

## Material Safety Data Sheet - Graphite Concentrate R1

Publish Date: July 18, 2024

---

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

**1.1 Product identifiers** Product name: Graphite Concentrate, 97% Carbon natural  
Product Number: Volt Carbon G0001  
Brand: Volt Carbon Technologies

**1.2 Relevant identified uses of the substance or mixture and uses advised against**  
Identified uses: Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

**Company:** VOLT CARBON TECHNOLOGIES INC.

70 Country Hills Landing, NW, Suite 117, Calgary, AB, T3K 2K2, Canada  
www.voltcarbontech.com

**1.4 Emergency telephone:** 647 546-7049

---

### SECTION 2: Hazards identification

**2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture.

**2.2 GHS Label elements, including precautionary statements**

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

**Hazard Pictogram:**



**Signal Word:**

Warning

**Hazard Statements:**

H350 May cause cancer

H372 Causes damage to organs through prolonged or repeated exposure if inhaled

**Precautionary Statements:**

Prevention:

- P260 Do not breathe dust
- P264 Wash skin thoroughly after handling
- P280 Wear protective gloves/eye protection/protective clothing/face protection

Response:

P308 + P313 If exposed or concerned: Get medical advice/attention

Storage: P405 Store locked up

Disposal: P501 Dispose of contents and container according to local regulation

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS**

None Unknown

**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

Flake graphite (Carbon, C variety)  
 CAS # 7782-42-5, EC #231-955-3  
 Molecular Weight: 12.01 g/mol

Silica (SiO<sub>2</sub>)  
 CAS # 14808-60-7, EC #238-878-4  
 Molecular Weight: 60.08 g/mol

Naturally occurring mineral (inert ash)  
 CAS #999999-99-4  
 Molecular Weight: Undefined for mixture

**SECTION 4: First aid measures**

**4.1 Description of first-aid measures**

4.1.1 Inhalation	If breathed in, move the person into fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen.
4.1.2 Skin Contact	Wash off with soap and plenty of water.
4.1.3 Eye Contact	Flush eyes with water as a precaution.
4.1.4 Ingestion	Never give anything by mouth to an unconscious person. Rinse the mouth with water.

#### **4.2 Most important symptoms and effects, both acute and delayed**

- The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

#### **4.3 Indication of any immediate medical attention and special treatment needed**

If symptoms develop and persist, seek medical attention.

---

### **SECTION 5: Firefighting measures**

#### **5.1 Extinguishing media**

- Use water spray, alcohol-resistant foam, dry chemical extinguisher.

#### **5.2 Special hazards arising from the substance or mixture**

At temperatures above 1500 C, graphite reacts with substances containing oxygen, including carbon dioxide. In case of intense fire, use sand to cover and isolate graphite.

#### **5.3 Advice for firefighters**

- Wear self-contained breathing apparatus for firefighting if necessary.

#### **5.4 Further information**

- No data available

---

### **SECTION 6: Accidental release measures**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

- Avoid dust formation.
- Avoid breathing vapors, mist or gas.
- For personal protection see section 8.

#### **6.2 Environmental precautions**

- No special environmental precautions required.

#### **6.3 Methods and materials for containment and cleaning up**

- Sweep up and shovel.
- Keep in suitable, closed containers for disposal.

#### **6.4 Reference to other sections**

- For disposal see section 13.

---

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

- Advice on protection against fire and explosion
- Provide appropriate exhaust ventilation at places where dust is formed.
- Hygiene measures
- General industrial hygiene practice.
- For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

- Storage conditions: Keep the container tightly closed in a dry and well-ventilated place. Keep in a dry place.
- Storage class (TRGS 510): 11: Combustible Solids

**7.3 Specific end use(s)**

- Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

- Ingredients with workplace control parameters

Components	CAS-No.	Value	Control Parameters Basis
Graphite	7782-42-5	TWA 2 mg/m <sup>3</sup>	Canada. British Columbia OEL
Graphite	7782-42-5	TWAEV 5 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne
Graphite	7782-42-5	TWAEV 10 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

Graphite	7782-42-5	TWAEV 2 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
Graphite	7782-42-5	TWA 2 mg/m <sup>3</sup>	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Graphite	7782-42-5	TWA 2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
Silica	14808-60-7	TWAEV 6 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne
Silica	14808-60-7	TWA 1.5 mg/m <sup>3</sup>	Canada. British Columbia OEL
Silica	14808-60-7	TWA 0.025 mg/m <sup>3</sup>	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)

## 8.2 Exposure controls

- Appropriate engineering controls: General industrial hygiene practice.
- Personal protective equipment
- Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
- Body Protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- Respiratory protection: Respiratory protection is not required. Where protection from nuisance levels of dusts is desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- Control of environmental exposure: No special environmental precautions required.

