MATERIAL SAFETY DATA SHEET


Date: 09/19/2003

Green Diamond Sand Products

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Green Diamond
CHEMICAL NAME: Nickel Slag
COMPANY IDENTIFICATION
Green Diamond Sand Products
P.O. Box D, 6th & E Street
Riddle, OR 97469

EMERGENCY / TECHNICAL NUMBERS
(800) 547-4021
(541) 874-3111

PRODUCT INFORMATION: MSDS Requests and Product Information: (541) 874-3111

2. COMPOSITION / INFORMATION INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>CAS No.</th>
<th>OSHA Exposure Limits (PEL)</th>
<th>ACGIH Recommended Limits (TLV)</th>
<th>Percent by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica (SiO₂) as SiO₂₂</td>
<td>112926-00-8</td>
<td>10 mg/m³</td>
<td>10 mg/m³</td>
<td>50.2 †</td>
</tr>
<tr>
<td>Magnesium Oxide (MgO)</td>
<td>1309-48-4</td>
<td>10 mg/m³</td>
<td>10 mg/m³</td>
<td>31.4</td>
</tr>
<tr>
<td>Iron Oxide (Fe₂O₃)</td>
<td>1309-37-1</td>
<td>10 mg/m³</td>
<td>10 mg/m³ *</td>
<td>15.9</td>
</tr>
<tr>
<td>Aluminum Oxide (Al₂O₃)</td>
<td>1344-28-1</td>
<td>10 mg/m³</td>
<td>10 mg/m³</td>
<td>1.6</td>
</tr>
<tr>
<td>Calcium Oxide (CaO)</td>
<td>1305-78-8</td>
<td>5 mg/m³</td>
<td>2 mg/m³</td>
<td>0.7</td>
</tr>
<tr>
<td>Nickel (Ni)</td>
<td>7440-02-0</td>
<td>1 mg/m³</td>
<td>1 mg/m³</td>
<td>&lt;0.1 (incl. NiO)</td>
</tr>
<tr>
<td>Chromium Oxide (Cr₂O₃)</td>
<td>1308-38-9</td>
<td>15 mg/m³ *</td>
<td>10 mg/m³ *</td>
<td>0.1</td>
</tr>
<tr>
<td>Trace Elements</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>1.5</td>
</tr>
<tr>
<td>and Compounds (Total)</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† Respirable free silica (SiO₂) < 0.01%

COMPOSITION COMMENTS: The silica in Green Diamond materials is precipitated silica in the form of silicates of Mg²⁺ and FE³⁺ as MgSiO₃ (MgO·SiO₂) and FeSiO₃ (FeO·SiO₂).

Section 313 (Supplier Notification) of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372) stipulates that this product contains substances subject to the reporting requirements for toxic chemicals. Chemical Name: Nickel, CAS #7440-02-0. Percent by Weight: <0.1%. This information should be included in all MSDS’s that are copied and distributed for this material.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: No specific health hazards. Avoid specified limits for compounds listed in Section 2. Use procedures as relevant for over-exposure to nuisance dust.

POTENTIAL HEALTH EFFECTS

PRIMARY ROUTE OF ENTRY: Nasal

EYE: Abrasion injuries possible if safety glasses are not worn.
SKIN: Abrasion injuries possible during blasting operations or similar exposure, with high velocity direct exposure to skin.
INGESTION: Toxic effects will not occur.
INHALATION: Nuisance dust during loading/unloading, processing and packaging.
CHRONIC EFFECTS: NIOSH/OSHA/MSHA approved particulate respirators should be used during blasting operations. Existing respiratory conditions may be aggravated by exposure.
4. FIRST AID MEASURES

No specialized medical treatment required. No toxic chemicals are present in this product. Health hazards are non-chemical.

**SIGNS AND SYMPTOMS OF EXPOSURE**

**EYE:** Irritation, redness  
**SKIN:** Redness, tender to the touch  
**INGESTION:** Unknown  
**INHALATION:** Coughing, shortness of breath

**FIRST AID PROCEDURES** (likely only in extreme and unusual conditions)

**EYE:** Flush thoroughly with cool running water.  
**SKIN:** Follow procedures appropriate to abrasion or trauma injuries.  
**INGESTION:** Not likely. If swallowed, seek medical attention.  
**INHALATION:** Follow procedures appropriate for over-exposure to nuisance dust.

