

MorganAM&T Material Safety Data Sheet

MSDS NA-EC103

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Section 1 – Products and Supplier

Generic product type:	Electrical carbon products (e.g., carbon brushes and contacts); grades that contain copper
Trade names:	See list of applicable Morgan AM&T grades in Section 16
Uses (and restrictions):	Customer applications of carbon products; typically carbon brushes for electric motors
Supplier and contact information:	
Morgan AM&T 251 Forrester Drive Greenville, SC 29607 USA	+1(864)458-7777 08:00-17:00 local time M-F www.morganamt.com

Section 2 – Hazard Identification

Emergency overview:

This product is a solid electrical component and presents no immediate hazards; however, dust created in shipping, handling and use may exhibit the hazards of the ingredients as described below. Avoid creating and breathing airborne dust.

Short-term effects:

Dust from this material may irritate skin and eyes, primarily through mechanical abrasion. Particles of copper imbedded in the eye can cause inflammation and degeneration/discoloration of tissues. The materials in this product are not normally absorbed through the skin. Inhalation of dust may cause nose and throat irritation. Avoid creating and breathing airborne dust. See chronic health effects, below, for effects that are more typical of chronic exposure but may also be caused by excessive, acute exposures. The decomposition of cured resin binders or impregnants caused by the heat of use in an electric motor can cause odors.

Chronic health effects:

Repeated or prolonged exposure to elevated concentrations of airborne dust can irritate the respiratory system, especially as an aggravation to a pre-existing condition. Long-term inhalation of excessive amounts of dust can result in lung damage (pneumoconiosis). Inhalation of significant quantities of very fine copper dust can cause "metal fume fever", with flu-like symptoms. Avoid creating and breathing airborne dust. Ingestion of excessive amounts of copper can cause gastrointestinal irritation, nausea and constipation or diarrhea. Prolonged, excessive exposure to copper can cause liver and kidney damage.

Physical hazards:

Dust containing carbon/graphite and metals is electrically conductive and dust accumulations on electrical equipment can cause short circuits. Dust from this product contains graphite and may create slippery conditions. Maintain good housekeeping.

Section 3 – Hazardous Components

Component	Concentration % by weight	CAS Registry No.
Graphite	0-90%	7782-42-5
Carbon	10-90%	7440-44-0
Copper	10-90%	7440-50-8
Tin	0-10%	7440-31-5
Molybdenum Disulfide	0-10%	1317-33-5
Silicon Carbide	0-10%	409-21-2
Cured Resins	0-10%	n/a

Section 4 – First Aid Measures

First aid measures may be appropriate in cases of acute exposure to high concentrations of dust.

- Remove affected personnel to an exposure-free environment.
- Flush contamination to eyes and skin with water.
- Remove contaminated clothing.

In response to chronic effects (see Section 2 above) treat the immediate symptoms and seek medical advice.

Section 5 – Fire Fighting Measures

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

Extinguishing Media:

Use an extinguisher that is suitable for the surrounding fire.

Special Fire Fighting Procedures:

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

Unusual Fire and Explosion Hazards:

The small amounts of dust possibly generated from the handling and use of carbon products would not be expected to create an airborne dust explosion hazard. Practice good housekeeping to prevent dust accumulations.

Flash Point: Not applicable

Flammable Limits: Not applicable

Section 6 – Accidental Release Measures

Sweep or vacuum spilled material and place into sealable containers. Avoid creating and breathing airborne dust. Dispose in accordance with applicable waste disposal regulations.

Section 7 – Handling and Storage

Practice good housekeeping to avoid the accumulation of dust in the workplace. Avoid creating and breathing airborne dust. Practice good 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)
Copper	1 mg/m ³ (dust)	1 mg/m ³ (dust)
Tin	2 mg/m ³	2 mg/m ³
Molybdenum Disulfide	15 mg/m ³	10 mg/m ³
Silicon Carbide	15 mg/m ³ (total) 5 mg/m ³ (respirable)	10 mg/m ³ (total) 3 mg/m ³ (respirable)

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

Engineering controls:

Use good housekeeping practices. Use general or local exhaust ventilation, if necessary, to reduce concentrations of airborne contaminants.

