



# Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · www.scm-inc.com

Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8<sup>th</sup>, 2019

## **SAFETY DATA SHEET**

Identity: Ruthenium oxide

Formula: RuO<sub>2</sub>

### SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 133.07

CAS #	OSHA PEL	ACGIH TLV	%
12036-10-1	NE	NE	0.0-100.0%

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point:

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 1200°C

Specific Gravity (Water=1): 6.97 g/cm<sup>3</sup>

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble/

Insoluble in acids

*Appearance and odor:* Dark black powder and pieces, no odor

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Method Used:* Unknown

*Explosive Limits:* LEL: N/A

UEL: N/A

*Extinguishing Media:* Use suitable extinguishing agent for surrounding material and type of fire

*Special Fire Fighting Procedures:* Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

*Unusual Fire and Explosion Hazards:* When heated to decomposition, ruthenium oxide may emit toxic fumes of RuO<sub>x</sub>.



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## SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (instability):* None

*Incompatibility (Materials to avoid):* None recorded

*Hazardous Decomposition or Byproducts:* Oxides of ruthenium

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (hazardous polymerization):* None

## SECTION VI - HEALTH HAZARD DATA

*Routes of entry:* Inhalation? Yes      Skin? Yes      Eyes? Yes      Ingestion? Yes      Other? Yes

To the best of our knowledge the chemical, physical and toxicological properties of ruthenium oxide have not been thoroughly investigated and recorded.

Most ruthenium compounds are poisons or moderately toxic. They resemble osmium compounds in that when heated in air, they evolve fumes which are injurious to the eyes and lungs and can produce nasal ulcerations. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

### Signs and Symptoms of Overexposure:

*Inhalation:* May cause a red, dry throat and coughing.

*Ingestion:* No acute or chronic health effects recorded.

*Skin:* May cause redness, burning, and itching.

*Eye:* May cause redness, burning, itching and watering.

### Health Hazards (Acute and Chronic):

#### *Inhalation:*

Acute: May cause irritation to the respiratory system

Chronic: No chronic health effects recorded

#### *Ingestion:*

Acute: No acute health effects recorded

Chronic: No chronic health effects recorded

#### *Skin:*

Acute: Prolonged or repeated contact may cause irritation

Chronic: No chronic health effects recorded

#### *Eye:*

Acute: Prolonged or repeated contact may cause irritation

Chronic: No chronic health effects recorded

*Target Organs:* No target organs recorded

*Carcinogenicity:* NTP? No      IARC Monographs? No      OSHA Regulated? No

*Medical Conditions Aggravated by Exposure:* Pre-existing lung disorder



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### Emergency and First Aid Procedures:

- Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention
- Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person
- Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist
- Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

### *Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

### *Waste disposal method:*

Dispose of in accordance with state, local, and federal regulations.

### *Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

## SECTION VIII - CONTROL MEASURES

### *Protective Equipment Summary (Hazard Label Information):*

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

### *Ventilation:*

Local Exhaust: To maintain concentration at or below the PEL, TLV  
Mechanical (General): Recommended

### *Work/Hygienic/Maintenance Practices:*

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established