

SAFETY DATA SHEET

SDS NA-MC107

Section 1 – Product and Supplier Identification

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| Product identifier used on the label: | Mechanical carbon products; grades that contain nickel/chromium |
| Other means of identification: | The hazard communication label on the product states which SDS is associated with the product. |
| Uses (and restrictions): | Customer applications of carbon products |
| Supplier and contact information: | |
| Morgan Advanced Materials 441 Hall Avenue St Marys, PA 15857 USA | +1(814) 781-1573 www.morgansealsandbearings.com |
| Emergency phone number: | +1(814) 781-1573 08:00-17:00 local time M-F |

Section 2 – Hazard Identification

Morgan Advanced Materials sells two types of mechanical carbon products:

- **Most products are finished parts that have been machined to a size and shape suitable to the customer's use.** Finished mechanical carbon parts are meant to be used without further machining by others and are not expected to release significant amounts of dust. Finished parts do not release substances that present a health or safety hazard. Finished parts are “articles”, are not regulated by OSHA as a hazardous chemical, and a Safety Data Sheet and hazard communication labelling are not required.
- **Morgan also sells material blanks that are machined by the customer, releasing dust.** Dust released by machining may present the hazards described in this Safety Data Sheet. A Safety Data Sheet and hazard communication labelling are required.

Refer to this Safety Data Sheet for information about dust released from this product by cutting and machining or otherwise released through shipping, handling or use.

This product may contain natural graphite. Natural graphite is a mined material and like many materials taken from the ground, natural graphite contains a small percentage of sand. The quartz sand commonly found in nature is a form of crystalline silica. Agencies have classified respirable crystalline silica as a carcinogen. Inhalation of very fine crystalline silica dust may cause lung cancer.

Cutting or machining this product will produce dust. Particle size analysis conducted by Morgan on dust produced during machining at our facilities shows that some of that dust may have a respirable particle size (particles less than 10 microns in size).

Under US OSHA regulations, a product is classified as a carcinogen if it contains more than 0.1% of a substance that has been determined to be a carcinogen.

This product may contain small percentages of crystalline silica (quartz). In solid form, this product does not present a cancer hazard because the crystalline silica cannot be inhaled. Dust generated by cutting and machining this product may contain respirable crystalline silica. Avoid creating and breathing airborne dust.

Classification:

Dust generated by cutting and machining this product is classified as hazardous:

- Specific target organ toxicity/repeated exposure, Category 2 (due to presence of nickel)
- Skin Sensitizer/ Category 1 (due to presence of nickel)
- Carcinogenicity, Category 1A (due to possible presence of respirable dust containing crystalline silica).

Signal word, symbols, hazard and precautionary statements:

Danger



| | |
|---------------------------|--|
| Hazard Statements: | May cause cancer by inhalation. May cause damage to organs through prolonged or repeated exposure. May cause an allergic skin reaction. |
| Precautionary Statements: | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Contaminated work clothing must not be allowed out of the workplace. Wash contaminated clothing before reuse. Wear protective gloves. If exposed or concerned or if skin irritation or rash occurs: Get medical advice/attention. If on skin: Wash with plenty of water. Dispose of contents/container in accordance with local and national regulations. |

Other information about health hazards:

Repeated or prolonged exposure to elevated concentrations of any airborne dust can irritate or harm the respiratory system, especially as an aggravation to a pre-existing condition. The presence of metals in this material can make the dust more irritating to skin, eyes and the respiratory system than if it consisted of carbon/graphite alone. Avoid creating and breathing airborne dust.

Other information about physical hazards:

Dust containing carbon/graphite and metals is electrically conductive and dust accumulations on electrical equipment can cause short circuits resulting in electrical shock, fire or damage to equipment. Dust from this product contains graphite and may create slippery conditions. Carbon/graphite dust may present a combustible dust hazard. Maintain good housekeeping.

Section 3 – Composition

| Component | CAS Registry Number | Concentration % by weight |
|------------------|---------------------|------------------------------|
| Graphite | 7782-42-5 | 0-80% |
| Carbon | 7440-44-0 | 0-80% |
| Nickel (metal) | 7440-02-0 | 10-30% |
| Chromium (metal) | 7440-47-3 | 10-30% |

This material may also contain the following additives:

| | | |
|--------------------|----------------|-----|
| Fluoride Compounds | Not applicable | <2% |
|--------------------|----------------|-----|

Section 4 – First Aid Measures

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|--|--|
| Inhalation: | Remove affected personnel to an exposure-free environment. |
| Skin and eye contact: | Flush eyes with water. Wash skin with soap and water. |
| Ingestion: | Not applicable, not expected |
| Indication of need for immediate medical attention and special treatment: | Not applicable, not expected |

Section 5 – Fire Fighting Measures

This product is not very combustible but may burn if exposed to high temperatures.

Suitable extinguishing media:

Use an extinguisher that is suitable for the surrounding fire.

Combustion hazards:

When burned, carbon/graphite releases carbon dioxide (and possibly carbon monoxide if there is not enough oxygen for complete combustion).

Special fire-fighting procedures:

Use protective clothing and breathing equipment appropriate to the surrounding fire.

Unusual fire and explosion hazards:

As is the case with any combustible dust, concentrations of airborne carbon/graphite dust can present a dust explosion hazard. Practice good housekeeping to prevent dust accumulations and prevent situations where substantial amounts of dust can become airborne. Do not blow dust toward an ignition source.

Flash point: Not applicable

Flammable limits: Not applicable

Section 6 – Accidental Release Measures

Sweep or vacuum spilled material and place into sealable containers. Vacuuming is preferable to sweeping. Do not use compressed air to blow off dust. Avoid creating and breathing airborne dust. Dispose in accordance with applicable waste disposal regulations.

