



# MATERIAL SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Graphite and Carbon By-Product

**Synonyms:** Graphite/Carbon

**Manufacturer Name:**

UCAR Carbon Company Inc.  
*a GrafTech International Ltd. company*  
12900 Snow Road  
Parma, Ohio 44130  
+1 216-676-2000

**Emergency Telephone:**

+1 800-424-9300 or +1 703-527-3887

**Intended Use:** Carbon based additive

**Contact Person:** Dave A. Mieskowski, CSP,  
+1 216-676-2304

## 2 HAZARDS IDENTIFICATION

**Emergency Overview**

**Physical State:** Solid (granules)

**Color:** Gray-black

**Odor:** No characteristic odor

CAUTION!

May cause eye, skin and respiratory tract irritation.

**Potential Health Effects**

**Inhalation:** Dust and fumes generated from the material can enter the body by inhalation. High concentrations of dust and fumes may irritate the throat and respiratory system and cause coughing. Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases.

**Eye Contact:** Dust in the eyes will cause irritation. Exposed individuals may experience eye tearing, redness, and discomfort.

**Skin Contact:** Dust may irritate skin. Prolonged skin contact may cause redness, irritation and dry skin. May cause eczema-like skin disorders (dermatitis).

**Ingestion:** Ingestion of dusts generated during working operations may cause nausea and vomiting.

**Chronic Health Effects:** Prolonged and repeated overexposure to dust can lead to pneumoconiosis. Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of graphite and/or carbon dusts. Skin contact may aggravate an existing dermatitis.

**Target Organ(s):** | Eye | Skin | Lung |

**Potential Physical / Chemical Effects:** Bulk material is non-combustible. The material may form dust and can accumulate electrostatic charges, which may cause an electrical spark (ignition source). High dust levels may create potential for explosion. Care should be taken to seal electrical circuits and switches that may be affected. Dusts should not be emitted to the atmosphere where they may settle on and cause shorting of outside electrical equipment.

**OSHA Regulatory Status:** This product is hazardous according to OSHA 29CFR 1910.1200.

**Environment:** The environmental hazard of the product is considered to be limited.

<b>3</b>	<b>COMPOSITION / INFORMATION ON INGREDIENTS</b>
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**General Information:** Please note that the amount of each ingredient can vary.

Chemical Name	CAS-No.	Concentration*
†Carbon	7440-44-0	5 - 45%
†Coke, Coal (Metallurgical Coke)	65996-77-2	1 - 15%
†Synthetic Graphite	7782-42-5	40 - 90%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

† This chemical is hazardous according to OSHA/WHMIS criteria.

<b>4</b>	<b>FIRST AID MEASURES</b>
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**Inhalation:** If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Move the exposed person to fresh air at once. In case of persistent throat irritation or coughing: Seek medical attention and take along these instructions.

**Eye Contact:** Flush thoroughly with water for at least 15 minutes. Do not rub eye. If irritation occurs, get medical assistance.

**Skin Contact:** Wash skin with soap and water. Get medical attention if irritation develops and persists. If skin rash or an allergic skin reaction develops, get medical attention.

**Ingestion:** Rinse nose, mouth and throat with water. Get medical attention if any discomfort continues.

<b>5</b>	<b>FIRE-FIGHTING MEASURES</b>
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**Extinguishing Media:** Dust: Extinguish with foam, carbon dioxide, dry powder or water fog.

**Unsuitable Extinguishing Media:** None.

**Special Fire Fighting Procedures:** Cool material exposed to heat with water spray and remove it if no risk is involved.

**Unusual Fire & Explosion Hazards:** Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterized. Explosive dust mixtures can be formed at concentrations as low as 25 g/m<sup>3</sup> when carbon/graphite dusts are milled to less than 50 microns.

**Hazardous Combustion Products:** Carbon Oxides, Unidentified organic compounds

**Protective Measures:** Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

**Flammability Class:** NFPA Rating Fire = 1.

<b>6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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**Personal Precautions:** Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Remove sources of ignition. Wear suitable protective clothing and gloves. See Section 8 of the MSDS for Personal Protective Equipment.

