Material Safety Data Sheet  
Graphite Powder

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Graphite Powder  
**Synonyms:** Black lead; crystallized carbon; mineral carbon; plumbago; CI 77265.

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7782-42-5</td>
<td>GRAPHITE</td>
<td>&gt;99</td>
<td>231-955-3</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz</td>
<td>&lt;1</td>
<td>238-878-4</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: green, blue, steel gray or black solid.  
**Caution!** May cause respiratory and digestive tract irritation. May cause eye and skin irritation. Contains trace amounts of quartz which may lead to fibrotic lung disease, silicosis or cancer.  
**Target Organs:** Lungs.

**Potential Health Effects**

**Eye:** Causes eye irritation. May cause conjunctivitis.  
**Skin:** May cause skin irritation.  
**Ingestion:** Ingestion of large amounts may cause gastrointestinal irritation.  
**Inhalation:** Dust is irritating to the respiratory tract.  
**Chronic:** Prolonged exposure to respirable crystalline quartz may cause delayed lung injury/fibrosis (silicosis).

Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.  
**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.  
**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.  
**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.  
**Notes to Physician:** Treat symptomatically and supportively.
Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dust can be an explosion hazard when exposed to heat or flame. Can be easily ignited and burns vigorously.

**Extinguishing Media:** For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. Use water spray to cool fire-exposed containers.

**Flash Point:** Not available.

**Autoignition Temperature:** 1346 deg F (730.00 deg C)

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 1; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions.

Section 7 - Handling and Storage

**Handling:** Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

**Storage:** Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Keep from contact with oxidizing materials.

Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAPHITE</td>
<td>2 mg/m3 TWA (respirable fraction, all forms except graphite fibers)</td>
<td>2.5 mg/m3 TWA (respirable dust) 1250 mg/m3 IDLH</td>
<td>none listed</td>
</tr>
<tr>
<td>Quartz</td>
<td>0.05 mg/m3 TWA (respirable fraction)</td>
<td>0.05 mg/m3 TWA (respirable dust) 50 mg/m3 IDLH (respirable dust)</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** GRAPHITE: 2.5 mg/m3 TWA (respirable dust) Quartz: 0.1 mg/m3 TWA (respirable dust)
Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: green, blue, steel gray or black

Odor: odorless

pH: Not available.

Vapor Pressure: Negligible.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not applicable.

Boiling Point: 7592 deg F

Freezing/Melting Point: 6606-6687F

Decomposition Temperature: Not available.

Solubility: Insoluble in water.

Specific Gravity/Density: 2.09-2.25

Molecular Formula: C

Molecular Weight: 12

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, dust generation, moisture, excess heat.

Incompatibilities with Other Materials: May react vigorously or violently when mixed with strong oxidizing agents such as chlorates, bromates and nitrates, especially when heated. Incompatible with chlorinated paraffins, Lead oxide, manganese oxide, iron oxide, liquid oxygen, oils, and moisture. chlorinetrifluoride, fluoride and potassium superoxide. Reacts at 300C with potassium, sodium, rubidium and cesium to give intercalation compounds. These compounds ignite in air and may react explosively with water.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: Not available.

CAS# 7782-42-5: MD9659600

CAS# 14808-60-7: VV7330000

LD50/LC50: Not available.
Carcinogenicity:
CAS# 7782-42-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 14808-60-7:
- **ACGIH**: A2 - Suspected Human Carcinogen
- **California**: carcinogen, initial date 10/1/88 (airborne particles of respirable size)
- **NTP**: Known carcinogen (listed as Silica, crystalline (general form)).
- **IARC**: Group 1 carcinogen

Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>IATA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
<td>Not regulated as a hazardous material</td>
</tr>
<tr>
<td><strong>Hazard Class:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>UN Number:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Packing Group:</strong></td>
<td></td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

**European/International Regulations**
**European Labeling in Accordance with EC Directives**
**Hazard Symbols:**
Not available.
**Risk Phrases:**

**Safety Phrases:**
MSDS Creation Date: 12/12/1997
Revision #3 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall INDO GULF GROUP be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if INDO GULF GROUP has been advised of the possibility of such damages.