

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance/preparation	OREAS 70B
Use of the substance/preparation	Used as a check standard for soil and geochem calibrations.
Version No.	02
CAS No.	Mixture
Product code	Q0203078
Manufacturer	
Company name	Evident Scientific
Address	48 Woerd Avenue Waltham, MA 02453 USA
Telephone number	+1-781-419-3900
Emergency telephone number	CHEMTREC US: +1-800-424-9300, International: +1-703-527-3887

2. HAZARDS IDENTIFICATION

Classification	Carc. Cat. 1;R49, Muta. Cat. 3;R68, T;R48/23, R43, R52/53
Physical hazards	Not classified as a physical hazard.
Health hazards	May cause cancer by inhalation. May cause sensitisation by skin contact. Also toxic: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of irreversible effects.
Environmental hazards	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Specific hazards	Toxic: danger of serious damage to health by prolonged exposure through inhalation. May cause sensitisation by skin contact. May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure. Possible risk of irreversible effects. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. For additional information on inhalation hazards, see Section 11 of this safety data sheet.
Main symptoms	Dusts may irritate the respiratory tract, skin and eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS No.	Percent	EC-No.	Classification
High grade massive nickel sulfide ore and barren ultramafic material	-	100		Carc. Cat. 1;R49, Muta. Cat. 3;R68, T;R48/23, R43, R52/53

Constituents	CAS No.	Percent	EC-No.	Classification
Quartz	14808-60-7	-	238-878-4	Carc. Cat. 1;R49, Xn;R48/20
Nickel sulphide	16812-54-7	-	240-841-2	Carc. Cat. 1;R49, Muta. Cat. 3;R68, T;R48/23, R43, N;R50/53

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

4. FIRST-AID MEASURES

Inhalation	Move to fresh air. Call a physician or poison control centre immediately.
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. Flush eyes immediately with large amounts of water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control centre immediately.
General advice	Take off contaminated clothing and shoes immediately. 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. Keep victim under observation. Keep victim warm.
Notes to physician	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Extinguishing media which must not be used for safety reasons	None known.
Unusual fire & explosion hazards	None known.
Specific hazards	None known.
Special protective equipment for fire-fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	The product is non-combustible.

6. ACCIDENTAL RELEASE MEASURES

Containment procedures	Prevent entry into waterways, sewer, basements or confined areas.
Personal precautions	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.
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 for cleaning up	<p>Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimise 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.</p> <p>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.</p> <p>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.</p> <p>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.</p>

7. HANDLING AND STORAGE

Handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimise 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.
Storage	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

Occupational exposure limits

US. ACGIH Threshold Limit Values

Constituents	Type	Value	Form
Nickel sulphide (CAS 16812-54-7)	TWA	0.2 mg/m ³	Inhalable fraction.
Quartz (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.

Egypt. OELs. Threshold limits for carcinogens and suspected carcinogens (Decree No. 388, Annex 8)

Constituents	Type	Value	Form
Nickel sulphide (CAS 16812-54-7)	TWA	0.1 mg/m ³	Dust and fume.

Egypt. OELs. Threshold limits of air pollutants in the workplace (Decree No. 388, Annex 8)

Constituents	Type	Value	Form
Nickel sulphide (CAS 16812-54-7)	TWA	0.2 mg/m ³	Total dust.
Quartz (CAS 14808-60-7)	TWA	0.29 mg/m ³	Total dust.

Egypt. OELs. Threshold limits of air pollutants in the workplace (Decree No. 388, Annex 8)

Constituents	Type	Value	Form
		0.098 mg/m ³	Inhalable dust.
		2.73 mp/ft ³	

Kenya. OEL-CL. Control Limits for Hazardous Chemical Substances (The Factories and Other Places of Work Rules in 2007 of the Factories and Other Places of Work Act (CAP. 514))

Constituents	Type	Value
Nickel sulphide (CAS 16812-54-7)	TWA	0.5 mg/m ³

Kenya. OEL-RL. Recommended Limit for Hazardous Chemical Substances (The Factories and Other Places of Work Rules in 2007 of the Factories and Other Places of Work Act (CAP. 514))

Constituents	Type	Value	Form
Quartz (CAS 14808-60-7)	TWA	0.4 mg/m ³	Respirable dust.

