

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier****Material Name**

Silicon Carbide Infiltrated/Coated Graphite

Details of the supplier of the safety data sheet

Entegris, Inc.
129 Concord Road
Building 2
Billerica, MA 01821
USA

Telephone Number: +1-952-556-4181

Telephone Number: +1-800-394-4083 (toll free within North America)

Emergency Telephone Number:

Chemtrec Local in Country (Tel Aviv) (972)-37630639

Chemtrec International 1-703-527-3887

E-mail: Product.stewardship@entegris.com

SECTION 2: Ingredients

CAS	Component Name	Percent
7782-42-5	Graphite	90-99
409-21-2	Silicon carbide	1-10

Impurities and stabilizing additives contributing to the GHS Classification

None

SECTION 3: Hazard Identification**GHS Classification**

None needed according to classification criteria.

Label elements**Hazard symbols**

None needed according to classification criteria.

Signal word

None needed according to classification criteria.

Hazard statements

None needed according to classification criteria.

Precautionary statements**Prevention**

None needed according to classification criteria.

Response

None needed according to classification criteria.

Storage

None needed according to classification criteria.

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards Which Do Not Result in Classification

None known.

SECTION 4: First aid measures**Description of Necessary Measures****Inhalation**

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

Skin contact

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.

Eye contact

Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects**Symptoms: Immediate**

No information on significant adverse effects.

Symptoms: Delayed

No information on significant adverse effects.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

SECTION 5: Firefighting measures**Suitable extinguishing media**

Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media

None known.

Specific hazards arising from the chemical

Negligible fire hazard.

Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Dike for later disposal.

Hazardous Combustion Products

oxides of carbon, oxides of silicon

SECTION 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Wear personal protective clothing and equipment. Minimize dust generation and accumulation. Keep unnecessary people away, isolate hazard area and deny entry. Provide adequate ventilation. Dust deposits

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Non-sparking tools should be used when working with dust. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Environmental precautions

Avoid release to the environment.

Methods for Containment

Keep unnecessary people away, isolate hazard area and deny entry. If sweeping of a contaminated area is necessary, use a dust suppressant agent. Collect spill using a vacuum cleaner with a HEPA filter or wet and scoop up dry spills. Avoid sweeping spilled dry material. Eliminate ignition sources including sources of electrical, static or frictional sparks. Keep out of water supplies and sewers. Prevent entry into waterways, sewers, basements, or confined areas. Avoid accumulation of airborne dusts. Small spills: Move containers away from spill to a safe area. Vacuum or sweep up material and place in a designated, labeled waste container. Large spills: If emergency personnel are unavailable vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

None needed according to classification criteria.

Store in accordance with all current regulations and standards. Store in a well-ventilated area. Keep container tightly closed. Store in a cool, dry place. Maintain graphite blocks in stable position. Any machine generated dust should be maintained in closed container. Maintain blocks as shipped, no specific handling or storage identified. Keep separated from incompatible substances. Follow MSDS and warning labels even when containers are empty.

Incompatible Materials

oxidizing materials

SECTION 8: Exposure controls/personal protection

Exposure Guidelines

Component Exposure Limits

Graphite	7782-42-5
ACGIH:	2 mg/m3 TWA (all forms except graphite fibers) respirable particulate matter
OSHA (US):	15 mg/m3 TWA (synthetic) total dust ; 5 mg/m3 TWA (synthetic) respirable fraction
OSHA (Vacated):	10 mg/m3 TWA (synthetic) total dust ; 5 mg/m3 TWA (synthetic) respirable fraction
Israel:	2 mg/m3 TWA respirable fraction, all forms except graphite fibers
Silicon carbide	409-21-2

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

ACGIH:	10 mg/m ³ TWA nonfibrous, inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica ; 3 mg/m ³ TWA nonfibrous, respirable particulate matter, particulate matter containing no asbestos and <1% crystalline silica ; 0.1 fiber/cm ³ TWA (as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination) respirable fibers, including whiskers, length >5 μm, aspect ratio >=3:1
NIOSH:	10 mg/m ³ TWA total dust ; 5 mg/m ³ TWA respirable dust
OSHA (Vacated):	10 mg/m ³ TWA total dust ; 5 mg/m ³ TWA respirable fraction
Israel:	10 mg/m ³ TWA nonfibrous, inhalable fraction, particulate matter containing no asbestos and <1% crystalline silica ; 3 mg/m ³ TWA nonfibrous, respirable fraction, particulate matter containing no asbestos and <1% crystalline silica ; 0.1 fiber/cm ³ TWA respirable fibers, including whiskers, length >5 μm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination

Biological limit value

There are no biological limit values for any of this product's components.

