I. Product and Company Information

<table>
<thead>
<tr>
<th>SII Product Name(s):</th>
<th>Rutile Sand</th>
<th>Synonym:</th>
<th>Rutile Premium Grade</th>
<th>Rutile Standard Grade</th>
<th>Rutile Welding Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name:</td>
<td>Rutile</td>
<td>CAS</td>
<td>13463-67-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Manufacturer’s Name:
Southern Ionics Minerals, LLC  
13291 Vantage Way, Suite 103  
Jacksonville, FL 32218  
Web Site [www.simineralsllc.com](http://www.simineralsllc.com)

Emergency Contacts:
For Emergency Incident Information  
Call CHEMTREC at 1-800-424-9300  
CHEMTREC CCN – 20596

II. Hazard Identification

<table>
<thead>
<tr>
<th>OSHA HCS / GHS Classification(s):</th>
<th>Hazard Statement(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT CLASSIFIED AS HAZARDOUS</td>
<td>No known significant effects or critical hazards</td>
</tr>
</tbody>
</table>

Signal Word: No signal word  
Precautionary Statement(s):
- Prevention: Not applicable  
- Response: Not applicable  

Symbol(s): No symbol  

Additional Label Information:
Rutile sand contains a small amount of free quartz (up to 0.5%) and precautions should be taken to avoid inhaling the dust. The normal grain size of the product precludes it from being an inhalation hazard.

Hazards Not Otherwise Classified:
Handling and/or processing of this material may generate dust which can cause mechanical irritation of the eyes, skin, nose and throat.

III. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name:</th>
<th>CAS Reg #’s</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rutile (Titanium Dioxide)</td>
<td>13463-67-7</td>
<td>82 – 97%</td>
</tr>
<tr>
<td>Leucoxene</td>
<td>12173-81-8</td>
<td>1 – 17 %</td>
</tr>
<tr>
<td>Ilmenite</td>
<td>98072-94-7</td>
<td>&lt; 1 %</td>
</tr>
<tr>
<td>Zircon</td>
<td>14940-68-2</td>
<td>0.1 – 0.5 %</td>
</tr>
<tr>
<td>Staurolite</td>
<td>12182-56-8</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>Quartz</td>
<td>14808-60-7</td>
<td>Up to 0.5 %</td>
</tr>
</tbody>
</table>
Monazite 1306-41-8 0.2 – 0.3 %

Comments: Respirable Crystalline Silica < 0.01%

IV. First Aid Measures

**Eyes:** Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Remove any contact lenses. If eye irritation persists get medical advice/attention.

**Dermal / Skin:** Remove contaminated clothing to avoid generating dust. Wash material from the skin. If repeated contact results in skin irritation, get medical advice/attention. Launder clothing before reuse.

**Inhalation:** Move to fresh air immediately. Blow nose to remove particles from nasal passages. If any adverse reaction develops, seek medical attention.

**Ingestion:** There are no known hazards resulting from accidental ingestion of Rutile Sand as may occur during normal handling. Consult a physician if necessary.

V. Fire Fighting Measures

<table>
<thead>
<tr>
<th>NFPA Hazard Rating:</th>
<th>Health (Blue)</th>
<th>Fire (Red)</th>
<th>Reactivity (Yellow)</th>
<th>Special Instructions (White)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

NFPA Hazard Classification: 0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme

**Extinguishing Media:** Product does not burn. Use extinguishing media suitable for the surrounding fire.

**Special Firefighting Procedure:** No fire or explosion hazard exists.

**Specific hazards arising from the chemical:** Use firefighting methods appropriate to local circumstances and the surrounding environment.

VI. Accidental Release Measures

**Precaution if Spilled or Released:** Use personal protective equipment recommended in SECTION 8 during clean-up. Avoid generating dust. Absorb, sweep up, and place in container for re-use or disposal.

**Neutralizing Chemicals:** Reduce dust spreading with a water spray.

**Environmental Precautions:** Prevent product from entering drains and waterways.

VII. Handling and Storage

**Handling:** Avoid contact with eyes. Avoid creating dust in handling, transfer or clean-up. Avoid breathing dust. Use only with adequate ventilation. Wash thoroughly after handling.

**Storage:** This material is not hazardous under normal storage conditions; however, material should be stored in closed containers, in a secure area to prevent container damage and subsequent spillage.

VIII. Exposure Control / Personal Protective Equipment

**Component Workplace Control Parameters:**

<table>
<thead>
<tr>
<th>Components:</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, Crystalline Quartz</td>
<td>14808-60-7</td>
<td>TLV</td>
<td>0.1 mg/m³</td>
<td>ACGIH (respirable fraction)</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>TLV</td>
<td>10 mg/m³</td>
<td>ACGIH (total dust)</td>
</tr>
<tr>
<td>Zirconium Silicate</td>
<td>14940-68-2</td>
<td>TLV</td>
<td>5 mg/m³</td>
<td>ACGIH (as Zr)</td>
</tr>
</tbody>
</table>

**Engineering Controls:** Use engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to keep exposures below their respective threshold limit value. If practical, use local mechanical exhaust ventilation at sources of air contamination, such as open process equipment.

**General Hygiene:** Practice good personal hygiene after using this material, especially before eating,
drinking, smoking, or using the toilet.

### Personal Protection Equipment:

**Eye:**
- Wear safety glasses with side shields in normal conditions. Wear dust-proof goggles in dusty conditions.

**Skin:**
- Wear clothing sufficient to cover the skin, safety shoes, and impervious gloves for hand protection against dry material.

