (Category 1B), H314

Other hazards : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

Section 4: First Aid Measures

Description of first aid measures

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

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Indication of any immediate medical attention and special treatment needed
No data available

Section 5: Fire and Explosion Data

Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture
Hydrogen chloride gas, Ruthenium oxide.

Advice for firefighters
Wear self contained breathing apparatus for fire-fighting if necessary.

Further information: No data available

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Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7: Handling and Storage

Precautions for safe handling
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed

Conditions for safe storage, including any incompatibilities
Store in cool place.
Keep container tightly closed in a dry and well-ventilated place.
Hygroscopic Storage class (TRGS 510): Non-combustible, corrosive hazardous materials

Section 8: Exposure Controls/Personal Protection

Control parameters
Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment
Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Section 8: Exposure Controls/Personal Protection (Continued)

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection: Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee 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).

Control of environmental exposure: Do not let product enter drains.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

a)Appearance Form	**: form:powder powder: dark grey**
b)Odour	**: No data available**
c)Odour threshold	**: No data available.**
d)pH	**: No data available.**
e) Melting point/range	**: No data available**
f)Initial boiling point andboiling range	**: No data available**
g)Autoignition temperature	**: No data available.**
h)Flammability (solid, gas)	**: No data available.**
i)Upper/lower flammability or explosive limits	**: No data available**
j)Flash point [°C]	**: No data available**
k)Evaporation rate	**: No data available.**
l)Vapour pressure	**: No data available.**

Section 9: Physical and Chemical Properties (Continued)

m)Vapour density	**: No data available.**
n)Relative density,	**: No data available**
o)Solubility in water	**: No data available**
p)Viscosity	**: No data available.**
q)Explosive properties	**: No data available.**
r)Oxidising properties	**: No data available.**
s)Decomposition temperature	**: No data available.**
t)Autoignition temperature	**: No data available.**
u)Molecular Weight	**: 261.47**

Section 10: Stability and Reactivity Data

Reactivity : No data available.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : No data available.

Conditions to avoid : No data available

Incompatible materials : Zinc

Hazardous decomposition products

Other decomposition products - Hazardous decomposition products formed under fire conditions.-
Hydrogen chloride gas, Ruthenium oxide
Other decomposition products-No data available.

Section 11: Toxicological Information

Information on toxicological effects

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Section 11: Toxicological Information (Continued)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.Cough, Shortness of breath, Headache, Nausea (Ruthenium(III) chloride hydrate)

Section 12: Ecological Information

Toxicity: No data available.

Persistence - degradability : No data available.

Bioaccumulative potential : No data available.

Mobility in soil : Not established.

Results of PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Other adverse effects :
No data available.

Section 13: Disposal Considerations

Waste treatment methods

Product: Offer surplus and non-recyclable solutions to a licensed disposal company.Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated packaging: Dispose of as unused product.

Section 14: Transport Information

Land transport (ADR-RID)

Proper shipping name : CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(Ruthenium(III) chloride hydrate)
UN N° : 3260
ADR - Class : 8

Sea transport (IMDG) [English only]

Proper shipping name : CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. Ruthenium(III) chloride hydrate)
UN N° : 3260
IMO-IMDG - Class or division : 8
IMO-IMDG - Packing group : II

Air transport (ICAO-IATA) [English only]

Proper shipping name : Corrosive solid, acidic, inorganic, n.o.s.(Ruthenium(III) chloride hydrate)
UN N° : 3260
IATA - Class or division : 8
IATA - Packing group : II

Section 15: Other Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical Safety Assessment
For this product a chemical safety assessment was not carried out.

Section 16 - Additional Information

References: Not available.

Other Special Considerations: Not available.

Disclaimer:

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