

Safety Data Sheet

Material Name: 碳化硅渗透/石墨涂层; Silicon Carbide Infiltrated/Coated Graphite
Revision date: 2017-11-29

**Compliant with GB/T 16483
and GB/T 17519
SDS ID: 0145 (CHINA)
Version 2.0**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Material Name

碳化硅渗透/石墨涂层; Silicon Carbide Infiltrated/Coated Graphite

Details of the supplier of the safety data sheet

当地信息 (Local information) :

艾微美科材国际贸易(上海)有限公司
ATMI International Trading Co,LTD

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邮政编码 : 201203
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应急电话 :
Emergency Call:

86-21-80236500 (上海)
1-703-527-3887 (国际)
400-6267911 (中国, 24 小时应急电话)
E-mail: Product.stewardship@entegris.com

Product Use

Semiconductor and industrial applications

Restrictions on Use

None known.

Section 2 - HAZARDS IDENTIFICATION

GHS hazard classification (according to GB 30000.2-GB 30000.29)

None needed according to classification criteria

Label elements

Symbol(s)

None needed according to classification criteria

Signal word

None needed according to classification criteria

Hazard Statement(s)

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.

Disposal

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

Physical and Chemical Hazards

No data available

Health Hazards

No data available

Potential Environmental Effects

No data available

Other Hazards Which Do Not Result in Classification

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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

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

Immediate

No information on significant adverse effects.

Delayed

No information on significant adverse effects.

Protection of first-aiders

Wear suitable protective clothing. Perform first aid measures in a safe area.

Note to Physicians

No data available

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Section 5 - FIRE FIGHTING 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.

Hazardous combustion products

oxides of carbon, oxides of silicon

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.

Protective Equipment and Precautions for Firefighters

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

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 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 and Materials for Containment and Cleaning Up

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.

Secondary disaster prevention measures

No data available

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
China:	4 mg/m ³ TWA total dust ; 2 mg/m ³ TWA respirable dust
	8 mg/m ³ STEL total dust ; 4 mg/m ³ STEL respirable dust
ACGIH:	2 mg/m ³ TWA (all forms except graphite fibers) respirable particulate matter

Silicon carbide	409-21-2
China:	8 mg/m3 TWA total dust ; 4 mg/m3 TWA respirable dust
	16 mg/m3 STEL total dust ; 8 mg/m3 STEL respirable dust
ACGIH:	10 mg/m3 TWA nonfibrous, inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica ; 3 mg/m3 TWA nonfibrous, respirable particulate matter, particulate matter containing no asbestos and <1% crystalline silica ; 0.1 fiber/cm3 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
Hong Kong:	10 mg/m3 TWA (containing no asbestos and <1% crystalline silica) total dust ; 4 mg/m3 TWA (containing no asbestos and <1% crystalline silica) respirable dust

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

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
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

Chemical stability

Stable at normal temperatures and pressure.

Possibility of hazardous reactions

No reactivity hazard is expected.

Polymerization

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

Component Analysis - LD50/LC50

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

Acute Toxicity Estimate

No data available.

Immediate Effects

No information on significant adverse effects.

Delayed Effects

No information on significant adverse effects.

Skin Corrosion/Irritation

No data available.

Severe Damage/Irritation of Eyes

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Germ cell mutagenicity

No data available for the mixture.

Component Carcinogenicity

None of this product's components are listed by Ministry of Health, ACGIH or IARC.

Reproductive Effects

No data available for the mixture.

Teratogenicity

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.

Persistence

No data available for the mixture.

Bioaccumulative potential

No data available for the mixture.

Mobility in Environmental Media

No data available for the mixture.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations.

Component waste information

There is no applicable waste information for this product's components.

Contaminated packaging disposal

Dispose in accordance with all applicable regulations.

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

China Regulations

Law of the People's Republic of China on Prevention and Control of Occupational Diseases: Catalogue of Occupational Hazard Factors

Graphite	7782-42-5
Dust:	Present
Silicon carbide	409-21-2
Dust:	Present

State Administration of Work Safety (SAWS) - List of Dangerous Chemicals

None of this product's components are on the list.

List of Dangerous Chemicals for Priority Management

None of this product's components are on the list.

Dangerous Goods List (GB 12268-2012)

None of this product's components are on the list.

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals: Catalog of Toxic Chemicals Severely Restricted From Import and Export

None of this product's components are on the list.

Hazardous Chemicals Control Ordinance (HongKong)

None of this product's components are on the list.

Controlled Chemicals Schedule (HongKong)

None of this product's components are on the list.

Information on International Conventions and Agreements

The Montreal Protocol on Substances that Deplete the Ozone Layer

Montreal Protocol

No components of this material are listed.

UNEP - Stockholm Convention - Persistent Organic Pollutants (POPs)

Stockholm Convention

No components of this material are listed.

UN/FAO/Rotterdam Convention - Chemicals Subject to Prior Informed Consent (PIC)

No components of this material are listed.

Component Analysis - Inventory

Graphite (7782-42-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Silicon carbide (409-21-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

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) 3. Section 3 update: Replaced CAS #7440-44-0 with CAS #7782-42-5.

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04/21/2016

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11/29/2017

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).

Training advice

Available upon request

Key literature references and sources for data

Available upon request

Other Information**Disclaimer:**

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