



SECTION 1: Product Identification

Chemical Name:	Ruthenium black (99.9%)
Product Number:	413
CAS Registry Number:	7440-18-8
Formula:	Ru
EINECS Number:	231-127-1
Chemical Family:	metal or element
Synonym:	none

SECTION 2: Composition and Information on Ingredients

Ingredient	CAS Number	Percent	ACGIH (TWA)	OSHA (PEL)
Title Compound	7440-18-8	100	no data	no data

SECTION 3: Hazards Identification

Emergency Overview:	Inhalation hazard as a fine dust or fume.
Primary Routes of Exposure:	Inhalation (of dust or fume), ingestion
Eye Contact:	The dust may cause slight to mild irritation of the eyes.
Skin Contact:	The dust may cause slight to mild irritation of the skin.
Inhalation:	Hazard associated with inhalation of fine dust or fume. May be irritating to nasal cavity and respiratory tract.
Ingestion:	No specific information is available on the physiological effects of ingestion.
Acute Health Effects:	Dust may be irritating to skin, eyes and respiratory tract.
Chronic Health Effects:	No information available on health effects of prolonged or repeated exposure .
NTP:	No
IARC:	No
OSHA:	No



SECTION 4: First Aid Measures

Eye Exposure:	Immediately flush the eyes with copious amounts of water for at least 10-15 minutes. A victim may need assistance in keeping their eye lids open. Get immediate medical attention.
Skin Exposure:	Wash the affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.
Inhalation:	Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.
Ingestion:	Seek medical attention immediately. Keep victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

SECTION 5: Fire Fighting Measures

Flash Point:	not applicable
Autoignition Temperature:	not applicable
Explosion Limits:	not applicable
Extinguishing Medium:	Dry chemical or Class D metal fire agent.
Special Fire Fighting Procedures:	If involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.
Hazardous Combustion and Decomposition Products:	None
Unusual Fire or Explosion Hazards:	Flammable solid. Dust may form explosive mixtures with air. May self-ignite if wetted with alcohols or related organics.

SECTION 6: Accidental Release Measures

Spill and Leak Procedures:	Small spills can be mixed with vermiculite or sodium carbonate and swept up.
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SECTION 7: Handling and Storage

Handling and Storage:	Store in a tightly sealed container. Handle fine powders in a well-ventilated area.
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SECTION 8: Exposure Controls and Personal Protection

Eye Protection:	Always wear approved safety glasses when handling a chemical substance in the laboratory.
Skin Protection:	Wear protective clothing and gloves.
Ventilation:	Material may form or contain a fine dust that may become airborne during handling. If possible, handle the material in an efficient fume hood.
Respirator:	If handling material in the form of a fine dust and ventilation is not available, a respirator should be worn. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 1910.134.
Additional Protection:	No additional protection required

SECTION 9: Physical and Chemical Properties

Color and Form:	powdr.
Molecular Weight:	101.07
Melting Point:	2310°C
Boiling Point:	3900°C
Vapor Pressure:	not applicable
Specific Gravity:	12.3
Odor:	none
Solubility in Water:	Insoluble

SECTION 10: Stability and Reactivity

Stability:	Air and moisture stable solid.
Hazardous Polymerization:	no hazardous polymerization
Conditions to Avoid:	If used as a catalyst, keep spent catalyst away from combustibles. They could ignite.
Incompatibility:	Halogens, hydrogen peroxide, chlorates and hypochlorites, alcohols
Decomposition Products:	none

SECTION 11: Toxicological Information



RTECS Data:	No information available in the RTECS files.
Carcinogenic Effects:	No data available
Mutagenic Effects:	No data available
Teratogenic Effects:	No data available
SECTION 12: Ecological Information	
Ecological Information:	No data available
SECTION 13: Disposal Considerations	
Disposal:	Dispose of according to local, state and federal regulations.
SECTION 14: Transportation	
Shipping Name (CFR):	Metal Powder, Flammable, N.O.S.
Hazard Class (CFR):	4.1
Additional Hazard Class (CFR):	NA
Packaging Group (CFR):	III
UN ID Number (CFR):	UN# 3089
Shipping Name (IATA):	Metal Powder, Flammable, N.O.S.
Hazard Class (IATA):	4.1
Additional Hazard Class (IATA):	NA
Packaging Group (IATA):	III
UN ID Number (IATA):	UN# 3089
SECTION 15: Regulatory Information	
TSCA:	Listed in the TSCA inventory



SARA (Title 313): Title compound not listed

Second Ingredient: none

Third Ingredient: none