Entegris

# Safety Data Sheet

**Material Name: POCO石墨合成石墨 - 浸渍铜 - EDM级; Poco Graphite Synthetic Graphite - Copper Impregnated - EDM Grade**
**Revision date: 2017-11-01**

**Compliant with GB/T 16483 and GB/T 17519**
**SDS ID: 0133 (CHINA)**
**Version 2.0**

## Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Product identifier**
**Material Name**

POCO石墨合成石墨 - 浸渍铜 - EDM级; Poco Graphite Synthetic Graphite - Copper Impregnated - EDM Grade

**Product Description**

This SDS covers the following EDM Grades: EDM-C3, EDM-C200.

**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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Unit 523-533, Tower 2, German Center, No.88 Keyuan Road, Shanghai 201203, China

邮政编码： 201203
Zip Code: 201203

电话：86-21-80236500
Telephone: 86-21-80236500

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**

EDM Machining

**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**

May form combustible dust concentrations in air.

**Health Hazards**

respiratory tract irritation, eye irritation, allergic reactions, digestive tract damage, mutagenic effects, liver damage, blood damage, kidney damage, nose damage, respiratory system damage, skin damage, stomach disorders, circulatory system damage

**Potential Environmental Effects**

Very toxic to aquatic life with long lasting effects.

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

When processed by milling, grinding, welding, melting, sawing, brazing, 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). Small chips and dust generated by processes may be environmentally hazardous and toxic to aquatic life. SECTION 16: Other information.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| CAS | Component Name | Percent |
|---|---|---|
| 7782-42-5 | Graphite | 40-60 |
| 7440-50-8 | Copper | 40-60 |

## 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**

respiratory tract irritation, eye irritation, allergic reactions, digestive tract damage

**Delayed**

allergic reactions, mutagenic effects, liver damage, digestive tract damage, blood damage, kidney damage, nose damage, respiratory system damage, skin damage, stomach disorders, circulatory system damage

**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. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Hazardous combustion products**

oxides of carbon, oxides of copper

**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. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to 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. Collect spillage.

**Methods and Materials for Containment and Cleaning Up**

Do not touch or walk through spilled material. Stop leak if possible without personal risk. 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**

Do not breathe dust. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear protective gloves/clothing and eye/face protection. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions.

**Conditions for safe storage, including any incompatibilities**

None needed according to classification criteria.

Store and handle in accordance with all current regulations and standards. 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**

acids, oxidizing materials

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines**

**Component Exposure Limits**

| | |
|---|---|
| Graphite | 7782-42-5 |
| China: | 4 mg/m3 TWA total dust ; 2 mg/m3 TWA respirable dust |
| | 8 mg/m3 STEL total dust ; 4 mg/m3 STEL respirable dust |
| ACGIH: | 2 mg/m3 TWA (all forms except graphite fibers ) respirable particulate matter |
| Copper | 7440-50-8 |
| China: | 1 mg/m3 TWA dust ; 0.2 mg/m3 TWA fume |
| | 2.5 mg/m3 STEL dust ; 0.6 mg/m3 STEL fume |
| ACGIH: | 0.2 mg/m3 TWA fume |
| Hong Kong: | 0.2 mg/m3 TWA fume ; 1 mg/m3 TWA dust and mist |

**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. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin and Body Protection**

Wear appropriate chemical resistant clothing.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| **Appearance** | gray to black solid block | **Physical State** | solid |
| **Odor** | odorless | **Color** | gray to black |
| **Odor Threshold** | Not available | **pH** | Not available |

| | | | |
|---|---|---|---|
| **Melting Point** | 1083 °C (Copper ) | **Boiling Point** | Not available |
| **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** | 2.8 - 3.5 g/cc |
| **Physical Form** | solid block | **Sublimation** | 3648.9 °C (graphite ) |
| **Molecular Weight** | Not available | | |

**Other information**

No additional information is 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)**

acids, oxidizing materials

**Hazardous decomposition products**

**Thermal decomposition products**

oxides of carbon, oxides of copper

## 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**

respiratory tract irritation, eye irritation, allergic reactions, digestive tract damage

**Delayed Effects**

allergic reactions, mutagenic effects, liver damage, digestive tract damage, blood damage, kidney damage, nose damage, respiratory system damage, skin damage, stomach disorders, circulatory system damage

**Skin Corrosion/Irritation**

No information on significant adverse effects.

**Severe Damage/Irritation of Eyes**

irritation

**Respiratory Sensitization**

No data available.

**Dermal Sensitization**

Component data indicate the substance is sensitizing.

**Germ cell mutagenicity**

Available data characterizes this substance as mutagenic.

**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**

respiratory system, digestive system

**Specific Target Organ Toxicity - Repeated Exposure**

liver, blood, kidneys, nose, respiratory system, skin, stomach, digestive system, circulatory system

**Aspiration hazard**

No data available.

**Medical Conditions Aggravated by Exposure**

blood system disorders, kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies

## Section 12 - ECOLOGICAL INFORMATION

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

**Component Analysis - Aquatic Toxicity**

| | |
|---|---|
| Copper | 7440-50-8 |
| Fish: | LC50 96 h Pimephales promelas 0.0068 - 0.0156 mg/L; LC50 96 h Pimephales promelas <0.3 mg/L [static ]; LC50 96 h Pimephales promelas 0.2 mg/L [flow-through ]; LC50 96 h Oncorhynchus mykiss 0.052 mg/L [flow-through ]; LC50 96 h Lepomis macrochirus 1.25 mg/L [static ]; LC50 96 h Cyprinus carpio 0.3 mg/L [semi-static ]; LC50 96 h Cyprinus carpio 0.8 mg/L [static ]; LC50 96 h Poecilia reticulata 0.112 mg/L [flow-through ] |
| Algae: | EC50 72 h Pseudokirchneriella subcapitata 0.0426 - 0.0535 mg/L [static ] EPA ; EC50 96 h Pseudokirchneriella subcapitata 0.031 - 0.054 mg/L [static ] EPA |
| Invertebrate: | EC50 48 h Daphnia magna 0.03 mg/L [Static ] EPA |

**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.

**Other adverse effects**

No data available.

## 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 |
| Copper | 7440-50-8 |
| Chemical: | 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 |

Copper (7440-50-8)

| 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 |

## Section 16 - OTHER INFORMATION

**NFPA Ratings**

Health: 2 Fire: 0 Reactivity: 0

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

**Summary of Changes**

11/1/2017 - Update to Section(s) 3. Section 3 update: Replaced CAS #7440-44-0 with CAS #7782-42-5.

**Preparation Date**

05/06/2016

**Revision date**

11/1/2017

**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; 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) .

**Training advice**

Available upon request

**Key literature references and sources for data**

Available upon request

**Other Information**

**Disclaimer:**

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When processed by milling, grinding, welding, melting, sawing, brazing, 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. Combustible Dust; Serious Eye Damage/Eye Irritation Category 2A; Skin Sensitization Category 1; Germ Cell Mutagenicity Category 1A; Specific Target Organ Toxicity - Single Exposure Category 1: digestive tract; Specific Target Organ Toxicity - Single Exposure Category 3: respiratory system; Specific Target Organ Toxicity - Repeated Exposure Category 1: liver; Specific Target Organ Toxicity - Repeated Exposure Category 2: digestive tract, hematopoietic system, kidneys, nose, respiratory system, skin, stomach; Hazardous to the Aquatic Environment - Acute Category 1; Hazardous to the Aquatic Environment - Chronic Category 1.