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance: Solid dark grey to black powder
- Odor: Not applicable
- pH: No data available

- Melting point/freezing point: Melting point: 3,652 °C (6,606 °F)
  - Initial boiling point and boiling range: No data available
  - Flash point: No data available
  - Evaporation rate: No data available
  - Flammability (solid, gas): No data available
  - Upper/lower flammability or explosive limits: No data available
  - Vapor pressure: No data available
  - Vapor density: 1.8 (Air = 1)
  - Water solubility: Immiscible
  - Partition coefficient: n-octanol/water: No data available
  - Autoignition temperature: > 500C
  - Decomposition temperature: No data available
  - Viscosity: No data available
  - Explosive properties: No data available
  - Oxidizing properties: No data available
- 

## 9.2 Other safety information

- No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

- No data available

---

### 10.2 Chemical stability

- Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

- Non reactive under ambient conditions.

### 10.4 Conditions to avoid

- Avoid dust accumulation

### 10.5 Incompatible materials

- No data available

### 10.6 Hazardous decomposition products

- In the event of fire: see section 5

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

- Acute toxicity

- LD50 Oral - Rat - female: > 2,000 mg/kg (OECD Test Guideline 423)

- LC50 Inhalation - Rat - male and female - 4 h: 2,000 mg/m<sup>3</sup> (OECD Test Guideline 403)

- Dermal: No data available
- Skin corrosion/irritation - Skin - Rabbit: Result: No skin irritation (OECD Test Guideline 404)
- Serious eye damage/eye irritation - Eyes - Rabbit: Result: No eye irritation (OECD Test Guideline 405)
- Respiratory or skin sensitization - Mouse: Did not cause sensitization on laboratory animals. (OECD Test Guideline 429)
- Germ cell mutagenicity: No data available
- Ames test *S. typhimurium*: Result: negative
- Carcinogenicity: IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- Reproductive toxicity: No data available
- Specific target organ toxicity - single exposure: No data available
- Specific target organ toxicity - repeated exposure: No data available
- Aspiration hazard: No data available
- \*\*Repeated dose toxicity - Rat - male - Feed - NOAEL (No observed adverse effect level) - 813 mg/kg  
RTECS: MD9659600

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

---

## **SECTION 12: Ecological information**

### **12.1 Toxicity**

- Toxicity to fish semi-static test LC50 - *Danio rerio* (zebra fish): > 100 mg/l - 96 h (OECD Test Guideline 203)
- Toxicity to daphnia and other aquatic invertebrates static test EC50 - *Daphnia magna* (Water flea): > 100 mg/l - 48 h (OECD Test Guideline 202)
- Toxicity to algae static test EC50 - *Pseudokirchneriella subcapitata*: > 100 mg/l - 72 h (OECD Test Guideline 201)

### **12.2 Persistence and degradability**

- No data available

### **12.3 Bioaccumulative potential**

- No data available

### **12.4 Mobility in soil**

- No data available

### **12.5 Results of PBT and vPvB assessment**

- PBT/vPvB assessment: not available as chemical safety assessment not required/not conducted

### **12.6 Other adverse effects**

- No data available

## **SECTION 13: Disposal considerations**

### **13.1 Waste treatment methods**

- Product: Offer surplus and non-recyclable solutions to a licensed disposal company.
- Contaminated packaging: Dispose of as unused product.

### **SECTION 14: Transport information**

- TDG: Not regulated as a dangerous good
- IMDG: Not dangerous goods
- IATA: Not dangerous goods
- Further information: Not classified as dangerous in the meaning of transport regulations.

### **SECTION 15: Regulatory information**

- This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.