5. FIRE FIGHTING MEASURES

**FLAMMABLE PROPERTIES:** Nonflammable  
**FLASH POINT / METHOD USED:** N/A  
**AUTOIGNITION:** None  
**FLAMMABILITY LIMITS (% by volume in air):**  
  - LEL: N/A  
  - UEL: N/A  
**EXTINGUISHING MEDIA:** N/A  
**NFPA RATINGS:** Health 0; Flammability 0; Reactivity 0; Protective Gear K.  
**FIRE FIGHTING INSTRUCTIONS:** None  
**UNUSUAL FIRE AND EXPLOSIVE HAZARDS:** None  
**SPECIAL FIRE FIGHTING PROCEDURES:** None  
**COMBUSTION PRODUCTS:** None

6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** Respiratory protection: NIOSH/OSHA/MSHA approved particulate filter respirators for abrasive blast environments. Personal protection: NIOSH/OSHA approved garments and head gear during blasting operations. See Section 8.  
**CLEANUP MEASURES:** Material should be swept or vacuumed into appropriate containers. Disposal should be in accordance with Federal, State, and local regulations.

7. HANDLING AND STORAGE

**NORMAL STORAGE:** General dry storage, ambient air temperature and pressure.  
**HANDLING:** Follow good housekeeping practices to reduce airborne emissions. Use NIOSH/OSHA/MSHA approved particulate filter respirator and clothing in abrasive blast environments.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain dust exposures below PELs or TLVs during loading and unloading. Mechanical exhaust may be appropriate during processing. Special exhaust may be appropriate during normal abrasive blasting operations.  
**RESPIRATORY PROTECTION:** Recommended if PELs or TLVs are exceeded. Use NIOSH/OSHA/MSHA approved respirators.  
**EYE AND FACE PROTECTION:** Use safety glasses with side shields. If there is potential for exposure to particles which could cause mechanical injury to the eye, wear goggles.  
**SKIN AND HAND PROTECTION:** Gloves as desired by user.
9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Green/grey granular solid
ODOR: Odorless
FLASH POINT: None
VAPOR PRESSURE (mm Hg): N/A
VAPOR DENSITY (AIR = 1): N/A
BOILING POINT: N/A
EVAPORATION RATE (BUTYL ACETATE = 1): N/A
MELTING POINT: 2,650-2900°F
SOLUBILITY: Insoluble in water
SPECIFIC GRAVITY (H_2O = 1): 3.0 to 3.3
pH: N/A

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable
CONDITIONS TO AVOID: None
INCOMPATIBILITY WITH OTHER MATERIALS: None
HAZARDOUS DECOMPOSITION PRODUCTS: None
HAZARDOUS POLYMERIZATION: Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY: None
NTP: No
IARC MONOGRAPHS: None
HEAVY METALS: Meets TCLP
OSHA REGULATED: Yes, for compounds in Section 2, and nuisance dust.

12. ECOLOGICAL INFORMATION

The Department of Fisheries and Oceans Canada Report No. 1692 of January 1991 classifies Green Diamond as (a) having moderate to low toxicity to fish, i.e. 96-h LC50 > 100mg/L, (test value was >66000mg/L); (b) not known to be persistent and not likely to accumulate in animal tissues.

13. DISPOSAL CONSIDERATIONS

Prior to its use, Green Diamond meets the TCLP (40 CFR 261.24a) criteria. If the grit remains uncontaminated per the Resource Recovery and Conservation Act (RCRA), then the material meets the definition of a solid waste and may be disposed of per local, state and federal regulations.

If the spent grit upon evaluation contains contaminants at levels above those specified under RCRA, then the waste is defined as hazardous and must be managed per federal or state regulations governing hazardous waste.

14. TRANSPORTATION INFORMATION

NAME OF CONTENTS: Abrasive Grit
REPORTABLE QUANTITY: 11,952 tons
CONSTITUENTS: No hazardous substances at regulated levels
HAZARD CLASS: N/A
UN/NA NUMBER: N/A
POISON INHALATION HAZARD: N/A
EMERGENCY RESPONSE NUMBER: (800) 547-4021
15. REGULATORY INFORMATION

The SARA Title III / CERCLA reportable quantity (RQ) for this product is 11,952 tons.


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