**Respiratory:**
- Use NIOSH/MSHA approved respiratory protection (air purifying or air supplying) with a type 100 (high efficiency particulate cartridge or canister) where concentrations are above airborne exposure limits.

**Radiation Exposure:**
- Occupational exposure should be as low as reasonably achievable, (ALARA principle), but should not exceed a total of 100 milli-seiverts over five consecutive years, (ICRP).

### IX. Physical and Chemical Properties

**Physical State:** Solid

**pH:** NA

**Appearance:** Dark brown to black free running sand

**Odor:** Odorless

**Odor Threshold:** NA

**Vapor Pressure:** NA

**Specific Gravity:** (H₂O=1) 4.0 - 4.3

**Melting Point:** 1825-1840°C

**Vapor Density:** (Air=1) NA

**Upper Explosive Limit:** NA

**Boiling Point:** NA

**Autoignition Temp:** NA

**Lower Explosive Limit:** NA

**Bulk Density:** 2400 to 2700 kg/m³

**Flash Point:** NA

**Grain Size (AFS No):** 75 - 95

**Solubility in water:** Insoluble

**Other:**

### X. Stability and Reactivity Data

**Reactivity:** This material is considered inert.

**Chemical Stability:** Stable at normal conditions.

**Conditions To Avoid:** None known.

**Incompatible Materials:** None in normal or expected use.

**Hazardous products of Decomposition:** None under normal use.

### XI. Toxicological Information

#### Routes of Entry:
- ☒ Eyes ☒ Skin ☒ Ingestion ☒ Inhalation

**Sign and symptoms of Exposure:** May cause irritation to eyes, skin, and respiratory passages.

**Eye Contact:** Contact may result in mechanical (abrasive) irritation.

**Ingestion:** No adverse effects expected for incidental ingestion.

**Skin Contact:** Contact may result in mechanical (abrasive) irritation.

**Inhalation:** Rutile sand contains a small amount of respirable crystalline silica (up to 0.01%) and precautions should be taken to avoid inhaling the dust. The normal grain size of the product precludes it from being an inhalation hazard.

Rutile sand contains low levels of naturally occurring radioactive elements of the uranium and thorium series. It has typical specific activities of 0.6 to 1.2 Bq/g (thorium-232) and 1.5 to 4.5 Bq/g (uranium-238). Low level gamma radiation from bulk or bagged stockpiles of Rutile sand can increase gamma levels slightly above normal background.
Carcinogenicity:
Respirable Crystalline Silica (Quartz)

<table>
<thead>
<tr>
<th>Ingredient Name:</th>
<th>Species</th>
<th>Test</th>
<th>Route</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline Silica (Quartz)</td>
<td>Rat</td>
<td>&gt;11,000 mg/kg</td>
<td>Oral</td>
<td>ALD</td>
</tr>
<tr>
<td>Crystalline Silica (Quartz)</td>
<td>Carp</td>
<td>&gt;10,000 mg/L</td>
<td>Aquatic</td>
<td>LC 50</td>
</tr>
<tr>
<td>Rutile</td>
<td>Mice</td>
<td>&gt;200 mg/kg</td>
<td>Oral</td>
<td>LD 50</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>Rat</td>
<td>&gt;10,000 mg/kg</td>
<td>Oral</td>
<td>LD 50</td>
</tr>
</tbody>
</table>

Comments:

XII. Ecological Information

<table>
<thead>
<tr>
<th>Ingredient Name:</th>
<th>Species</th>
<th>Test</th>
<th>Period</th>
<th>Results</th>
</tr>
</thead>
</table>

Comments: This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. The material is unlikely to cause any environmental damage. It is insoluble in water and is unlikely to contaminate waterways or food chains.

XIII. Disposal Considerations

Waste Disposal: Recover, reclaim or recycle when practical. Disposal must be in accordance with federal, state, and local regulations. If approved, may be transferred to an approved landfill site. Consult and comply with current regulations regarding disposal of waste containing NORMs above background levels.

XIV. Transportation Information

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>None allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification:</td>
<td>Not regulated by U.S. DOT as a hazardous material</td>
</tr>
<tr>
<td>Identification Number:</td>
<td>NA Packing Group: NA Other Labels: NA</td>
</tr>
</tbody>
</table>

Comments: This product is not classified as "dangerous goods" under IAEA SSR 6, IMDG, IATA, Transport Canada and EU transport regulations.

XV. Regulatory Information Based on Largest Component (unless listed)

<table>
<thead>
<tr>
<th>TSCA Status</th>
<th>Yes</th>
<th>SARA 302 TPQ</th>
<th>Not Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe EINECS</td>
<td>Yes</td>
<td>SARA 304 RQ</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Canadian DSL</td>
<td>Yes</td>
<td>SARA 313 List</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Japan ENICS/ISHL</td>
<td>Yes</td>
<td>CERCLA (RQ)</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Korea KECI</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philippines PICCS</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia AICS</td>
<td>Yes</td>
<td>SARA 311/312</td>
<td>Acute ☒ Chronic ☐ Fire ☐ Release of Pressure ☐ Reactive</td>
</tr>
<tr>
<td>China INV</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

International Regulations: Other Regulations:

Canada WHMIS | D-2A | Materials causing other toxic effects | California PROP 65 (Quartz) | Known Carcinogen |

XVI. Other Information

NSF Certification: 

Other: 

Revision Notes: 

MSDS Replacements: SIM MSDS Rutile Sand Products
### IMPORTANT

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