

# MATERIAL SAFETY DATA SHEET

## 1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology  
Standard Reference Materials Program  
100 Bureau Drive, Stop 2300  
Gaithersburg, Maryland 20899-2300

RM Number: 8607  
MSDS Number: 8607  
RM Name: Tungsten Ore GBW 07240

Date of Issue: 01 December 2011

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**Description:** Reference Material (RM) 8607 is a tungsten ore mined from a greisen tungsten-tin-bismuth deposit. It is intended for use in geological and geochemical investigations, particularly in geochemical exploration programs and in studies of ore genesis, and for environmental monitoring in mining areas. A unit of RM 8607 consists of one bottle containing approximately 100 grams of ore pulverized to pass a 100 µm screen (-160 mesh).

**Substance:** Greisen ore

**Other Designations:** Quartz; mica; muscovite; silicate, mica.

## 2. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0-4): Health = 1 Fire = 0 Reactivity = 0

**NOTE:** The Report of Investigation lists the mineral composition of the ore as simple oxides but these oxides are not representative of the components. Greisen ore is mainly composed of mica and quartz.

**Major Health Hazards:** Cancer (in humans)<sup>(a)</sup>

**Physical Hazards:** There are no known physical hazards associated with this material.

**Potential Health Effects (Acute and Chronic):**

**Inhalation:** Acute: irritation; chronic: same as acute and difficulty breathing, digestive disorders, rash, disorientation, lung damage, and cancer.

**Skin Contact:** Acute: irritation; chronic: no information available.

**Eye Contact:** Acute: irritation; chronic: no information available.

**Ingestion:** Acute and chronic: no information available.

**Listed as a Carcinogen/Potential Carcinogen**

	Yes	No
National Toxicology Program (NTP) Report on Carcinogens	X <sup>(a)</sup>	_____
International Agency for Research on Cancer (IARC) Monographs	X <sup>(a)</sup>	_____
Occupational Safety and Health Administration (OSHA)	X <sup>(a)</sup>	_____

<sup>(a)</sup> Silica (quartz and amorphous) is potentially included in ground ore. NTP lists silica, crystalline, as a known carcinogen; IARC lists silica (quartz) as a Group 1 (carcinogenic to humans); silica (respirable) size is listed by OSHA.

## 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component <sup>(a)</sup>	CAS Number	EC Number (EINECS)	Nominal Concentration (%)
Ore	not available	not available	100

<sup>(a)</sup>Quartz (as SiO<sub>2</sub>, CAS Number: 14808-60-7, EC Number: 238-878-4) is identified due to its hazardous nature and the small particle size. The concentration of the elements not listed above are below the reportable limit, hazardous components (1 %) or carcinogens (0.1 %), as required by OSHA, 29 CFR 1910.1200 (g)(2)(i)(C)(1) for MSDS information.

**NOTE:** The material's maximum particle size is below the inhalation size limits (100 µm or 100 microns, inhalation) established by the ACGIH, Appendix D.

**EC Classification:** Not classified.

**EC Risk (R No.) and EC Safety (S No.):** Not assigned.

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#### 4. FIRST AID MEASURES

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**Inhalation:** If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Seek immediate medical attention.

**Skin Contact:** Rinse affected area with soap and water for at least 15 minutes. Seek medical assistance if necessary.

**Eye Contact:** Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

**Ingestion:** If a large amount is swallowed, seek medical attention.

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#### 5. FIRE FIGHTING MEASURES

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**Fire and Explosion Hazards:** Negligible fire hazard.

**Extinguishing Media:** Use extinguishing agents appropriate to surrounding fire.

**Fire Fighting:** Avoid inhalation of combustion by-products.

**Flash Point (°C):** Not applicable.

**Autoignition Temp. (°C):** Not applicable.

**Flammability Limits in Air**

**UPPER (Volume %):** Not applicable.

**LOWER (Volume %):** Not applicable.

**Products of Combustion:** Thermal decomposition may release miscellaneous decomposition products (see Section 10, "Stability and Reactivity").

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#### 6. ACCIDENTAL RELEASE MEASURES

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**Occupational Release:** Collect spilled material in appropriate container for proper disposal.

**Disposal:** Refer to Section 13, "Disposal Considerations".

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#### 7. HANDLING AND STORAGE

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**Storage:** Store and handle in accordance with all current regulations and standards.

