



SPI Supplies Division

Structure Probe, Inc.

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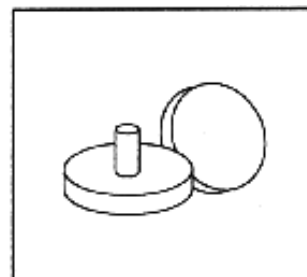
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Manufacturer's CAGE: 1P573

Material Safety Data Sheet

1613X-BA; -MB; 1606X-BA; -MB
1610X-BA; -MB; 1611X-BA; -MB; 1611S-BA; -MB; 1612X-BA; -MB;
1612S-BA; -MB; 1622X-BA; -MB; 1632X-BA; -MB
1604X-BA; -MB;
1609X-BA; -MB; 1607X-BA; -MB
1675X-BA; -MB; 1677X-BA; -MB; 1676X-BA; -MB
1678X-BA; -MB; 1679X-BA; -MB
1601X-BA; -MB; 1601S-BA; -MB; 1602X-BA; -MB; 1601S-BA; -MB
1619X-BA; -MB
14147-AB



Carbon Mounts for Scanning Electron Microscopy

Section 1: Identification

Date Effective..... January 8, 2009
(most recent revision)

Chemical family..... Graphite

CAS #..... 7782-42-5

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s.....

Worldwide phone: 1-(703)-527-3887

Worldwide FAX: 1-(703)-741-6090

Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name.... Graphite (commonly called "carbon") mounts

Emergency Overview:

Contains no ingredients now known to be hazardous by OSHA.
The normal sharpening of the rod, whether being done in a carbon rod sharpener or honing with a razor blade, is suspected of generating small amounts of possibly respirable fibers. We believe that such sharpening should be done in a ventilated hood facility.

Section 2 Composition

Name	CAS #	Approximate Weight %
Graphite	7782-42-5	>99.99%

No hazardous components as defined by OSHA.

313 Listed Chemicals

If none are listed here, there are no 313 chemicals present above threshold values.

NFPA (Scale 0-4):

Not known

Section 3: Hazard Identification

Potential Health Effects:

Eye: Dust may cause eye irritation

Skin Contact: Dust may cause skin irritation.

Skin Absorption: Not expected to be a major route of entry.

Ingestion: Not known

Inhalation: Small graphite fibers or dust are suspected as being possible inhalation hazards.

Chronic effects: A review of the literature does not show obvious long term hazard.

Carcinogenicity: No component known to be present in this product and is at > 0.1% is presently listed as a carcinogen by IARC or OSHA unless otherwise noted.

Routes of exposure: Inhalation

Permissible exposure:

15 MCCPF OSHA TWA, 10 mg/m³ ACGIH TWA (Total Dust)

CIRCLA Hazard Ratings:

Toxicity: 1 Ingnitgability: 0 Reactivity: 0 Persistence: 3

Toxicological Information:

Graphite causes benign pneumoconiosis (graphitosis). Symptoms of pneumoconiosis from graphite exposure are dyspnea, coughing, black sputum, bronchitis, ventricular hypertrophy and impairment of pulmonary function. X-rays will show progressive nodulation of the lungs. The threshold limit value was set in conformity with the limit for free crystalline silica, which may be present in graphite.

Incompatibilities:

Strong oxidizers, fluorine, peroxides

Route of entry: Inhalation, Skin or eye contact.

Target organs: Lungs, Cardiovascular system.

Symptoms:

Coughing, forceful expiration. Dyspnea, difficulty in breathing. Black sputum, black colored expectorate. Bronchitis, inflamed bronchial mucous membranes, pulmonary fibrosis, fibrous tissue involving lungs. Pneumoconiosis, degenerative respiratory disease.

Note:

Sometimes during transit, the mounts in the bag can contact with each other, generating some level of dust in the bag. It might be convenient to carefully open the bag and empty out the dust (powder) into some waste container (for later disposal), replacing the mounts in the now clean polybag. This could be good practice and hygiene in terms of the SEM is concerned since it would eliminate this as a source of particulates in the SEM.

Section 4: First Aid Measures

Eyes: In case of contact, immediately flush eyes with copious amounts of flowing water for at least 15 minutes, retracting eye lids often. Get medical attention immediately. Contact lenses should not be worn when working with this product.

Skin: Wash skin thoroughly with mild soap and water. Flush with luke warm water for 15 minutes.

Inhalation: If large amounts of the dust are inhaled, move the exposed person to fresh air at once. If symptoms persist contact physician.

Ingestion: Not known

Section 5: Fire Fighting Measures

Flammability classification: Not classified.

Flash Point/Method: Not known, but *very high!*

Auto-Ignition Temperature: Not determined

Flammable Limits: Lower: Not applicable
Upper: Not applicable

Extinguishing Media: Non-burning

Special Conditions to Avoid: None known

Hazardous products of Combustion: None known

Unusual Fire Hazards: None known

Firefighting procedures/instructions:

Treat the surrounding fire; this product is non-burning.

