

# MATERIAL SAFETY DATA SHEET

<b>Petroleum Coke with Coal Tar Pitch</b>	<i>MSDS No.:</i>	450
	<i>Revision No.:</i>	
	<i>Date:</i>	11/23/04

## PRODUCT AND COMPANY INFORMATION – SECTION 1

<b>Manufacturer/Distributor:</b>	Graphite Sales Inc.
	16710 West Park Circle Drive
	Chagrin Falls, Ohio 44023
	440-543-8221
<b>Product Name:</b>	“Green” Carbonaceous Material
<b>Synonyms:</b>	Coke, Calcined, Electrode Coke, Calcined Special Graphite, Petroleum Coke, Coal tar pitch volatiles
<b>Intended Use:</b>	Raw material for electrode production

**FOR CHEMICAL EMERGENCY, SPILL, LEAK,  
FIRE, EXPOSURE, OR ACCIDENT:**

*In the continental U.S.:* 440-543-8221

## COMPOSITION INFORMATION – SECTION 2

<b>Chemical Name:</b>	Calcined Petroleum Coke
<b>Percent:</b>	70-80
<b>CAS Number:</b>	64743-05-1
<b>Chemical Name:</b>	Coal Tar Pitch
<b>Percent:</b>	20-30
<b>CAS Number:</b>	8007-45-2

## HAZARDS IDENTIFICATION – SECTION 3

<b>EMERGENCY OVERVIEW &amp; HAZARDS PRESENT TO MAN AND THE ENVIRONMENT</b>	<b>Coal Tar Pitch is a CARCINOGEN-HANDLE WITH EXTREME CAUTION.</b>
	<p><b>Coal Tar Pitch</b></p> <ul style="list-style-type: none"> <li>• Can irritate the eyes on contact. Repeated contact can cause brown staining in the eye</li> <li>• Vapor can irritate the nose and throat and can cause hoarseness, nosebleeds, coughing with phlegm, and shortness of breath</li> <li>• Vapor can cause dizziness, headache, poor appetite, and irritability and mood changes.</li> <li>• Higher levels can cause fainting or even coma</li> </ul> <p>Repeated exposure can cause changes in skin pigment and a rash.</p>
<b>REGULATORY STATUS</b>	This material is classified as hazardous under OSHA regulations.
<b>PRIMARY ROUTES OF EXPOSURE</b>	Inhalation is usually the most prominent route, but skin absorption may also be a significant route of exposure.
<b><u>POTENTIAL HEALTH EFFECTS:</u></b>	

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<b>Eyes:</b>	In dust form, may be abrasive and irritating to the eyes.
<b>Skin:</b>	Direct contact can be irritating to the skin and produce skin itching, burning, and swelling and redness.
<b>Inhalation:</b>	Vapor can irritate the nose and throat and can cause hoarseness, nosebleeds, coughing with phlegm, and shortness of breath.
<b>Ingestion:</b>	May cause gastrointestinal disturbances.
<b>MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:</b>	Persons with pre-existing respiratory impairments.
<b>CHRONIC HEALTH EFFECTS:</b>	
<b>Eyes:</b>	In dust form, may be abrasive and irritating to the eyes through mechanical abrasion.
<b>Skin:</b>	Irritating to skin, especially in presence of sunlight. Long exposure may cause skin cancer. Repeated exposure can cause changes in skin pigment and a rash.
<b>Inhalation:</b>	Inhaling fumes over a long period may cause lung cancer.
<b>Ingestion:</b>	May cause nausea, vomiting, and diarrhea.

## FIRST AID MEASURES – SECTION 4

**SEEK MEDICAL ATTENTION FOR ALL CASES OF OVEREXPOSURE.**

### FIRST AID MEASURES:

<b>Eyes:</b>	Flush thoroughly with water, taking special care to rinse under the eyelids. Do not rub the eye as mechanical abrasion due to the dust may be damaging to the cornea. If irritation persists, continue flushing for fifteen (15) minutes. If discomfort persists, seek consultation from a physician.
<b>Skin:</b>	Remove contaminated clothing. Wash irritated area thoroughly with water. Do not rub as mechanical abrasion due to the dust may prolong irritation to the skin.
<b>Inhalation:</b>	If overcome by dust concentrations, remove to a more ventilated area (fresh air).
<b>Ingestion:</b>	Do not induce vomiting. Seek consultation from a physician.
<b>Instructions for Physician:</b>	None recommended.