**Safe Handling Precautions:** See Section 8, "Exposure Controls and Personal Protection".

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#### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**Exposure Limits**

**Component:** Mica

OSHA PEL (TWA): 20 mppcf (<1 % crystalline silica)

ACGIH (TWA): 3 mg/m<sup>3</sup> (respirable fraction)

NIOSH (TWA): 3 mg/m<sup>3</sup> (containing <1 % Quartz, respirable dust)

NIOSH (IDLH): 1500 mg/m<sup>3</sup> (containing <1 % Quartz)

**Component:** Quartz

OSHA PEL (TWA): (30)/( % SiO<sub>2</sub> + 2) mg/m<sup>3</sup> (total dust)

OSHA PEL (TWA): (10)/( % SiO<sub>2</sub> + 2) mg/m<sup>3</sup> (respirable fraction)

ACGIH (TWA): 0.025 mg/m<sup>3</sup> (respirable fraction)

NIOSH (TWA): 0.05 mg/m<sup>3</sup> (respirable dust)

NIOSH (IDLH): 50 mg/m<sup>3</sup> (respirable dust)

**Ventilation:** Local exhaust ventilation system.

**Respirator:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29 CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

**Eye Protection:** Wear safety goggles. An eyewash station and drench shower should be readily available near the handling and use areas.

**Personal Protection:** Chemically resistant gloves and clothing are recommended.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance and Odor:** Powder, no odor information available.

**Molecular Formula:** Not applicable.

**Molar Mass (g/mol):** Not applicable.

**Specific Gravity (water = 1):** Not available.

**Water Solubility:** Not available.

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## 10. STABILITY AND REACTIVITY

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**Stability:**      Stable                      Unstable

Stable at normal temperature and pressure.

**Conditions to Avoid:** Avoid generating dust.

**Incompatible Materials:** Oxidizing materials.

**Fire/Explosion Information:** See Section 5, "Fire Fighting Measures".

**Hazardous Decomposition:** Miscellaneous decomposition products.

**Hazardous Polymerization:**      Will Occur              Will Not Occur

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## 11. TOXICOLOGICAL INFORMATION

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**Route of Entry:**      Inhalation              Skin              Ingestion

**Toxicity Data:** May cause irritation and a cough.

**Component:** Quartz

Rat, Oral LD<sub>50</sub>: 500 mg/kg

**Health Effects:** See Section 2, "Hazards Identification" for potential health effects.

**Target Organs:** Respiratory tract.

**Mutagen/Teratogen:**

Quartz has been studied for tumorigenic and mutagenic effects. The following endpoints are listed in the Registry of Toxic Effects of Chemical Substances (RTECS).

Tumorigenic effects: Rat, Inhalation TCl<sub>0</sub>: 50 mg/m<sup>3</sup> (6 h).

Mutagenic effects: Human, 120 mg/L (24 h); 40 µg/cm<sup>2</sup>.

**Medical Conditions Generally Aggravated by Exposure:** Respiratory disorders.

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity Data:** No ecotoxicity data listed.

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## 13. DISPOSAL CONSIDERATIONS

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**Waste Disposal:** Dispose in accordance with federal, state, and local regulations.

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## 14. TRANSPORTATION INFORMATION

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**U.S. DOT and IATA:** Not regulated by DOT or IATA.

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## 15. REGULATORY INFORMATION

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### U.S. REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.  
SARA Title III Section 302 (40 CFR 355.30): Not regulated.  
SARA Title III Section 304 (40 CFR 355.40): Not regulated.  
SARA Title III Section 313 (40 CFR 372.65): Not regulated.  
OSHA Process Safety (29 CFR 1910.119): Not regulated.  
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):  
ACUTE HEALTH: No  
CHRONIC HEALTH: Yes  
FIRE: No  
REACTIVE: No  
PRESSURE: No

### STATE REGULATIONS

California Proposition 65: Known as cancer causing for silica crystalline particles of respirable size.

### CANADIAN REGULATIONS

WHMIS Information: Not provided for this information.

### EUROPEAN REGULATIONS

**EC Classification:** Not classified.  
**EC Risk and Safety Phrases:** Not assigned.

### NATIONAL INVENTORY STATUS

**U.S. Inventory (TSCA):** Mica is listed. Quartz is listed.  
**TSCA 12(b), Export Notification:** Not listed.

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## 16. OTHER INFORMATION

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**Sources:** ChemAdvisor, Inc., MSDS *Mica*, 16 September 2011.  
ChemAdvisor, Inc., MSDS *Quartz*, 16 September 2011.

**Disclaimer:** Physical and chemical data contained in this MSDS are provided only for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Report of Investigation.