South Africa. Control Limits. Regulations for Hazardous Chemical Substances, Table 1

Constituents	Type	Value
Nickel sulphide (CAS 16812-54-7)	TWA	0.5 mg/m ³

South Africa. Recommended Exposure Limits (RELs) Regulations for Hazardous Chemical Substances, Table 2

Constituents	Type	Value	Form
Quartz (CAS 14808-60-7)	TWA	0.4 mg/m ³	Respirable dust.

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

Recommended monitoring procedures

Additional exposure data Not available.

Engineering measures

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.

Personal protective equipment

Respiratory protection Wear respirator with dust filter.

Hand protection Wear appropriate chemical resistant gloves.

Eye protection Use tight fitting goggles if dust is generated.

Skin and body protection Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Environmental exposure controls

Inform appropriate managerial or supervisory personnel of all environmental releases.

Hygiene measures

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.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Physical state Solid.

Form Powder.

Colour Not available.

Odour Not available.

pH Not available.

Melting point/freezing point Not available.

Boiling point, initial boiling point, and boiling range Not available.

Flash point Not applicable.

Auto-ignition temperature Not applicable.

Combustion characteristics (solid, gas) This material will not burn.

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Vapour pressure Not applicable.

Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility(ies)	
Solubility (water)	Insoluble in water.
Partition coefficient (n-octanol/water)	Not available.
Decomposition temperature	Not available.

10. STABILITY AND REACTIVITY

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Conditions to avoid	Contact with incompatible materials.
Hazardous decomposition products	No hazardous decomposition products are known.
Stability	Material is stable under normal conditions.
Materials to avoid	Powerful oxidizers. Chlorine.
Hazardous polymerisation	No dangerous reaction known under conditions of normal use.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	Not expected to be acutely toxic.
Routes of exposure	Inhalation. Skin contact. Eye contact.
Chronic toxicity	Danger of serious damage to health by prolonged exposure. Possible risks of irreversible effects. Chronic lung disease (silicosis) and/or lung cancer may result from prolonged/repeated breathing of the dust of this material.
Sensitisation	May cause sensitisation by skin contact.
Carcinogenicity	May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Nickel sulphide (CAS 16812-54-7)	1 Carcinogenic to humans.
Quartz (CAS 14808-60-7)	1 Carcinogenic to humans.

Mutagenicity	Suspected of causing genetic defects.
Reproductivity	This product is not expected to cause reproductive or developmental effects.
Epidemiology	No epidemiological data is available for this product.
Local effects	Repeated or prolonged inhalation may cause toxic effects. Inhalation of dusts may cause respiratory irritation. May cause sensitisation by skin contact.
Symptoms and target organs	Dusts may irritate the respiratory tract, skin and eyes.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the environment.
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.
Bioaccumulation	No data available.
Mobility	No data available for this product.
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 instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.
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). Avoid discharge into water courses or onto the ground.
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

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

Labelling

Contains High grade massive nickel sulfide ore and barren ultramafic material

Symbol(s)



Toxic

R-phrase(s)

R49 May cause cancer by inhalation.
R43 May cause sensitisation by skin contact.
R48/23 Also toxic: danger of serious damage to health by prolonged exposure through inhalation.
R68 Possible risk of irreversible effects.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S22 Do not breathe dust.
S24/25 Avoid contact with skin and eyes.
S36/37 Wear suitable protective clothing and gloves.
S53 Avoid exposure - obtain special instructions before use.

16. OTHER INFORMATION

Wording of the R-phrases in sections 2 and 3

R43 May cause sensitisation by skin contact.
R48/23 Also toxic: danger of serious damage to health by prolonged exposure through inhalation.
R49 May cause cancer by inhalation.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R68 Possible risk of irreversible effects.

Recommended use

Used as a check standard for soil and geochem calibrations.

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.

Prepared by

Evident Scientific

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