

Safety Data Sheet

Material Name: GRAPHITE

SDS ID: CMC10560

*** Section 1 - PRODUCT AND COMPANY IDENTIFICATION ***

Material Name: GRAPHITE

Manufacturer Information

CMC Cometals
CONTACT:
2050 Center Avenue, Suite 250
Ft. Lee, NJ 07024
Mfg Contact: CMC Cometals

EMERGENCY

Chemical Family

non-metallic

Synonyms

BLACK LEAD; MINERAL CARBON; NATURAL GRAPHITE; GRAPHITE, NATURAL; CRAYON NOIR; C; RTECS:
MD9659600

*** Section 2 - HAZARDS IDENTIFICATION ***

EMERGENCY OVERVIEW

Health Hazards: cancer hazard (in humans)

Physical Hazards: Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation

Long Term: irritation, loss of appetite, chest pain, difficulty breathing, headache, lung damage, heart damage, cancer

Skin

Short Term: no information is available

Long Term: allergic reactions

Eye

Short Term: irritation

Long Term: no information is available

Ingestion

Short Term: no information is available

Long Term: no information is available

*** Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS ***

CAS	Component	Percent	Symbol(s)	Risk Phrase(s)
7782-42-5	GRAPHITE 231-955-3	>99.0	---	---
14808-60-7	QUARTZ 238-878-4	<1.0	T	R:49

Contaminants

MAY CONTAIN TRACES OF IRON, SILICON DIOXIDE.

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*** Section 4 - FIRST AID MEASURES ***

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If a large amount is swallowed, get medical attention.

*** Section 5 - FIRE FIGHTING MEASURES ***

See Section 9 for Flammability Properties

NFPA Ratings: Health: 1 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Flammable Properties

Slight fire hazard. Dust/air mixtures may ignite or explode. Electrostatic charges may be generated by flow, agitation, etc.

Extinguishing Media

regular dry chemical, carbon dioxide, water, regular foam
Large fires: Use regular foam or flood with fine water spray.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

*** Section 6 - ACCIDENTAL RELEASE MEASURES ***

Water Release

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

Occupational spill/release

Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

*** Section 7 - HANDLING AND STORAGE ***

Storage Procedures

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

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*** Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ***

Component Exposure Limits

GRAPHITE (7782-42-5)

ACGIH: 2 mg/m³ TWA (all forms except graphite fibers, respirable fraction)

NIOSH: 2.5 mg/m³ TWA (respirable dust)

1250 mg/m³ IDLH

OSHA (US): 15 mppcf TWA

Mexico: 2 mg/m³ TWA

QUARTZ (14808-60-7)

ACGIH: 0.025 mg/m³ TWA (respirable fraction)

NIOSH: 0.05 mg/m³ TWA (respirable dust)

50 mg/m³ IDLH (respirable dust)

OSHA (US): 30)/(%SiO₂ + 2) mg/m³ TWA, total dust); ((250)/(%SiO₂ + 5) mppcf TWA, respirable fraction);

((10)/(%SiO₂ + 2) mg/m³ TWA, respirable fraction

Mexico: 0.1 mg/m³ TWA (respirable fraction)

IDLH

1250 mg/m³

Ventilation

Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing

Protective clothing is not required.

Glove Recommendations

Protective gloves are not required, but recommended.

Respiratory Protection

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

12.5 mg/m³

Any quarter-mask respirator.

25 mg/m³

Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any supplied-air respirator.

62.5 mg/m³

Any powered, air-purifying respirator with a high-efficiency particulate filter.

Any supplied-air respirator operated in a continuous-flow mode.

125 mg/m³

Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.

Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.

Any supplied-air respirator with a tight-fitting facepiece that is operated in a continuous-flow mode.

Any self-contained breathing apparatus with a full facepiece.

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Any supplied-air respirator with a full facepiece.

1250 mg/m³

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Emergency or planned entry into unknown concentrations or IDLH conditions -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.

Any appropriate escape-type, self-contained breathing apparatus.

*** Section 9 - PHYSICAL AND CHEMICAL PROPERTIES ***

Physical State:	Solid	Appearance:	Not available
Physical Form:		Odor:	Not Available
Odor Threshold:	Not available	Melting Point:	Not available
Boiling Point:	Not applicable	Vapor Pressure:	Not applicable
Vapor Density (air = 1):	Not applicable	Density:	Not available
Specific Gravity (water = 1):	2.09 - 2.23	Water Solubility:	insoluble
Coeff. Water/Oil Dist:	Not available	Sublimation Point:	3650 °C
Molecular Weight:	12.011	Molecular Formula:	C

Solvent Solubility

Soluble: molten iron

Insoluble: acids, alkali

*** Section 10 - STABILITY AND REACTIVITY ***

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Materials to Avoid

halogens, oxidizing materials, metals, bases

GRAPHITE:

CHLORINE TRIFLUORIDE: Ignition.

FLUORINE: Explosive reaction.

OXIDIZERS (STRONG): Fire and explosion hazard.

OXYGEN: Fire and explosion.

POTASSIUM (BURNING): Explosion.

POTASSIUM PEROXIDE: Fire and explosion hazard.

Decomposition Products

oxides of carbon

Thermal decomposition products: oxides of carbon.

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Possibility of Hazardous Reactions

Will not polymerize.