Properties that could increase fire or explosion hazard:

None known.

Section 6: Accidental Release Measures

This product is not subject to "accidental release" in normal use as an SEM mount. However, if the powder or fine dust should be released, wear protective clothing, and wet the released powder with any oil based material (e.g. vegetable oil) to keep them from becoming airborne, and then collect and store and then dispose of properly.

Section 7: Handling and Storage

Storage and handling:

Store in the plastic bags in which the product is shipped, tightly sealed.

Section 8: Exposure Controls and Personal Protection

Personal Protective Equipment (PPE):

Eye/Face Protection:

ANSI 87.1 approved safety glasses with side shield when cutting the fibers, either with razor blade or scissors.

Skin Protection:

No particular protection needed when handling this material on an occasional basis. For converting bulk rolls of the fiber into smaller packs, we recommend the wearing of some kind of gloves, for example, latex gloves.

Respiratory Protection:

For the occasional cutting or grinding of a carbon mount, we would recommend appropriate protection.

Other:

Sometimes it is necessary to "polish" the mount on a metallographic polishing table. There is no dust hazard so long as the polishing media is kept wet. However, if the polishing media is allowed to dry out, and then disturbed, a dust hazard can result.

Section 9: Physical and Chemical Properties

Appearance: Black solid pieces of high purity graphite

Color: Black

pH: Not applicable

Odor: None

Vapor Pressure: Not applicable

Vapor Density (Air=1): Not available

Boiling Point/Range: >3000° C

Melting Point/Range: Not available

Specific Gravity: 2 to 2.5 g/cc

Solubility in water: None

Softening Point: Not determined

Molecular Formula: Not known

Molecular Weight: 12.01

%Volatile by Volume: Not determined

Evaporation Rate (n-butyl acetate = 1): Not available

Viscosity: Not available

Bulk Density: Not determined

Section 10: Stability and Reactivity

Chemical Stability: The product is stable under normal use conditions.

Reactivity: This material is not reactive.

Conditions to Avoid:

Heat, sparks, flames, and other ignition sources; avoid heating above 290° C (554° F)

Incompatibility (materials to avoid):

Strong oxidizers, fluorine, peroxides

Hazardous Products of Decomposition:

None known

Reactions with Air and Water:

None known

Section 11: Toxicological Information

Eye Effects: Powder or dust from this material may cause eye irritation.

Skin Effects, Contact: Powder or dust from this material may cause skin irritation

Skin Effects, Absorption: No absorption or acute effects expected. However the dust might cause some mild irritation of the skin.

Acute Oral Effects (Ingestion): None known

Acute Inhalation Effects: None known.

Chronic Effects:

A review of the literature does not show obvious long term hazard.

Carcinogenicity:

No component known to be present in this product at > 0.1% is presently listed as a carcinogen by IARC, NTP, or OSHA unless otherwise noted in Section 16.

Section 12: Ecological Information

Exotoxicity: No ecological information is available for this product.

Section 13: Disposal Considerations

US EPA Hazardous Waste Numbers:

This product as purchased does not fall under current US EPA (Environmental Protection Agency) RCRA definitions of hazardous waste. Under RCRA it is the generator's responsibility to determine the status of the waste at the time of its disposal.

General Disposal Considerations:

All recovered material should be packaged, transported and disposed of (or reclaimed) using good engineering practices. Disposal method must be in compliance with local, state, and federal regulations regarding health, air and water pollution.

CERCLA Reportable Quantity: This product does not contain any CERCLA regulated materials.

Section 14: Transport Information

Proper Shipping Name: Not Regulated

DOT Hazard Class: Non-Regulated

UN/NA ID: Not Regulated

Packing Group: Not Applicable

Labels: Not Regulated

Marine Pollutant: No information

DOT Status: Not Regulated

Section 15: Regulatory Information

All components of this product are listed on the Toxic Substance Control Act (TSCA) Section 8(b) Chemical Inventory and the Canadian Environmental Protection Act (CEPA) provisional domestic substances list (DSL). This product is not a HAZMAT as defined by the OSHA Hazard Communications Standard (29 CFR 1910.1200). This product is not a "controlled product" as defined by the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA Section 302 Extremely Hazardous Substances: Not listed anywhere.

SARA 311/312

Acute: No

Chronic: No

Fire: No

Reactivity: No

Sudden release of pressure: No

SARA Section 313 Toxic Chemicals: No "313 chemicals" contained in this product.

California Prop. 65:

Proposition 65 requires manufacturers or distributors of consumer products into the State of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the State of California to cause cancer or reproductive toxicity, it will be listed below:

No ingredients, present at concentrations > 0.1%, have been found that are presently listed as a carcinogen by IARC, NTP, or OSHA.

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise,

express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

The information and recommendations set forth above are taken from sources believed to be accurate as of the date hereof, however SPI Supplies and Structure Probe, Inc. make no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assume no liability to any user thereof. The information contained in this sheet does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation.

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