

Hazard Communication Safety Data Sheet

Natural Flake Graphite

Section 1: Identification	
<p>Company Identification:</p> <p>Great Lakes Graphite Inc. 82 Richmond Street East Toronto, Ontario M5C 1P1 Phone: (800) 754-4510 x107 www.GreatLakesGraphite.com</p>	<p>Product Name: Flake Graphite Synonyms: Black lead, crystallized carbon, plumbago, mineral carbon CAS: 7782-42-5 Chemical Family: Carbon Chemical Name: Graphite Chemical Formula: C Recommended Use: NA Restrictions on Use: NA</p>

Section 2: Hazard Identification
<p>Graphite is not a hazardous or toxic material. However, it may contain trace amounts of silica.</p> <p>Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.</p> <p>Potential Chronic Health Affects CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENICE EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.</p> <p>The substance is toxic to upper respiratory tract. The substance may be toxic to cardiovascular system. Repeated or prolonged exposure to the substance can produce target organs damage.</p>

Section 3: Composition / Information on Ingredients			
CAS #	Chemical Name & Formula	Percent	EINEC/ELINCS
7782-42-5	Graphite (C)	94-99	231-955-3
14808-60-7	Silica (SiO ₂)	<3	238-878-4

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact:

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 5: Fire and Explosion Data

Graphite flake does not burn or support combustion under normal conditions. However, if the flake is ground to very fine micron and sub-micron size, it can ignite spontaneously in the presence of oxygen.

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: CLOSED CUP: Higher than 93.3 C (200 F)

Flammable Limits: Not available.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Slightly flammable in presence of open flames and sparks, of heat, of oxidizing materials.

Explosion Hazards in Presence of Various Substance: Risks of explosion of the product in presence of mechanical impact: Not available. Risk of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of moisture.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: It will ignite on contact with chlorine trifluoride and fluorine. Graphite dust may ignite on contact with air. May re-ignite after fire is extinguished.

Special Remarks on Explosion Hazards: Material in powder form, capable of creating an explosion on contact with water.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk; evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents.

Handling: Avoid contact with eyes, skin and clothing by wearing appropriate gear. Do not breathe dust. If dust is generated, wear appropriate protection as described in Section 8.

Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23 C (73.4 F)

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limits.

Personal Protection:

Safety glasses, Lab Coat, Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

Graphite: CAS# 7782-42-5 EC# 231-955-3
ACGIH: TWA 2mg/m³ (respirable fraction)
NIOSH REL: TWA 2.5mg/m³
OSHA PEL: TWA 15ml/m³

Silica: CAS# 14808-60-7 EC# 238-878-4
ACGIH: TWA 0.025mg/m³ (respirable fraction)
NIOSH REL: TWA 0.05 mg/m³
OSHA PEL: TWA 30mg/m³ (%SiO₂+2), total dust
TWA 10mg/m³ (%SiO₂+2), respirable fraction

Where %SiO₂ is the percentage of crystalline silica determined by airborne samples as defined by 29 CFR 1910.1000, Z-3.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystalline solid.)

Odor: Odorless.

Taste: Tasteless.

Molecular Weight: 12.01 g/mole

Color: Black

pH (1% soln/water): Not applicable

Boiling Point: Not applicable

Melting Point: 3650 C (6602 F)

Critical Temperature: 681 C (1257.8 F)

Specific Gravity: 2.25 (Water = 1)

Vapor Pressure: Negligible

Vapor Density: Not available.

Odor Threshold: Not available

Water/Oil Dist. Coeff.: Not available.

Iconicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: Graphite and silica are stable and relatively inert under normal conditions of use and storage.

Reactivity: Graphite will react with oxygen at higher temperatures to produce carbon monoxide and/or

carbon dioxide. The finer the flake, the more reactive it will be due to larger surface area. Graphite reacts vigorously with liquid potassium, potassium peroxide and will ignite with chlorine trifluoride and fluorine. If graphite contacts liquid potassium, sodium, rubidium or caesium at 300°C, intercalation compounds may be formed. These compounds ignite in air and may react explosively with water.
Instability Temperature: Not available.

Conditions of Instability: Excess heat, Incompatible materials.

Incompatibility with various substances: Highly reactive with oxidizing agents, fluorine, halogenated solvents, potassium and potassium oxides.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: **Inhalation. Ingestion.**

Toxicity to Animals: LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Causes damage to the following organs: upper respiratory tract. May cause damage to the following organs. Cardiovascular system.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other toxic effects on Humans:

Skin: Causes skin irritation.

Eyes: Dust causes eye irritation.

Inhalation: May be harmful if inhaled. Dust causes respiratory react and mucous membrane irritation.

Ingestion: May be harmful if swallowed. May cause gastrointestinal (digestive) tract irritation with nausea and vomiting.

Chronic Potential Health Effects: Inhalation of high concentrations of graphite dust over prolonged periods of time may cause pneumoconiosis. Symptoms can include cough, shortness of breath, and decrease of pulmonary function. Preexisting pulmonary disorders such as emphysema may possibly be aggravated by prolonged exposure to high concentrations of graphite dust. This toxicology of this substance has not been fully investigated.

Section 12: Ecological Information

Eco toxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

Canada: Graphite is not defined as a hazardous material for shipping under the Transport Dangerous Goods (DTG) Directorate.

Other: Graphite is not defined as a controlled hazardous material under the US DOT, ICAO, IATA, IMDG or GGVSee.

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:

Rhode Island RTK hazardous substances: Graphite Pennsylvania RTK: Graphite Minnesota: Graphite Massachusetts RTK: Graphite Tennessee: Graphite TSCA 8(b) inventory: Graphite

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Class D

HMIS (U.S.A):

Health Hazard: 1
Fire Hazard: 1
Reactivity: 0
Personal Protection: E

National Fire Protection Association (U.S.A):

Health: 1
Flammability: 1
Reactivity: 0
Specific Hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists
CA Prop 65 – California Proposition 65
CAS – Chemical Abstracts Service
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CFR – Code of Federal Regulations
CWA – Clean Water Act
DSL/NDSL – Domestic Substance List/Non-Domestic Substance List
EC – European Community
EINECS – European Inventory of Existing Commercial chemical Substances
ELINCS – European List of Notified Chemical Substances
GGVSee – Gefahrgutverordnung See (German Regulation on Maritime Dangerous Goods)
HMIS – Hazardous Materials Identification System
IARC – International Agency for Research on Cancer
IATA – International Air Transport Association
ICAO – International Civil Aviation Organization
IMDG – International Maritime Dangerous Goods
LD – Lethal Dose
LC – Lethal Concentration
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OECD – Organization for Economic Co-operation and Development
OSHA – Occupational Safety and Health Administration
PEL – Permissible Exposure Limit
REL – Recommended Exposure Limit
RQ – Reportable Quantity

RTECS – Registry of Toxic Effects of Chemical Substances
SNUR – Significant New Use Rule
TPQ – Threshold Planning Quantity
TSCA – Toxic Substances Control Act
TWA – Time-Weighted Average
US DOT – United States Department of Transportation
WHMIS – Workplace Hazardous Materials Information System

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