Section 7 – Handling and Storage

Use appropriate dust collection and controls if this product is cut or machined. Practice good housekeeping to avoid the accumulation of dust in the workplace. Vacuuming is preferable to sweeping. Do not use compressed air to blow off dust. Avoid creating and breathing airborne dust. Practice good personal hygiene: wash hands before eating, drinking or smoking and do not store food, or eat or drink, in areas where chemicals are handled.

Section 8 – Exposure Controls and Personal Protection

Exposure limits and guidelines:

| Material | OSHA PEL 8-Hr TWA | ACGIH TLV 8-Hr TWA |
|--------------------|--|--|
| Graphite* | 15 mg/m ³ (total) 5 mg/m ³ (respirable) | 2.0 mg/m ³ (respirable) |
| Carbon | 15 mg/m ³ (total) 5 mg/m ³ (respirable) | 10 mg/m ³ (total) 3 mg/m ³ (respirable) |
| Nickel (metal) | 1 mg/m ³ | 1.5 mg/m ³ |
| Chromium (metal) | 1 mg/m ³ | 0.5 mg/m ³ |
| Fluoride | 2.5 mg/m ³ | 2.5 mg/m ³ |
| Crystalline Silica | 0.050 mg/m ³ (respirable fraction) | 0.025 mg/m ³ (respirable fraction) |

* This product may contain natural graphite or synthetic graphite. The PEL indicated here (the PEL for inert or nuisance dust) is for synthetic graphite. Since natural graphite can contain crystalline silica (quartz), the PEL for respirable crystalline silica (as quartz) is listed separately.

Other jurisdictions may have different exposure limits and control guidelines. Users are advised to consult and comply with local regulations.

Engineering controls:

Use appropriate dust collection and controls if this product is cut or machined.

Use good housekeeping practices.

Personal protective equipment:

Use NIOSH-approved respiratory protective equipment if exposures exceed established limits.

General hygiene considerations:

Wash hands before eating, drinking or smoking and do not store food, or eat or drink, in areas where chemicals are handled.

Section 9 – Physical and Chemical Properties

| | | | |
|---|----------------|---------------------------------|----------------|
| Appearance: | Black solid | Odor: | No odor |
| Odor threshold: | Not applicable | pH: | Not applicable |
| Melting point: | Not applicable | Boiling point: | Not applicable |
| Flash point: | Not applicable | Evaporation rate: | Not applicable |
| Flammability: | Not applicable | LEL/UEL: | Not applicable |
| Vapor pressure: | Not applicable | Vapor density: | Not applicable |
| Relative density: | Not applicable | Water solubility: | Insoluble |
| Partition coefficient (n-octanol/water): | Not applicable | Autoignition temperature | Not applicable |
| Decomposition temperature: | Not applicable | Viscosity: | Not applicable |

Section 10 – Stability and Reactivity

This material is stable and non-reactive.

Section 11 – Toxicological Information

The International Agency for Research on Cancer (IARC) classifies metallic nickel as Category 2B (possibly carcinogenic to humans).

Natural graphite can contain crystalline silica in the form of quartz sand. Respirable crystalline silica has been identified as a carcinogen. The International Agency for Research on Cancer (IARC) lists respirable crystalline silica as a Group 1 carcinogen. The US Department of Health and Human Services National Toxicology Program (NTP) lists respirable crystalline silica as a known human carcinogen. Prolonged and excessive exposure to respirable crystalline silica can cause lung disease, including silicosis. “Respirable crystalline silica” is crystalline silica in the form of fine dust (with a particle size less than 10 microns) that can be breathed into the lungs.

Additional toxicological information is available through the U.S. National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS). See website: <http://www.cdc.gov/niosh/ipcsneng/nengrtec.html>.

Graphite RTECS # MD9659600
Carbon RTECS # FF5250100
Nickel RTECS # QR5950000
Chromium RTECS # GB4200000
Crystalline Silica (Quartz) RTECS # VV7330000

Section 12 – Ecological Information

Carbon/graphite would be expected to have negligible consequence in the environment. The respirable crystalline silica identified above as a carcinogen by inhalation is natural quartz sand, commonly found in nature. Nickel and chromium can be environmental pollutants.

Section 13 – Disposal Considerations

This product does not contain substances that would be expected to cause it to be hazardous waste under federal regulations in the United States, if disposed. Dispose in accordance with applicable waste disposal regulations or recycle for metal content.

Section 14 – Transport Information

This product is not regulated as a hazardous material for transportation purposes by any known authority.

Section 15 – Regulatory Information

All materials in this product are listed on the US EPA Toxic Substances Control Act (TSCA) inventory.

Nickel and chromium are US EPA CERCLA Hazardous Substances, if in powder form.

Nickel and chromium are subject to the reporting requirements of Section 313 of the US Emergency Planning and Community Right-to-Know Act (also known as SARA Title III).

California Proposition 65: This product contains nickel, which is known to the State of California to cause cancer. This product may contain crystalline silica (quartz); airborne respirable crystalline silica is known to the State of California to cause cancer.



This product contains nickel and may contain crystalline silica (quartz), which are classified as Class D, Division 2, Subdivision A under Canada Controlled Products Regulations (WHMIS). This product would be considered an “article” if used as a finished part, or may be classified as Class D, Division 2, Subdivision A if the material is cut or machined, releasing respirable dust.

Section 16 – Other Information

HMIS Ratings

(for dust produced by cutting and machining)

| | |
|------------------------|-----------|
| Health | 2* |
| Flammability | 1 |
| Physical Hazard | 0 |

* indicates possible chronic health effects from continuing exposures

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