**Spill Cleanup Methods:** Collect dust using a vacuum cleaner equipped with HEPA filter. If not possible, gently moisten dust with water fog before it is collected with shovel, broom or the like. Collect in approved containers and seal securely. Containers must be labeled. For waste disposal, see section 13 of the MSDS.

**Environmental Precautions:** No specific precautions. Do not allow material to enter storm or sanitary sewers, groundwater or soil.

**Notification Procedures:** In the event of accidental release, notify relevant authorities in accordance with all applicable regulations.

<b>7</b>	<b>HANDLING AND STORAGE</b>
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**Handling:** Use work methods which minimize dust production. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Carbon, coal and graphite dusts are electrically conductive. Take precautionary measures against static discharges when there is a risk of dust explosion. Use explosion-proof electrical equipment if airborne dust levels are high. Keep away from heat, spark, open flames and other sources of ignition. Keep the workplace clean. Observe good industrial hygiene practices.

**Storage:** Keep away from heat, spark, open flames and other sources of ignition. Keep container closed.

<b>8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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**Exposure Limits:**

Chemical Name	Source	Type	Exposure Limits	Notes
Carbon (Respirable dust.)	ACGIH	TWA	3 mg/m <sup>3</sup>	General dust
Carbon (Inhalable dust.)	ACGIH	TWA	10 mg/m <sup>3</sup>	General dust
Carbon (Total dust.)	US. OSHA Table Z-1	TWA	15 mg/m <sup>3</sup>	General dust
Carbon (Respirable fraction.)	US. OSHA Table Z-1	TWA	5 mg/m <sup>3</sup>	General dust
Synthetic Graphite (Respirable fraction.)	ACGIH	TWA	2 mg/m <sup>3</sup>	
Synthetic Graphite	NIOSH Guide	IDLH	1250 mg/m <sup>3</sup>	
Synthetic Graphite	OSHA Z3	TWA	15 Mppcf	
Synthetic Graphite (Respirable fraction.)	US. OSHA Table Z-1	TWA	5 mg/m <sup>3</sup>	

Consult Canadian Provincial Regulations and/or Mexican Regulations on exposure limits, if applicable.

**Engineering Controls:** Provide adequate ventilation. Mechanical ventilation or local exhaust ventilation may be required. Provide explosion-proof ventilation for high dust concentrations. Observe occupational exposure limits and minimize the risk of inhalation of dust and fumes. Provide access to washing facilities including soap, skin cleanser and fatty cream.

**Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Use a NIOSH-approved respirator if there is a potential for exposure to dust exceeding exposure limits (See 29 CFR 1910.134, respiratory protection standard). Seek advice from supervisor on the company's respiratory protection standards.

**Eye Protection:** Wear safety glasses with side shields (or goggles).

**Hand Protection:** Wear suitable protective gloves to prevent cuts and abrasions. Suitable gloves can be recommended by the glove supplier.

**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental Exposure Controls:** Environmental manager must be informed of all significant spillages.

<b>9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
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**Color:** Gray-black  
**Odor:** No characteristic odor  
**Odor Threshold:** Not applicable.  
**Physical State:** Solid (granules)  
**pH:** Not applicable  
**Melting Point:** >2760°C (5000°F)  
**Freezing Point:** Not applicable.  
**Boiling Point:** Not applicable.  
**Flash Point:** Not applicable.  
**Evaporation Rate:** Not applicable.  
**Flammability Limit - Upper (%):** Not applicable.  
**Flammability Limit - Lower (%):** Not applicable.  
**Vapor Pressure:** Not applicable.  
**Vapor Density (Air=1):** Not applicable.  
**Specific Gravity:** 1.7  
**Solubility in Water:** Insoluble  
**Solubility (Other):** No data available.  
**Partition Coefficient (n-Octanol/water):** No data available.  
**Autoignition Temperature:** Not applicable.  
**Decomposition Temperature:** >2760°C (5000°F)

<b>10</b>	<b>STABILITY AND REACTIVITY</b>
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**Stability:** Material is stable under normal conditions.

