

## Safety Data Sheet

Material Name: Poco Graphite Synthetic Graphite - Semiconductor Grade

SDS ID: 0138 (KOREA)

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

Poco Graphite Synthetic Graphite - Semiconductor Grade

**Product Description**

This SDS covers the following Semiconductor Grades: ZEE, SFG, DFP, TRA, HPD, CZR, SCF, PLS, FM.

**Product Use**

semiconductor manufacture

**Restrictions on Use**

None known.

**Supplier Information**

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**SECTION 2: Hazards identification****Hazard/Risk 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/Risk Statement**

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.

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**Disposal**

**P501** Dispose of contents/container in accordance with local/regional/national/international regulations (depending on the information set out in the Waste Control Act).

**Potential Environmental Effects**

No data available.

**Other Hazards Which Do Not Result in Classification**

When processed by milling, grinding, sawing, burning or other similar processes the generated dust, fines, fume or mist may pose a hazard through inhalation, ingestion or by eye or skin contact. May form combustible dust concentrations in air (during handling or processing).

**SECTION 3: Composition / information on ingredients**

CAS	Chemical name	Other Names	Percent
7782-42-5	Graphite	--	>99

**Impurities and stabilizing additives contributing to the GHS Classification**

None

**SECTION 4: First aid measures****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.

**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.

**Inhalation**

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. 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**

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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.

### Combustion

oxides of carbon

## 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 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 breathing dust. Wash hands thoroughly after handling. Avoid contact with eyes, skin and clothing.

### Conditions for safe storage, including any incompatibilities

None needed according to classification criteria.

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated area.

Keep container tightly closed. Keep separated from incompatible substances. 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. Dust or powder from machining process should be kept in closed container.

### Incompatible Materials

oxidizing materials

## SECTION 8: Exposure controls/personal protection

### Exposure Guidelines

### Component Exposure Limits

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<b>Graphite</b>	<b>7782-42-5</b>
<b>Korea:</b>	2 mg/m <sup>3</sup> TWA (synthetic, except graphite fibers ) respirable fraction
<b>ACGIH:</b>	2 mg/m <sup>3</sup> TWA (all forms except graphite fibers ) respirable particulate matter

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

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

**Appropriate engineering controls**

Provide local exhaust 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**

**Eye/face protection**

When contacted directly to the applicable substance or with possible exposure, ensure to wear the required protective goggle/face shield certified by the Korea Occupational Safety and Health Agency (KOSHA).  
Install eyewash and emergency shower facility near the work area.

**Skin and Body Protection**

When contacted directly to the applicable substance or with possible exposure, ensure to wear the required protective clothing certified by the Korea Occupational Safety and Health Agency (KOSHA).

**Hand protection**

When contacted directly to the applicable substance or with possible exposure, ensure to wear the required safety gloves certified by the Korea Occupational Safety and Health Agency (KOSHA).

**Protective Materials**

No data available.

**Respiratory Protection**

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

**Further information**

No data available.

<b>SECTION 9: Physical and chemical properties</b>
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<b>Appearance</b>	gray to black solid
<b>Physical State</b>	solid
<b>Physical Form</b>	solid block
<b>Color</b>	gray to black
<b>Odor</b>	odorless
<b>Odor Threshold</b>	Not available
<b>pH</b>	Not available
<b>Melting Point</b>	Not available
<b>Freezing point</b>	Not available

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<b>Boiling Point</b>	Not available
<b>Boiling Point Range</b>	Not available
<b>Flash Point</b>	(Not flammable )
<b>Evaporation Rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not flammable
<b>Upper Explosive Limit</b>	Not available
<b>Lower Explosive Limit</b>	Not available
<b>Vapor Pressure</b>	Not available
<b>Solubility (Other)</b>	Not available
<b>Water Solubility</b>	(Insoluble )
<b>Vapor Density (air=1)</b>	Not available
<b>Specific Gravity (water=1)</b>	Not available
<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Autoignition Temperature</b>	Not available
<b>Decomposition temperature</b>	Not available
<b>Viscosity</b>	Not available
<b>Molecular Weight</b>	12.01
<b>Density</b>	1.4 - 2 g/cc
<b>Sublimation</b>	3650 °C
<b>Molecular Formula</b>	C

### 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)**

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oxidizing materials  
**Hazardous Decomposition Products**  
**Thermal decomposition products**  
oxides of carbon

<b>SECTION 11: Toxicological information</b>
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**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

**Health Hazards****Acute and Chronic Toxicity****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 corrosive/irritant**

No data available.

**Serious eye damage/irritation**

No data available.

**Respiratory Sensitization**

No data available.

**Dermal Sensitization**

No data available.

**Carcinogenicity**

Not applicable based on available data.

**Component Carcinogenicity**

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

**Mutagenic Data**

Not applicable based on available data.

**Reproductive Effects Data**

Not applicable based on available data.

**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.

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**Additional Data**

No data available.

**SECTION 12: Ecological information**

**Ecotoxicity**

**Component Analysis - Aquatic Toxicity**

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

**Persistence and degradability**

No data available.

**Bioaccumulative Potential**

No data available.

**Mobility in soil**

No data available.

**Other adverse effects**

No data available.

**SECTION 13: Disposal considerations**

**Disposal Methods**

Dispose in accordance with all applicable regulations.

**Disposal Precaution**

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**

**Korea Regulations**

**Industrial Safety and Health Act**

<b>Graphite</b>	<b>7782-42-5</b>
Harmful Agents Subject to Work Environment Monitoring (Measurement Cycle: 6 months):	
Dust:	Present

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Occupational exposure limit values:	
TWA.	2 mg/m <sup>3</sup> TWA (synthetic, except graphite fibers ) respirable fraction Serial No. 716

**Chemicals Control Act (CCA)**

None of the substances are regulated under the Chemicals Control Act.

**Dangerous Materials Safety Control Act**

This product is not regulated under the Dangerous Materials Safety Control Act.

**Waste Management Act**

Designated Waste

**Other requirements in domestic and other countries**

No data available.

**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	EIN	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes

**SECTION 16: Other information**

**NFPA Ratings**

Health: 1 Fire: 0 Reactivity: 0

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

**Information sources and references**

No data available.

**Summary of Changes**

11/6/2017 - Update to Section(s) 2, 3, 8, 11. Section 3 update: Replaced CAS #7440-44-0 with CAS #7782-42-5.

**Preparation Date**

03/15/2016

**Revision date**

11/6/2017

**Issue Date**

11/6/2017

**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);



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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; 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; NDSL - Non-Domestic Substance List (Canada); 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; 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; 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 NCI (Draft) - Vietnam National Chemicals Inventory (NCI) (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

### Other Information

#### Disclaimer:

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