SAFETY DATA SHEET

1. Identification of the product

GHS product identifier  OREAS 70B
Other means of identification

Product code Q0203078

Recommended use of the chemical and restrictions on use

Recommended use Used as a check standard for soil and geochem calibrations.
Recommended restrictions None known.

Suppliers details

Company name Evident Scientific
Address 48 Woerd Avenue
Waltham, MA 02453
USA
Telephone number +1-781-419-3900
Emergency telephone number CHEMTREC


2. Hazard identification

Classification of the substance or mixture

Physical hazards Not classified.

Health hazards Sensitization, skin Category 1
Germ cell mutagenicity Category 2
Carcinogenicity Category 1A
Specific target organ toxicity, repeated exposure Category 1

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 3
Hazardous to the aquatic environment, long-term hazard Category 3

GHS label elements, including precautionary statements

Signal word Danger

Hazard statement

H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280  Wear protective gloves/protective clothing/eye protection/face protection.

Response
- P302 + P352  IF ON SKIN: Wash with plenty of water.
- P308 + P313  IF exposed or concerned: Get medical advice/attention.
- P333 + P313  If skin irritation or rash occurs: Get medical advice/attention.
- P362 + P364  Take off contaminated clothing and wash it before reuse.

Storage
- P405  Store locked up.

Disposal
- P501  Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification  None known.

Supplemental information  None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Common name(s), synonym(s)</th>
<th>CAS number and other unique identifiers</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>High grade massive nickel sulfide ore and barren ultramafic material</td>
<td>-</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Constituents

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Common name(s), synonym(s)</th>
<th>CAS number and other unique identifiers</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz</td>
<td>14808-60-7</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Nickel sulfide</td>
<td>16812-54-7</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Composition comments  The hazard evaluation is based on the content of nickel sulfide.

4. First-aid measures

Description of necessary first-aid measures

Inhalation  Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact  Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact  Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

Ingestion  Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed  Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed  Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information  IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media  Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media  None known.

Specific hazards arising from the chemical  None known.

Special protective actions for firefighters  Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders
Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions
Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Methods and materials for containment and cleaning up
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize dust generation and accumulation. Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent product from entering drains. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions to ensure safe handling
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid contact with eyes, skin, and clothing. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel sulfide (CAS 16812-54-7)</td>
<td>TWA</td>
<td>0.2 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Quartz (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>US. ACGIH Threshold Limit Values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constituents</td>
<td>Type</td>
<td>Value</td>
<td>Form</td>
</tr>
<tr>
<td>Nickel sulfide (CAS 16812-54-7)</td>
<td>TWA</td>
<td>0.2 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Quartz (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Biological limit values</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Control banding approach

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.
Individual protection measures, such as personal protective equipment

Eye/face protection
- Use tight fitting goggles if dust is generated.

Skin protection
- Hand protection: Wear appropriate chemical resistant gloves.
- Other: Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection
- Wear respirator with dust filter.

Thermal hazards
- Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
- Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance
- Physical state: Solid.
- Form: Powder.
- Color: Not available.
- Odor: Not available.
- Odor threshold: Not available.
- pH: Not available.
- Melting point/freezing point: Not available.
- Initial boiling point and boiling range: Not available.

Flash point: Not applicable.
Evaporation rate: Not applicable.
Flammability (solid, gas): This material will not burn.

Upper/lower flammability or explosive limits
- Flammability limit - lower (%): Not available.
- Flammability limit - upper (%): Not available.
- Explosive limit - lower (%): Not available.
- Explosive limit - upper (%): Not available.

Vapor pressure: Not applicable.
Vapor density: Not applicable.
Relative density: Not available.

Solubility(ies)
- Solubility (water): Insoluble in water.

Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature: Not applicable.
Decomposition temperature: Not available.
Viscosity: Not available.

Other information
- Explosive properties: Not explosive.
- Oxidizing properties: Not oxidizing.

10. Stability and reactivity

Reactivity
- The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
- Material is stable under normal conditions.

Possibility of hazardous reactions
- No dangerous reaction known under conditions of normal use.
11. Toxicological information

Information on likely routes of exposure

**Inhalation**
Dust may irritate respiratory system. Chronic lung disease (silicosis) and/or lung cancer may result from prolonged/repeated breathing of the dust of this material.

**Skin contact**
Dust or powder may irritate the skin. May cause an allergic skin reaction.

**Eye contact**
Dust may irritate the eyes.

**Ingestion**
Expected to be a low ingestion hazard.

**Symptoms**
Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

**Acute toxicity**
Not expected to be acutely toxic.

**Skin corrosion/irritation**
Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation**
Direct contact with eyes may cause temporary irritation.

**Respiratory or skin sensitization**

- **Respiratory sensitization**
  Not a respiratory sensitizer.

- **Skin sensitization**
  May cause an allergic skin reaction.

**Germ cell mutagenicity**
Suspected of causing genetic defects.

**Carcinogenicity**
May cause cancer.

**ACGIH Carcinogens**
- Quartz (CAS 14808-60-7) A2 Suspected human carcinogen.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
- Nickel sulfide (CAS 16812-54-7) 1 Carcinogenic to humans.
- Quartz (CAS 14808-60-7) 1 Carcinogenic to humans.

**Reproductive toxicity**
This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**
Not classified.

**Specific target organ toxicity - repeated exposure**
Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard**
Not an aspiration hazard.

**Other information**
Not available.

12. Ecological information

**Ecotoxicity**
Harmful to aquatic life with long lasting effects.

**Persistence and degradability**
No data is available on the degradability of any ingredients in the mixture.

**Bioaccumulative potential**
No data available.

**Mobility in soil**
No data available.

**Other adverse effects**
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

**Disposal methods**

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.

**Hazardous waste code**
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

ANTT: Not regulated as dangerous goods.

DOT: Not regulated as dangerous goods.

SCT: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

15. Regulatory information

International regulations

Montreal Protocol: Not applicable.

Stockholm Convention: Not applicable.

Rotterdam Convention: Not applicable.

Kyoto protocol: Not applicable.

Basel Convention: Not applicable.

16. Other information

Revision date: -

List of abbreviations

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

ANTT: National Agency of Land Transport.

DOT: Department of Transportation (49 CFR 172.101).


IATA: International Air Transport Association.


References

Workplace Threshold Quantities of Hazardous Chemicals

NOM-047-SSA1-2011 – Workplace Biological Exposure Indices (BEIs) to Chemical Substances


NOM-018-STPS-2000 – Workplace Hazardous Chemical Substances Communication and Identification Standard

NOM-010-STPS-2014 (second revision) – Occupational Exposure Limits – becomes effective on April 28, 2016

Disclaimer

Evident Scientific cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.