## FIRE FIGHTING MEASURES – SECTION 5

### NFPA Classification

<u>Health</u>	<u>Fire</u>	<u>Reactivity</u>	<u>Other</u>
2	1	0	N/A

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<b><u>FLAMMABILITY PROPERTIES</u></b>				
<b>Flash Point:</b>	103 ° C – 127 ° C (218 ° F – 260 ° F) (Coal Tar Pitch)	<b>Method:</b>	N/A	
<b>Flammability Limits:</b> (in air % by volume)	<b>LEL:</b>	N/A	<b>UEL:</b>	N/A
<b><u>Autoignition Temperature:</u></b>				
Not determined.				
<b><u>Hazardous Combustion Products:</u></b>				
Carbon Monoxide, Carbon dioxide, reactive hydrocarbons, SOx				
<b><u>Extinguishing Media:</u></b>				
Use extinguishing agent suitable for type of surrounding fire.				
<b><u>Prohibited Extinguishing Media:</u></b>				
None identified.				
<b><u>Firefighting Instructions:</u></b>				
Exposed firefighters should wear MSHA/NIOSH approved self-contained breathing apparatus with full-face mask and full protective equipment.				
<b><u>Unusual Fire and Explosion Hazards:</u></b>				
In dust form, this material is combustible at high temperatures. Dusts may form explosive mixtures in air. Material itself burns with difficulty.				

<b>ACCIDENTAL RELEASE MEASURES – SECTION 6</b>				
<b><u>Personnel Precautions:</u></b>				
Take immediate steps to stop and contain the spill. Caution should be exercised regarding personnel safety and exposure to the spilled material. Keep unnecessary people away. Do not touch or walk through spilled material; stop leak if you can do it without risk.				
<b><u>Environmental Precautions:</u></b>				
Spill and releases of this material to navigable water in sufficient amounts that cause sludge or emulsion under the water must be reported immediately to the National Response Center (800/424-8802), as required by U.S. Federal Law. Contact the Coast Guard and appropriate state and local regulatory agencies. Failure to report these spills may result in substantial civil and criminal penalties.				

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## **Cleanup Methods:**

Small Liquid Spills: Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Small Dry Spills: Shovel into clean, dry containers and cover loosely; move containers from spill area.

Large spills: Dike far ahead of liquid spill for later disposal.

## **HANDLING & STORAGE – SECTION 7**

<b>Handling:</b>	In dust form, handlers should avoid excess dust generation during the handling and contact of this material.
<b>Storage:</b>	In dust form, this material should be stored outdoors with proper provisions for containment or in ventilated indoor areas equipped to confine dusts.
<b>Specific Uses:</b>	Users should avoid inhalation of dust.

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## EXPOSURE CONTROLS / PERSONAL PROTECTION – SECTION 8

### EXPOSURE CONTROLS:

#### Exposure Limit Values:

	<u>OSHA PEL:</u>	<u>ACGIH TLV:</u>
Nuisance Dust (when in dust form)	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Coal Tar Pitch	**0.2 mg/m <sup>3</sup>	**0.2 mg/m <sup>3</sup>

\*\* As coal tar pitch volatiles (benzene soluble fraction).

### Engineering Controls:

VENTILATION: Keep area well ventilated to minimize exposure to dust.

### PERSONAL PROTECTIVE EQUIPMENT:

#### Respiratory Protection:

If exposure limits are exceeded or if irritation is experienced, NIOSH approved respiratory protection should be worn. Respiratory protection may be needed for non-routine or emergency situations.

#### Hand Protection:

Appropriate chemical protective gloves should be used while handling this material.

#### Eye/Face Protection:

Avoid eye contact with this material. Wear safety glasses or chemical goggles. Provide an eyewash station in the work area. Do not wear contact lenses when working with this substance.

#### Skin Protection:

Sufficient protective clothing should be worn to minimize skin exposure when handling this material. Wash contaminated clothing thoroughly before reuse.

#### General Hygiene Considerations:

Wash thoroughly after handling this material to prevent prolonged exposure.

#### Other Protective Equipment:

Depending upon conditions of use, additional protection may be necessary such as face shield, apron, arm-covers, etc.

## PHYSICAL & CHEMICAL PROPERTIES – SECTION 9

**PRODUCT:** "Green" Carbonaceous Material

### General Information:

Appearance	Grey to black solid, may be in the form of a dust
Odor	Odorless

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<b>Important Health, Safety, and Environmental Information:</b>	
Boiling Point	N/A
Melting Point	N/A
Flash Point	218 °F – 260 °F
Explosive Properties	N/A
Oxidizing Properties	N/A
Specific Gravity ( $H_2O = 1$ )	2.07
Water Solubility	Insoluble
Partition Coefficient ( <i>n-octanol/water</i> )	Not Determined
Viscosity	N/A
Vapor Pressure ( <i>mm Hg</i> )	N/A
Vapor Density ( <i>Air = 1</i> )	N/A
Evaporation Rate	N/A
% Volatile ( <i>By Volume @ 68 °F</i> )	Not Determined