Appropriate engineering controls

Provide local exhaust or process enclosure ventilation system. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection

SCBA with full face piece should be available in case of emergency.

Hand protection

Wear appropriate chemical resistant gloves.

Eye/face protection

Wear safety glasses.

Skin and Body Protection

Wear appropriate chemical resistant clothing.

SECTION 9: Physical and chemical properties
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Appearance	greenish-gray to silver solid	Physical State	solid
Odor	odorless	Color	greenish-gray to silver
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	Not applicable
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	Not available	Flammability (solid, gas)	Not flammable

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

Autoignition Temperature	Not available	Flash Point	(Not flammable)
Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	Not available
Vapor Density (air=1)	Not available	Specific Gravity (water=1)	Not available
Water Solubility	(Insoluble)	Partition coefficient: n-octanol/water	Not available
Viscosity	Not available	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	2.3 - 2.8 g/cc
Physical Form	solid	Sublimation	3650 °C
Molecular Weight	Not available		

SECTION 10: Stability and reactivity**Reactivity**

No reactivity hazard is expected.

Chemical stability

Stable at normal temperatures and pressure.

Possibility of hazardous reactions

Will not polymerize.

Conditions to avoid

Avoid accumulation of airborne dusts. Avoid contact with incompatible materials.

Materials to Avoid (Incompatibilities)

oxidizing materials

Hazardous decomposition products**Thermal decomposition products**

oxides of carbon, oxides of silicon

SECTION 11: Toxicological information**Information on Likely Routes of Exposure****Inhalation**

No information on significant adverse effects.

Skin

No information on significant adverse effects.

Eye

No information on significant adverse effects.

Ingestion

No information on significant adverse effects.

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

Acute Toxicity Estimate

No data available.

Immediate Effects

No data available.

Delayed Effects

No data available.

Irritation/Corrosivity Data

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

Mutagenic Data

No data available for the mixture.

Reproductive Effects Data

No data available for the mixture.

Tumorigenic Data

No data available for the mixture.

Specific Target Organ Toxicity - Single Exposure

No data available.

Specific Target Organ Toxicity - Repeated Exposure

No data available.

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure

No data available.

SECTION 12: Ecological information**Component Analysis - Aquatic Toxicity**

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

Other Ecotoxicity Information

No data available.

Mobility in soil

No data available for the mixture.

Persistence and Degradability

No data available for the mixture.

Bioaccumulative potential

No data available for the mixture.

Other adverse effects

None

SECTION 13: Disposal considerations**Disposal Methods**

Dispose in accordance with all applicable regulations.

Contaminated packaging disposal

Dispose in accordance with all applicable regulations.

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

SECTION 14: Transport information

IATA Information:

UN#: Not regulated

ICAO Information:

UN#: Not regulated

IMDG Information:

UN#: Not regulated

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Special precautions

None

SECTION 15: Regulatory information

Environmental Protection Law - Pollutant Release and Transfer Register (PRTR) - Threshold Quantities

None of this product's components are on the list

Risk Management for Hazardous Materials - Separation Distances in Stationary Hazardous Sources - Toxic Substances

None of this product's components are on the list

Risk Management for Hazardous Materials - Policy of Accidental Release Prevention - Flammable Substances

None of this product's components are on the list

Risk Management for Hazardous Materials - Policy of Accidental Release Prevention - Propellant Substances

None of this product's components are on the list

Component Analysis - Inventory

Graphite (7782-42-5)

US	CA	EU	AU	PH	JP - ENC S	JP - ISH L	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EN	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Silicon carbide (409-21-2)

US	CA	EU	AU	PH	JP - ENC S	JP - ISH L	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Safety Data Sheet

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SECTION 16: Other information**NFPA Ratings**

Health: 0 Fire: 0 Reactivity: 0

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

Summary of Changes

11/29/2017 - Update to Section(s) 2. Section 2 update: Replaced CAS #7440-44-0 with CAS #7782-42-5.

Preparation Date

05/03/2016

Revision date

11/29/2017

Product Use

Semiconductor and industrial applications

Restrictions on Use

None known.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); 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; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; Ne - Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; quantitative; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Safety Data Sheet

Material Name: Silicon Carbide Infiltrated/Coated Graphite

SDS ID: 0145 (ISRAEL)

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