*** Section 11 - TOXICOLOGICAL INFORMATION ***

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

QUARTZ (14808-60-7)

Oral LD50 Rat: 500 mg/kg

RTECS Acute Toxicity (selected)

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Component Carcinogenicity

QUARTZ (14808-60-7)

ACGIH: A2 - Suspected Human Carcinogen

IARC: Monograph 68 [1997] (Group 1 (carcinogenic to humans))

NTP: Known Human Carcinogen

DFG: Category 1 (causes cancer in man, alveola fraction)

OSHA: Present (respirable size)

RTECS Irritation

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Adenocarcinomas and squamous-cell carcinomas of the lung in rats were produced after inhalation or repeated intratracheal instillation of various forms of crystalline silica. Malignant lymphomas developed in rats after intrapleural and intraperitoneal injections of quartz suspensions and intrapleural injection of cristobalite and tridymite. Epidemiologic studies indicate lung cancer occurs more frequently among silicotics than in the general population.

Medical Conditions Aggravated by Exposure

respiratory disorders, heart or cardiovascular disorders, respiratory disorders, skin disorders

RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes the following endpoints:

QUARTZ (14808-60-7)

83 mg/kg intrapleural hamster TDLo; 4000 mg/kg implant mouse TDLo; 4554 mg/kg implant rat TD; 900 mg/kg implant rat TDLo; 50 mg/m³ inhalation rat TCLo (6 hour(s)); 450 mg/kg intraperitoneal rat TD (4 week(s)); 90 mg/kg intraperitoneal rat TD (4 week(s)); 45 mg/kg intraperitoneal rat TDLo; 100 mg/kg intrapleural rat TD; 200 mg/kg intrapleural rat TD; 90 mg/kg intrapleural rat TDLo; 111 mg/kg intratracheal rat TDLo; 100 mg/kg intratracheal rat TDLo (19 week(s)); 90 mg/kg intravenous rat TDLo

RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes the following endpoints:

QUARTZ (14808-60-7)

micronucleus test hamster lung 160 ug/cm²; micronucleus test human lung 40 ug/cm²; DNA damage human other cell types 120 mg/L/24 hour(s); DNA damage rat intratracheal 3 mg/kg

Additional Data

Smoking may enhance the toxic effects.

HEALTH EFFECTS

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Inhalation - Acute Exposure

GRAPHITE: Dust may be mildly irritating to the upper respiratory tract.

Inhalation - Chronic Exposure

GRAPHITE: Repeated inhalation of impure graphite for years may cause graphitosis, a progressive and disabling pneumonconiosis. It is unclear what role silica impurities play in the occurrence and severity of the disease. Exposed persons may be asymptomatic for years and then suddenly become disabled or may develop headache, cough, dyspnea, tightness in the chest, pain, depression, decreased appetite, black sputum, and digital clubbing. Pulmonary edema with severe alveolar hypoxia resulting in cor pulmonale with pulmonary hypertension, right ventricular hypertrophy, and venous congestion have been reported following long exposure to graphite dust. Histopathological examinations have revealed scarring of the lungs, large cysts filled with black fluid, focal and diffuse fibrogenic changes with perifocal emphysema, fibrotic lesions characterized by interwoven bands of collagen in the lungs and bronchial lymph nodes, and widely scattered particles, spicules, and plates of graphite. Hydrothorax, pneumothorax, pleural thickening, and occasionally, pneumonitis may occur.

Skin Contact - Acute Exposure

GRAPHITE: No data available.

Skin Contact - Chronic Exposure

GRAPHITE: Graphite has been reported to produce an allergic dermatitis in workers.

Eye Contact - Acute Exposure

GRAPHITE: May cause slight mechanical irritation and discoloration of lids and conjunctiva. Large quantities may obstruct aqueous outflow mechanically.

Eye Contact - Chronic Exposure

GRAPHITE: No data available.

Ingestion - Acute Exposure

GRAPHITE: No data available.

Ingestion - Chronic Exposure

GRAPHITE: No data available.

*** Section 12 - ECOLOGICAL INFORMATION ***

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

*** Section 13 - DISPOSAL CONSIDERATIONS ***

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

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*** Section 14 - TRANSPORT INFORMATION ***

US DOT Information

No Classification assigned.

TDG Information

No Classification assigned.

ADR Information

No Classification assigned.

RID Information

No Classification assigned.

IATA Information

No Classification assigned.

ICAO Information

No Classification assigned.

IMDG Information

No Classification assigned.

*** Section 15 - REGULATORY INFORMATION ***

U.S. Federal Regulations

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: No Chronic Health: Yes Fire: No Pressure: No Reactive: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
GRAPHITE	7782-42-5	Yes	Yes	Yes	Yes	Yes	Yes
QUARTZ	14808-60-7	No	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Component Analysis

QUARTZ (14808-60-7)

Carc: carcinogen, initial date 10/1/88 (airborne particles of respirable size)

Canada

Germany Water Classification

GRAPHITE (7782-42-5)

Number 801, not considered hazardous to water

QUARTZ (14808-60-7)

Number 849, not considered hazardous to water

QUARTZ (14808-60-7)

Number 849, not considered hazardous to water

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EU Marking and Labelling

Symbols

T Toxic

Risk Phrases

R49 May cause cancer by inhalation.

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
GRAPHITE	7782-42-5	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes
QUARTZ	14808-60-7	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

* * * Section 16 - OTHER INFORMATION * * *

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Full text of R phrases in Section 3

R49 May cause cancer by inhalation.

Other Information

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