<b>STABILITY &amp; REACTIVITY – SECTION 10</b>
<p><b><u>Stability:</u></b></p> <p>This material is stable under normal conditions.</p>
<p><b><u>Conditions to Avoid:</u></b></p> <p>Incompatibilities with strong oxidizers. This condition is aggravated when the material is heated.</p>
<p><b><u>Materials to Avoid:</u></b></p> <p>Incompatibilities with strong oxidizers. This condition is aggravated when the material is heated</p>
<p><b><u>Hazardous Decomposition Products:</u></b></p> <p>Carbon Monoxide, Carbon dioxide, reactive hydrocarbons, SOx.</p>
<p><b><u>Hazardous Polymerization:</u></b></p> <p>Polymerization will not occur with this material.</p>

<b>TOXICOLOGICAL INFORMATION – SECTION 11</b>				
<b><u>Type of Test</u></b>	<b><u>Route of Exposure</u></b>	<b><u>Effects</u></b>	<b><u>Species Observed</u></b>	<b><u>Dose Data</u></b>
Lifetime skin painting (Calcined Petroleum Coke)	Skin Exposure	No effects noted	Mice	25% Mineral Oil Solution
Repeated two (2) year exposure (Calcined Petroleum Coke)	Inhalation	Signs of lung injury, including fibrosis	Rats	10 and 30 mg/m <sup>3</sup>
Repeated two (2) year exposure	Inhalation	No significant effects noted	Monkeys	10 and 30 mg/m <sup>3</sup>

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(Calcined Petroleum Coke)				
TDLo - Lowest published toxic dose (Coal Tar)	Oral	Tumorigenic - equivocal tumorigenic agent by RTECS criteria Skin and Appendages - tumors.	Rodent, mouse	12 gm/kg/30W-C
TDLo - Lowest published toxic dose (Coal Tar)	Skin Exposure	Tumorigenic - carcinogenic by RTECS criteria Skin and Appendages - tumors Tumorigenic - tumors at site of application.	Rodent, mouse	64 gm/kg/36W-I

<b>ECOLOGICAL INFORMATION – SECTION 12</b>
<b><u>Eco-toxicity:</u></b>  No effects are expected from this material due its insolubility. Insolubility leads to non-bio-availability.
<b><u>Mobility:</u></b>  N/A
<b><u>Persistence and Degradability:</u></b>  N/A
<b><u>Bio-accumulative Potential:</u></b>  N/A

<b>DISPOSAL CONSIDERATION – SECTION 13</b>
Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

<b>TRANSPORT INFORMATION - SECTION 14</b>	
<b><u>DOT CLASSIFICATION:</u></b>	
<b>UN Number:</b>	This material is not regulated by the DOT for transportation
<b>Class:</b>	
<b>Proper Shipping Name:</b>	

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<b>Packing Group:</b>	
<b>Marine Pollutant:</b>	
<b>Other Information:</b>	
<b><u>IATA CLASSIFICATION:</u></b>	
<b>UN Number:</b>	This material is not regulated by IATA for transportation
<b>Class:</b>	
<b>Proper Shipping Name:</b>	
<b>Packing Group:</b>	
<b>Marine Pollutant:</b>	
<b>Other Information:</b>	

<b><u>IMDG CLASSIFICATION:</u></b>	
<b>UN Number:</b>	This material is not regulated by IMDG for transportation
<b>Class:</b>	
<b>Proper Shipping Name:</b>	
<b>Packing Group:</b>	
<b>Marine Pollutant:</b>	
<b>Other Information:</b>	

<b>REGULATORY INFORMATION – SECTION 15</b>	
<b><u>US REGULATIONS</u></b>	
<b>ACGIH</b>	10 mg/m3 (TLV for a nuisance dust)- 2 mg/m3 (Coal Tar Pitch)
<b>CAA Section 112</b>	Not Listed
<b>CERCLA</b>	Not Listed
<b>IARC</b>	Listed (Coal Tars, Group 1,2A or 2B)
<b>NTP</b>	Listed (Known Carcinogen, Coal Tar Pitch)
<b>OSHA</b>	15 mg/m3 (PEL for a nuisance dust)-**0.2 mg/m3 (Coal Tar Pitch)
<b>SARA Title III</b>	Not Listed
<b>TSCA</b>	Not Listed
** As coal tar pitch volatiles (benzene soluble fraction).	
<b><u>STATE REGULATIONS</u></b>	
<b>MA Substance List</b>	Listed (Coal Tar 1,7, E*C*)
<b>NJ RTK Hazardous Substance List</b>	Listed (Coal Tar (Coal Tar Pitch))
<b>PA Hazardous Substance List</b>	Listed (Tar, Coal)
<b>Canadian WHMIS</b>	Listed (Coal Tar)

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OTHER INFORMATION - SECTION 16	
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*To the best of our knowledge, the information contained herein is accurate. However, neither Graphite Sales, Inc. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.*