



MSDS Number: CC001-2  
Effective Date: March 3, 2016

# Material Safety Data Sheet

## Natural Flake Graphite

### Section 1 – Chemical Product and Company Identification

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**Product Name:** Natural Flake Graphite – various grades in particle size and purity  
**Synonyms:** Black lead, crystallized carbon, plumbago, mineral carbon, C.I. 77265  
**Chemical Family:** Carbon  
**Chemical Name:** Graphite  
**Formula:** C

**Company Identification:** Canada Carbon Inc.  
Suite 605 – 1166 Alberni St.  
Vancouver, British Columbia  
V6E-3Z3 Canada

**Phone:** (604) 685-6375  
**Fax:** (604) 909-1163  
**Emergency Phone (USA):** 1-800-424-9300  
**Emergency Phone (International):** 703-527-3887

### Section 2 – Hazards Identification

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#### EMERGENCY OVERVIEW

Graphite is not a hazardous or toxic material. However, it may contain trace amounts of silica.

**HMIS Hazard Rating:** Health – 1, Flammability – 0, Physical Hazards – 0

**Appearance:** Fine steel grey to black odourless flakes with metallic lustre  
**Primary Route(s) of Entry:** Inhalation into lungs

#### Potential Health Effects

**Eye Contact:** May cause mild irritation and reddening.

**Skin Contact:** May cause mild irritation and redness. No evidence of long term health effects.

**Ingestion:** Ingestion of large amounts may cause gastrointestinal irritation.

**Inhalation:** May irritate respiratory tract. Symptoms may include coughing, shortness of breath and black sputum. Chronic exposure to graphite is associated with the development of pneumoconiosis, a disease of the lungs. Trace amounts of silica may lead to lung disease, silicosis or cancer.

## Section 3 – Composition, Information on Ingredients

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CAS#	Chemical Name and Formula	Percent	EINECS/ELINCS
7782-42-5	Graphite (C)	94-99	231-955-3
14808-60-7	Silica (SiO <sub>2</sub> )	<3	238-878-4

## Section 4 – First Aid Measures

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**Eyes:** Immediately flush eyes adequately with water, occasionally lifting the upper and lower eyelids. Get medical attention if irritation persists.

**Skin:** Immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Wash clothing and clean shoes before reusing. Get medical aid if irritation develops or persists.

**Ingestion:** Graphite flake is typically inert but and little information is available. However, if victim has swallowed a large amount and is conscious and alert, rinse mouth thoroughly with water followed by more water to drink. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Chronic exposure to graphite is associated with the development of pneumoconiosis, a disease of the lungs. Even though crystalline silica may be present in very small amounts, prolonged inhalation exposure may produce silicosis and other lung diseases including lung cancer.

## Section 5 – Fire Fighting Measures

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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.

**Flash Point:** N/A

**Flammability:** N/A

**Explosion:** Not considered to be an explosion hazard

**Extinguishing Media:** Spray water, or any means suitable to extinguish surrounding fire.

**Special Information:** In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode as graphite, when heated, can react with oxygen to produce CO and CO<sub>2</sub>.

## Section 6 – Accidental Release Measures

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Ventilate area of leak or spill. Wear protective equipment to avoid eye irritation and contact with skin. Sweep and/or shovel avoiding or minimizing dust generation and containerize for reclamation or disposal. If vacuum equipment is used, ensure it is properly grounded to avoid static charges.

## Section 7 – Handling and Storage

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**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 in a cool ventilated area in a tightly closed container keeping the product dry. Avoid contact with strong oxidizing agents. Protect container against physical damage and dispose of safely when emptied due to possible contained dust.

## Section 8 – Exposure Controls/Personal Protection

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**Engineering Controls:** Facilities storing or utilizing this material should be equipped with eyewash stations and emergency showers. Use adequate ventilation equipment to keep airborne particulate within acceptable exposure limits.

**Personal Protection:** Safety glasses or goggles should be worn. Wear appropriate protective gloves, clothing and shoes to minimize contact with the skin. Ambient airborne concentrations should be monitored and if the recommended exposure limit is exceeded, wear a NIOSH/MSHA approved dust respirator.