**Conditions to Avoid:** Dust is combustible, avoid sources of ignition and strong oxidizing agents.

**Incompatible Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:**

At Elevated Temperatures:	Carbon Oxides, Unidentified organic compounds
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**Possibility of Hazardous Reactions:** Will not occur.

<b>11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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**Listed Carcinogens:** None.

**Product Information**

**Acute Toxicity:** High concentrations of dust may irritate throat and respiratory system and cause coughing. May cause eye irritation. May dry the skin leading to discomfort and dermatitis.

**Chronic Toxicity:** Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. Prolonged and repeated overexposure to dust can lead to pneumoconiosis. Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of graphite dusts. Skin contact may aggravate an existing dermatitis.

**12 ECOLOGICAL INFORMATION**

**Ecotoxicity:** The product is not expected to be hazardous to the environment.

**Mobility:** The product is insoluble in water and will sediment in water systems.

**Persistence and Degradability:** The degradability of the product has not been stated.

**Bioaccumulation Potential:** No data available on bioaccumulation.

**Other Adverse Effects:** None known.

**13 DISPOSAL CONSIDERATIONS**

**General Information:** Dispose of waste and residues in accordance with local authority requirements.

**Disposal Methods:** Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Recover and reclaim or recycle, if practical.

**Container:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

**14 TRANSPORT INFORMATION**

**DOT** Not regulated.

**TDG** Not regulated.

**IATA** Not regulated.

**IMDG** Not regulated.

**15 REGULATORY INFORMATION**

**Canadian Controlled Products Regulations:** This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

**WHMIS Classification:** Not classified.

**Mexican Dangerous Statement:** This product is dangerous according to Mexican regulations.

**Inventory Status**

**This product or all components are listed on the following inventory:** EINECS, DSL, PICCS, AICS, CHINA, TSCA, KECI

**US Regulations**

**CERCLA Hazardous Substance List (40 CFR 302.4):** Not regulated.

- : No reportable quantity.

**SARA Title III**

**Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A):** Not regulated.

**Section 311/312 (40 CFR 370):**

Acute (Immediate)     Chronic (Delayed)     Fire     Reactive     Pressure Generating

**Section 313 Toxic Release Inventory (40 CFR 372):** Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

Not regulated.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):** Not regulated.

**Drug Enforcement Act:** Not regulated.

**TSCA:**

**TSCA Section 4(a) Final Test Rules & Testing Consent Orders:** Not regulated.

**TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E):** Not regulated.

**TSCA Section 5(e) PMN-Substance Consent Orders:** Not regulated.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):** Not regulated.

**State Regulations**

**California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):**

Not regulated.

**Massachusetts Right-To-Know List:** Synthetic Graphite

**Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)):** Not regulated.

**Minnesota Hazardous Substances List:** Synthetic Graphite

**New Jersey Right-To-Know List:** Not regulated.

**Pennsylvania Right-To-Know List:** Carbon; Synthetic Graphite

**Rhode Island Right-To-Know List:** Synthetic Graphite

<b>16</b>	<b>OTHER INFORMATION</b>
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**HAZARD RATINGS**

	Health Hazard	Fire Hazard	Instability	Special Hazard
<b>NFPA</b>	1	1	0	--

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
<b>HMIS</b>	1*	1	0	B

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe \* - Chronic Health Effect

Personal Protection codes: B - Safety Glasses, Gloves

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

**General Information:** UCAR CARBON COMPANY INC. ADVISES THE USERS OF THIS PRODUCT TO STUDY THIS MATERIAL SAFETY DATA SHEET (MSDS) AND BECOME AWARE OF PRODUCT HAZARDS AND SAFETY INFORMATION. TO PROMOTE SAFE USE OF THIS PRODUCT, USERS SHOULD NOTIFY THEIR EMPLOYEES, AGENTS AND CONTRACTORS OF THE INFORMATION ON THIS MSDS AND ANY PRODUCT HAZARDS AND SAFETY INFORMATION.

**Issue Date:** 23-Jul-2007

**Supersedes Date:** 23-Jul-2007

**SDS No.:** 1147 NA

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.