

MATERIAL SAFETY DATA SHEET

Electrifi Conductive 3D Printer Filament

MSDS DATE:09/27/2016

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Electrifi Conductive 3D Printer Filament

MANUFACTURER: Multi3D LLC

ADDRESS: 140 Science Drive, Gross Hall
Room 230F
Durham, NC 27708

EMERGENCY PHONE: (304) 906-9982

Email: info@multi3dllc.com

CHEMICAL FAMILY: Polymer-metal composite

PRODUCT USE: 3D Printing

Restrictions on Use: Do not use in printers where temperatures exceed 250°C.

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview: Under normal use conditions, this material is considered to present minimal humal health and environmental hazards.

Signs and Symptoms of Potential Overexposure:

INHALATION: Dust particles may require cleaning of nasal passages. **EYES:** Mechanical irritation from particulates generated by product. **SKIN:** Decomposition gases may be irritating to the skin. **INGESTION:** Minimal hazard expected in normal industrial use.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredients | CAS | % W/W | Hazard Statement |
|-------------------------|--------------|-------|--|
| biodegradable polyester | trade secret | >1% | Not classified as hazardous. |
| Conductive Filler | trade secret | >1% | Not classified as hazardous. |
| Processing Aides | trade secret | <1% | Levels below 1% do not give rise toclassification. |

SECTION 4: FIRST AID MEASURES

Inhalation

Heating may release vapors which may be irritating. In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still. Get medical advice/attention.

Skin

It is unlikely that first aid will be required. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

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Eyes

It is unlikely that first aid will be required. Dust may be irritating to the eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention, if needed.

Ingestion

IF SWALLOWED: Rinse mouth. Get immediate medical advice/attention.

Indication of any immediate medical attention and special treatment needed

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute

Molten material may cause thermal burns.

Delayed

No information on significant adverse effects.

Note to Physicians

Treat symptomatically. Give artificial respiration if not breathing.

Antidote

None known. Treat symptomatically and supportively

SECTION 5: Fire Fighting Measures

Extinguishing Media

Suitable Extinguishing Media

Water, alcohol resistant foam, regular dry chemical

Unsuitable Extinguishing Media

None known

Special Hazards Arising from the Chemical

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, aldehydes. May decompose upon heating to produce corrosive and/or toxic fumes.

Fire Fighting Measures

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

Special Protective Equipment and Precautions for Firefighters

Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

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No measures required.

Methods and Materials for Containment and Cleaning Up

Collect spilled material in appropriate container for reuse or disposal. Dispose in accordance with all applicable regulations.

Environmental Precautions

Avoid release to the environment. Comply with all applicable regulations on spill and release reporting. Prevent entry into waterways, sewers, basements, or confined areas.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.

Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria.

Store in a cool dry place. Store below 50 C. Avoid heat, flames, sparks and other sources of ignition. Keep away from incompatible materials.

Incompatible Materials

Oxidizing agents, strong bases

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Authorized limit Values:

PNOC (Particulates not otherwise classified)

OSHA PEL

15 mg/m³ – total dust

5 mg/m³ – respirable fraction

Personal Protective Equipment:

RESPIRATORY: Use appropriate respiratory protection in case of dust or dust formation. SKIN: Where contact is likely, wear chemical-resistant gloves (PVC). EYES: Wear safety glasses with side shields. Wear chemical splash goggles and face shield, if risk of splashing. SKIN: Where contact is likely, wear chemical-resistant gloves, a chemical suit and boots. Recommended materials are PVC, neoprene or rubber. Wear appropriate thermal protection when handling hot material. Wear chemical protective clothing in dusty areas.

Engineering Controls: Provide local ventilation suitable for the emission risk

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance Physical state: Solid (Filament Shape)

Melting point/freezing point: Approximately 60 °C

Auto ignition point (ignition point): NA

Specific gravity (relative density): Approximatley 2.5 g/cm³

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Solubility in water: Insoluble

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use
Conditions to Avoid: Moisture, excessive temperatures

Hazardous Polymerization: Will not occur
Incompatibilities: Acids, alkalis

Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide when involved in a fire. Particulates of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

No information available.

SECTION 12: ECOLOGICAL INFORMATION

No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal:

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Multi3D HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION.

SECTION 14: TRANSPORT INFORMATION

DOT INFORMATION:

Proper Shipping Name: Not regulated
Hazard Class: N/A
Packing Group: N/A
UN#: N/A

IATA INFORMATION:

Proper Shipping Name: Not regulated
Hazard Class: N/A
Packing Group: N/A

SECTION 15: REGULATORY INFORMATION

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| | |
|--|----|
| TSCA Inventory 8(b): | No |
| SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR 355): | No |
| SARA Title III Sec. 311/312 (40 CFR 370): | No |
| SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): | No |

CERCLA Hazards Substances (40 CFR Part 302): Listed: NO Unlisted Substances: NO

Canadian DSL Registration: No

WHMIS Classification: Not a controlled product

SECTION 16: OTHER INFORMATION

HMIS HAZARD RATING

| | |
|---------------|---|
| HEALTH: | 0 |
| FLAMMABILITY: | 1 |
| REACTIVITY: | 0 |

PERSONAL PROTECTION: B

FIRE: Material that must be preheated before ignition can occur.

HEALTH:

Materials which on exposure under fire conditions would offer no hazard beyond that of ordinary combustible material.

REACTIVITY:

Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

Disclaimer:

Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.