**Exposure Limits:** This product should be treated as a nuisance dust.

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

**Silica:** CAS# 14808-60-7 EC# 238-878-4  
ACGIH: TWA 0.025mg/m<sup>3</sup> (respirable fraction)  
NIOSH REL: TWA 0.05 mg/m<sup>3</sup>  
OSHA PEL: TWA 30mg/m<sup>3</sup> (%SiO<sub>2</sub>+2), total dust  
TWA 10mg/m<sup>3</sup> (%SiO<sub>2</sub>+2), respirable fraction

*Where %SiO<sub>2</sub> 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

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**Physical State:** Solid

**Appearance:** Steel grey to black flakes with metallic lustre.

**Odour:** Odourless

**Taste:** Tasteless

**Molecular Formula:** C

**Molecular Weight:** 12.01

**Moh's Hardness:** 1-2

**Specific Gravity:** 2.2-2.3

**Melting Point:** 3652°C (sublimes)

**Boiling Point:** N/A

**Solubility in Water:** Insoluble.

**pH:** N/A

**Viscosity:** N/A

**Vapour Pressure:** Negligible.

**Vapour Density:** Not available.

**Evaporation Rate:** Not available.

## Section 10 – Stability and Reactivity

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**Chemical 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.

**Hazardous Polymerization:** None.

**Hazardous Decomposition Products:** None. Graphite, being a form of elemental carbon, cannot break down but can produce hazardous products with other elements and compounds as indicated above.

**Incompatibilities:** Strong oxidizing agents, fluorine, halogenated solvents, potassium and potassium oxides.

## Section 11 – Toxicological Information

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**RTECS# (Graphite):** MD9659600

**RTECS# (Crystalline Silica):** VV7330000

**Routes of Exposure:** Inhalation, ingestion, eye and skin contact.

**LD50/LC50:** No data available.

**Inhalation Toxicity:** Graphite alone may cause irritation of the respiratory tract but is not listed as a carcinogen. However, it may contain impurities of crystalline silica which is listed as a carcinogen. Inhalation of dust over prolonged periods of time may cause pneumoconiosis.

**Oral Toxicity:** May cause GI Tract irritation but is not considered toxic.

**Eye Contact:** Dust may cause slight irritation. OECD 405

**Skin Contact:** Non-irritant. OECD 404

**Carcinogenicity:** CAS# 7782-42-5 (Graphite) is not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 14808-60-7 (Crystalline Silica) – ACGIH: A2 – Suspected Human Carcinogen

– IARC: Group 1 – Carcinogen

– NTP: Known carcinogen

## Section 12 – Ecological Information

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**Ecotoxicity:** Not available.

**Products of Biodegradation:** Graphite itself is not toxic and has no products of biodegradation.

## Section 13 – Disposal Considerations

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**Waste Disposal:** This material is determined not to be a hazardous waste as per the U.S. EPA RCRA standards. However, waste must be disposed of in accordance with federal, state or provincial and local environmental control regulations.

## Section 14 – Transport Information

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**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.

## Section 15 – Regulatory Information

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### US FEDERAL

**TSCA:** CAS# 7782-42-5 (graphite) is listed on the TSCA inventory.

CAS# 14808-60-7 (crystalline silica) is listed on the TSCA inventory.

**Significant New Use Rule:** None of the chemicals in this product have a SNUR under TSCA.

**Section 12b:** None of the chemicals in this product are listed under Section 12b.

**CERCLA:** Hazardous Substances and corresponding RQs – None of the chemicals in this product have an RQ.

**SARA:** Section 302 Extremely Hazardous Substances – none have a TPQ

Section 311/312 Hazardous Categories – none

Section 313 Toxic Chemicals – none

Codes – CAS# 14808-60-7: chronic

**Health & Safety Reporting List:** None of the chemicals in this product are listed.

**Chemical Test Rules:** None of the chemicals in this product are under a Chemical Test Rule.

**Clean Air Act:** This product does not contain any hazardous air pollutants.  
This product does not contain any Class 1 Ozone depletors.  
This product does not contain any Class 2 Ozone depletors.

**Clean Water Act:** None of the chemicals in this product are listed as Hazardous Substances under the CWA.  
None of the chemicals in this product are listed as Priority Pollutants under the CWA.  
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:** None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE:** CAS# 7782-42-5 can be found on the following state right to know lists: California, Pennsylvania, Minnesota, Massachusetts.  
CAS# 14808-60-7 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.

**CA Prop 65:** Warning: This product contains quartz, a chemical known to the state of California to cause cancer.  
California No Significant Risk Level: None of the chemicals in this product are listed.

**Canada - DSL/NDL:** CAS# 7782-42-5 is listed on Canada's DSL List.  
CAS# 14808-60-7 is listed on Canada's DSL List.

**Canada – WHMIS:** This product has a WHMIS classification of D2A.

**Canadian Ingredient Disclosure List:** CAS# 14808-60-7 is listed on the Canadian Ingredient Disclosure List.

## Section 16 – Other Information

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### Abbreviations:

**ACGIH** – American Conference of Governmental Industrial Hygienics  
**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/NDL** – 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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