Personal protective equipment:

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

General hygiene considerations:

Do not eat, drink or smoke when handling these products. Do not store food or drink in areas where chemicals are handled. Wash hands after handling these products.

Environmental exposure controls:

Use dust collection or HVAC filters to minimize release of airborne dust to outside air.

Section 9 – Physical and Chemical Properties

Appearance:	Black or copper solid	Odor:	No odor
Melting Point:	Not applicable	Boiling Point:	Not applicable
Vapor Pressure:	Not applicable	Percent Volatile:	Not applicable
Vapor Density:	Not applicable	Evaporation Rate:	Not applicable
Water Solubility:	Insoluble	Specific Gravity:	Varies

Section 10 – Stability and Reactivity

This material is generally stable and non-reactive.

Section 11 – Toxicological Information

None of the materials in this product are listed as a carcinogen by IARC, OSHA or NTP.

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
Copper RTECS # GL5325000
Tin RTECS # XP7320000
Molybdenum Disulfide RTECS # QA4697000
Silicon Carbide RTECS # VW0450000

Section 12 – Ecological Information

Carbon/graphite is relatively inert and would be expected to be of negligible consequence in the environment. Copper can be toxic to aquatic life if released and dissolved into water.

Section 13 – Disposal Considerations

This electrical component is typically part of an assembly that can be recycled for metal content. This product does not contain substances that could cause it to be hazardous waste, if disposed. Dispose in accordance with applicable waste disposal regulations.

Section 14 – Transport Information

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

Section 15 – Regulatory Information

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

Copper is a CERCLA Hazardous Substance, if in powder form.

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

Section 16 – Other Information

HMIS Ratings

Health	1*
Flammability	1
Physical Hazard	0

*** indicates possible chronic health effects from continuing exposures**

National ® Grades associated with this MSDS:

AYK, A12BT, A840K, BHK, B509, CA345, CA345-1, CA345-2, CA345R, CM2, CM2B, CM3, CM3B, CM3B-1, CM3B-2, CM3H, CM50, CM5B, CM5B-1, CM5H, CM6, CM807, CM8100, CM8105, CM8121, CM8121-1, CM-807-1, CM817, CM817-1, CM817-2, CM853R, CM855, CM880, CM9, CO29, CO2913, CO39, CO3913, CO465, CO475, CO483, DM4A, DM4D, DM4N, DM5D, DM803, DM803R, DM809, DW15, DW18, F19, F55, F63, F77, F83, F88, F90, F91, F93, H803, L365, L367, L4, L984 M14A, M17, M19, M2650, M2650A, M2665, M2665A, M2675, M2675A, M28D, M673, M753, M783, M785, M788, MY7D, MY258P, SCB67, SCB73, SCS67, SRB12, SRB16, SRB51, SCB53, SRB53, SRB98, SRB136, SRB156, SRB168, SRB184, SRS12, SRS16, SRS51, SRS53, SRS98, SRS136, SRS156, SRS168, SRS184, TB923, TB960, VE3273, VH800, VH801, VH8109, VH8221, 2CM50, 12, 16, 51, 53, 98, 136, 156, 168, 456, 537, 538, 549, 537D, 559, 673, 840BT, 840K, 992, 998.

This MSDS can be used for the base materials (blocks and pellets) used to fabricate finished carbon parts.

Reasonable care has been taken in the preparation of information contained in this Material Safety Data Sheet and the information is provided in good faith. Morgan AM&T assumes no responsibility as to the accuracy of information drawn from other sources. No warranty, expressed or implied, is made. Information provided in this MSDS has been prepared by competent and appropriately qualified and trained persons according to the US OSHA Hazard Communication Standard and Canada Controlled Products Regulations (WHMIS).

The information contained in this Material Safety Data Sheet relates to the electrical carbon parts manufactured and sold by Morgan AM&T and to the dust that may be generated from those parts in shipping, handling and use. It does not cover dust or odors that may be generated from other parts in an electric motor or assembly.