

RUTHENIUM OXIDE
SAFETY DATA SHEET
DATE OF LAST REVISION: 07/01/15

Section 1: Identification

Product Name: Ruthenium Oxide
CAS Number: 12036-10-1 / **EC Number:** 234-840-6
Company: Angstrom Sciences, Inc.
40 South Linden Street
Duquesne, PA 15110
For more information call: 412-469-8466
(Monday - Friday 9:00 AM -5:00 PM EST)

Section 2: HAZARD IDENTIFICATION

Signal Word: Danger



Hazard Statements: H271: May cause fire or explosion; strong oxidizer

Precautionary Statements: P221: Take any precaution to avoid mixing with combustibles.
P283: Keep away from heat/sparks/open flames/hot surfaces - No smoking.
P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking
P306 + P360: IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P371 + P380 + P375: in case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

HMIS Health Ratings (0-4):

Health:	1
Flammability:	3
Physical:	2

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SAFETY DATA SHEET

Section 3: Composition/Information on Ingredients

Chemical characterization: Ceramic
Additional Names: Ruthenium (IV) Oxide
CAS# Description: 12036-10-1
Percentage: 100 wt%
EC number: 234-840-6

Section 4: FIRST AID MEASURES

General Treatment: Seek medical attention if symptoms persist.
Special Treatment: None
Important Symptoms: None
Eye Contact: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Skin Contact: Wash affected area with mild soap and water. Remove any contaminated clothing.
Inhalation: Remove to fresh air. If required, give artificial respiration. Seek medical advice.
Ingestion: Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing Media: Do not use water for metal fires - use CO₂, sand, extinguishing powder
Flammability: Oxidizer - may cause fire in contact with other materials
Special Fire Fighting Procedure: Use full-face, self contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions: Isolate runoff to prevent environmental pollution.

Section 7: HANDLING AND STORAGE

Handling Precautions for safe handling: Wash thoroughly after handling. Handle under dry protective gas.
Conditions for safe storage, including any incompatibilities Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in Section 10.
Work/Hygienic Maintenance: Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

RUTHENIUM OXIDE
SAFETY DATA SHEET

Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Permissible Exposure Limits: N/A
Threshold Limit Value: N/A
Special Equipment: None
Respiratory Protection: Dust Respirator
Protective Gloves: Rubber Gloves
Eye Protection: Safety glasses or goggles
Body Protection: Protective work clothing. Wear close-toed shoes and long sleeves/pants.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form: Powder
Color: Black
Odor: Odorless
Water Solubility: Insoluble
Boiling Point: N/A
Melting Point: 1200°C
Flash Point: N/A
Autoignition Temperature: N/A
Density: 6.97 g/cc
Molecular Weight: N/A

Section 10: STABILITY AND REACTIVITY

Reactivity: Reducing agents, Flammable substances, Organic materials, Metal powders, Oxidizing agents.
Chemical Stability: Stable under recommended storage conditions
Incompatible Conditions: Water/moisutre
Hazardous Decomposition Products: Metal Oxide Fume

Section 11: TOXICOLOGICAL INFORMATION

Potential Health Effects:
Eyes: May cause irritation
Skin: May cause irritation
Ingestion: May cause irritation
Inhalation: May cause irritation
Chronic: N/A

Signs & Symptoms: N/A
Aggravated Medical Conditions: N/A

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SAFETY DATA SHEET**

Median Lethal Dose: 4580 mg/kg for rat by mouth
Carcinogen: N/A

Section 12: ECOLOGICAL INFORMATION

Aquatic Toxicity: Low

Persistence Bioaccumulation Toxicity: No

Very Persistent, Very Bioaccumulative: No

Notes: N/A

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state, national, and international regulations

Section 14: TRANSPORT INFORMATION

Hazardous: Hazardous as powder only



Hazard Class: 5.1 Oxidizing substance
Packing Group: II
UN Number: UN1479
Proper Shipping Name: Oxidizing solid, n.o.s. (Ruthenium oxide)

Section 15: REGULATORY INFORMATION

Sec 302 Extremely Hazardous: No
Sec 304 Reportable Quantities: N/A
Sec 313 Toxic Chemicals: No

RUTHENIUM OXIDE
SAFETY DATA SHEET

Section 16: OTHER INFORMATION

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.