

RUTHENIUM METAL

Section I

Kurt J. Lesker Company 1925 Worthington Avenue Clairton, PA 15025 Ph: 412/387-9200 Fax: 412/233-4275		Emergency Phone Numbers KJLC 800/245-1656 Chemtrec 800/424-9300 Poison Center 800/562-8236	
Chemical Name and Synonyms Ruthenium Metal		Date of Last Revision 11/17/95	
Formula Ru	Chemical Family Metal	Chemical Abstract No. 7440-18-8	
TSCA Listed in TSCA Inventory		Calc. Molecular Wt. 101.07	

Section II Hazardous Ingredients

Hazardous Ingredients	CAS #	%	TLV	OSHA PEL
Ruthenium Metal	7440-18-8	100	Not set	Not set

Section III Physical Data

Boiling Point (0°C): 3900°C	Density (gmcc): 12.45
Vapor Pressure: NA	% Volatile by Volume: NA
Reaction with Water: None	Evaporation Rate (H ₂ O -1): NA
Solubility in Water: None	Melting Point (°C): 2310°C
Appearance and Odor: Lustrous hard metal or powder; no odor, grey	Other Comments:

Section IV Fire & Explosion Hazard Data

Flash Point (method) NA	Autoignition Temp. NA	Flammability flammable as fine powder	LEI NA	UEI NA
Extinguishing Media: Agents for metal fires such as dry graphite, MET-L-X or TEC.				
Special Fire Fighting Procedures: Do not use water on metal fires. Smother fire with Class D extinguishments or allow fire to burn. Wear full protective gear.				
Unusual Fire and Explosion Hazards: Burning ruthenium emits ruthenium oxide, an irritating and toxic material.				

Section V Spill or Leak Process

Steps to be Taken in Case Material is Released or Spilled: Sweep or scoop up and remove.
Waste Disposal Method (Consult federal, state or local authorities)

for proper disposal procedures.): Save for precious metal recovery.

Section VI Health Hazard Data

Toxicity Data No data	HMIS Hazard Rating Health: ND Flammability: ND Reactivity: ND Personal Protection: ND
Route(s) of Entry	Inhalation: X Skin Ingestion
Effects of Overexposure (acute and chronic) Inhalation: No data on effects of inhalation of ruthenium metal. Ruthenium tetroxide fumes are reported to be severely irritating and infurious to the mucous membranes and lungs. No data on chronic effects. Dermal/Eye Contact: No data. Ruthenium tetroxide has been reported to be highly irritating to the eyes. Other (specify): Ruthenium and its salts are considered slightly toxic based upon laboratory animal studies.	
Medical Conditions Generally Aggravated by Exposure: ND	
Carcinogenicity: None NTP: IARC Monographs OSHA Regulations	
Emergency and First Aid Procedures Ingestion: Give victim fluids, then induce vomiting. Seek medical attention. Inhalation: Remove to fresh air. If exposure was to oxide fumes, seek immediate medical attention. Skin Contact: Wash affected area with soap and water. Eye Contact: Flush eyes immediately with plenty of water for at least 15 minutes. If exposure was to the oxide, seek medical attention.	

Section VII Reactivity Data

Stable: X Unstable:	Conditions Contributing to Instability: None
Incompatibility (materials to avoid): ND	
Hazardous Decomposition Products - Thermal and Other (list): RuO ₄	
Hazardous Polymerization May Occur: Will Not Occur: X	Conditions to Avoid: None

Section VIIISpecial Protective Information

Respiratory Protection (specify type). Use Only Niosh Approved Equip. Any respirator approved for dusts, mists and fumes.	
Ventilation (always maintain exposure below permissible limits) Local Exhaust: To control exposure to dusts and fumes Mechanical (general): Adequate for non-dusty work Special: Other:	
Protective Gloves: Any to limit skin contact	Eye Protection: Safety Goggles

Other Protective Equipment/Work Practices: None

Section IX	Special Precautions
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Precautions to be Taken in Handling and Storing: Wash thoroughly after handling.
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Transportation Requirements

DOT Class: Not classified

UN Number: Not classified

IMCO Class: Not classified

Other:

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, the Kurt J. Lesker Company makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon: User should satisfy himself that he had all current data relevant to his particular use.

ND = NO DATA FOUND

NA = NOT APPLICABLE