



SAFETY DATA SHEET

1. Identification

Product Name Ruthenium Powder
CAS-No 7440-18-8
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.
Details of the supplier of the safety data sheet

Company

Walters + Koch Inc
16192 Coastal High Way, Lewes, Delaware
Telephone: +1 302 394 6123
Fax: +1 302 202 2177
Email info@walterskoch.com

Emergency Telephone Number

+852 5803 0392

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable solids
Combustible dust

Category 2
Yes

Label Elements

Signal Word

Warning

Hazard Statements

Flammable solid
May form combustible dust concentrations in air



Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Wear protective gloves/protective clothing/eye protection/face protection

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store in a well-ventilated place. Keep container tightly closed

Hazards not otherwise classified (HNOC)

None identified

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Ruthenium	7440-18-8	100

4. First-aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.
Inhalation	Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
Ingestion Physician	Clean mouth with water. Get medical attention. Most important symptoms and effects Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Dry chemical.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Auto ignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Dust can form an explosive mixture with air. Combustible material. Fine dust dispersed in air may ignite.

Hazardous Combustion Products

None known.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal Precautions Environmental Precautions

Ensure adequate ventilation. Use personal protective equipment as required.
See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up

Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

Handling

Avoid contact with skin and eyes. Do not breathe dust. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools.

Storage

Keep in a dry, cool and well-ventilated place. Refer product specification and/or product label for specific storage temperature requirement. Keep container tightly closed. Keep away from heat, sparks and flame. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure Limits established by the region specific regulatory bodies.

Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment.

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

No protective equipment is needed under normal use conditions.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State

Powder Solid

Appearance

Grey

Odor

Odorless

Odor Threshold

No information available

pH

No information available

Melting Point/Range

2310 °C / 4190 °F

Boiling Point/Range

3900 °C / 7052 °F @ 760 mmHg

Flash Point

No information available

Evaporation Rate

Not applicable

Flammability (solid,gas)

No information available

Flammability or explosive limits

Upper

No data available

Lower

No data available

Vapor Pressure

No information available

Vapor Density

Not applicable

Specific Gravity

No information available

Solubility

No information available

Partition coefficient; n-octanol/water

No data available

Auto ignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Ru
Molecular Weight	101.07

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	None under normal use conditions
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Toxicologically Synergistic Products

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Ruthenium	7440-18-8	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed

No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3089
Proper Shipping Name METAL POWDERS, FLAMMABLE, N.O.S.
Hazard Class 4.1
Packing Group III

TDG

UN-No UN3089
Proper Shipping Name Metal powder, flammable, n.o.s.
Hazard Class 4.1
Packing Group III

IATA

UN-No UN3089
Proper Shipping Name Metal powder, flammable, n.o.s.
Hazard Class 4.1
Packing Group III

IMDG/IMO

UN-No UN3089
Proper Shipping Name Metal powder, flammable, n.o.s.
Hazard Class 4.1
Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Ruthenium	7440-18-8	X	ACTIVE	-

Legend:

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Ruthenium	7440-18-8	X	-	231-127-1	X	X	X	X	KE-30666

U.S. Federal Regulations

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration

Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals Other International Regulations

Mexico - Grade No information available

16. Other information

Disclaimer

The information herein is believed to be accurate and reliable as of the date compiled. However, WALTERS + KOCH INC make no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information.

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End of SDS