SAFETY DATA SHEET - MatterHackers PRO Series ESD-Safe PLA

Section 1: Identification of the Substance and Preparation

1.1 Product Identifiers

Product Name: **MatterHackers PRO Series ESD-Safe PLA**

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified uses: 3D printing filament. Material for 3D printing FDM/FFF applications, including static-dissipative (ESD-safe) parts.

1.3 Supplier Information

MatterHackers, Inc.

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Lake Forest, CA 92630

Email: support@matterhackers.com

Phone: +1 (949) 613-5838

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

Not classified as a hazardous substance or mixture under GHS / Regulation (EC) No 1272/2008 (CLP). Not considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

2.2 Label elements

No hazard label required.

2.3 Other hazards

Product is combustible. The product as shipped is not a combustible dust; sanding, grinding, or machining can generate dust that contains carbon nanotubes (see Sections 8 and 11). Thermal decomposition may release irritating fumes. Not expected to pose a significant hazard to air, water, or the environment under normal conditions of use.

Section 3: Composition / Information on Ingredients

3.2 Mixture

Ingredient	CAS No.	Content (%)
Polylactic acid (PLA)	9051-89-2	> 90%
Multi-walled carbon nanotubes	308068-56-6	< 10%

The carbon nanotubes are bound in the polymer matrix.

Section 4: First Aid Measures

4.1 Description of First Aid Measures

Eye contact: Flush eyes with plenty of water for several minutes. Do not rub eyes. If irritation persists, consult a physician.
Skin contact: Wash with soap and water. After contact with molten product, cool rapidly with cold water; do not attempt to remove cooled or solidified polymer from the skin. Seek medical attention.
Inhalation: Move to fresh air. If irritation persists, seek medical attention.
Ingestion: Not likely due to the physical form of the product. If ingested, rinse mouth and drink plenty of water. Do not induce vomiting. Consult a physician if symptoms persist.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Dust from sanding or machining may cause mechanical irritation of the eyes and respiratory tract. Fumes from overheated material may cause irritation.

4.3 Indication of Medical Attention and Special Treatment Needed

Treat symptomatically.

Section 5: Firefighting Measures

5.1 Extinguishing Media

Water spray, dry chemical powder, foam, or carbon dioxide (CO_2). Apply extinguishing media carefully to avoid dispersing dust, which can form a combustible dust-air mixture.

5.2 Special Hazards Arising from the Substance or Mixture

Combustion may produce carbon monoxide (CO), carbon dioxide (CO_2), dense smoke, and irritating fumes.

5.3 Advice for Firefighters

Wear full protective equipment and a NIOSH-approved self-contained breathing apparatus (SCBA).

Section 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

None needed for small spills of solid filament. If dust from sanding or machining is present, use the protective equipment listed in Section 8. Allow molten material to cool before handling.

6.2 Environmental Precautions

Prevent material and dust from entering drains, sewers, or waterways.

6.3 Methods and Materials for Containment and Cleaning Up

Vacuum or sweep up and place in a standard disposal container. A HEPA-filtered vacuum is preferred for dust. Do not use compressed air to clean up dust. If molten, allow the material to cool before collecting it.

Section 7: Handling and Storage

7.1 Precautions for Safe Handling

Avoid breathing dust or fumes generated during processing, and print with adequate ventilation. Do not sand, grind, or machine printed parts without the protective equipment listed in Section 8. Do not allow dust to accumulate; fine dust dispersed in air can form an explosive mixture. Avoid contact with molten polymer. No smoking, open flames, or ignition sources in handling and storage areas.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Store in a cool, dry place in the original sealed packaging, away from oxidizing agents, direct sunlight, moisture, and ignition sources. The filament absorbs moisture; reseal after use.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters

No OSHA PEL or ACGIH TLV is established for this product in its solid form. Note: Sanding, grinding, or otherwise abrading printed parts generates dust, which should be treated as a nuisance dust (particulates not otherwise classified). ACGIH Threshold Limit Value: 10 mg/m^3 total dust; 3 mg/m^3 respirable dust.

Carbon nanotube component: NIOSH Recommended Exposure Limit (REL) of 1 $\mu g/m^3$ as respirable elemental carbon, 8-hour time-weighted average. This applies to airborne nanotubes; nanotubes bound in the filament are not expected to become airborne under normal use.

8.2 Exposure Controls

Engineering controls: Local exhaust ventilation is recommended during printing, and particularly during sanding, grinding, or machining.

Respiratory protection: Not required for normal printing in a well-ventilated area. A NIOSH-approved particulate respirator is recommended for operations that generate dust (sanding, grinding, sawing, machining) or when processing fumes are not controlled by ventilation.
Eye protection: Safety glasses with side shields are recommended.
Skin protection: Canvas or cotton gloves are suitable for normal handling. Use gloves with thermal protection when handling molten material.

Section 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical state: Solid at ambient temperature (filament)
Appearance: Black filament
Odor: None
Glass transition temperature: 55–60°C (supplier SDS: 55°C; supplier TDS: 60°C by DSC)
Melting point: Not determined; softens above the glass transition temperature
Specific gravity / density: 1.26 g/cm^3 (ISO 1183)
Solubility in water: Insoluble
Vapor pressure: Negligible
Auto-ignition temperature: > 375°C
Decomposition temperature: > 250°C
Flammability: Combustible as a dust. Moderately flammable as a solid when exposed to flame (does not self-extinguish), but will not readily ignite.
Explosive properties: Product is not explosive as supplied. Fine dust dispersed in air may form an explosive mixture.

Note: These are typical values and may vary from lot to lot. They should not be construed as specifications.

Section 10: Stability and Reactivity

10.1 Reactivity

No dangerous reactions known under normal conditions of use.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization will not occur. Fine dust dispersed in air may present a dust explosion hazard.

10.4 Conditions to Avoid

Temperatures above 250°C, open flames and other ignition sources, and accumulation of dust.

10.5 Incompatible Materials

Strong oxidizing agents.

10.6 Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, dense smoke, and irritating fumes.

Section 11: Toxicological Information

11.1 Information on Toxicological Effects

Acute toxicity: Specific acute toxicity (LD50/LC50) data has not been established for this product.

Irritation: Dust may cause mechanical irritation of the eyes, skin, and respiratory tract. Vapors from overheated material may cause irritation.

Carcinogenicity: IARC has classified one specific multi-walled carbon nanotube (MWCNT-7) as possibly carcinogenic to humans (Group 2B); other multi-walled carbon nanotubes are not classifiable as to their carcinogenicity (Group 3). The nanotubes in this product are bound in the polymer matrix, and exposure to free nanotubes is not expected from handling or printing the filament. Do not inhale dust from sanding, grinding, or machining. No component is listed as a carcinogen by NTP or OSHA.

Additional information: The complete acute and chronic toxicity profile of this product has not been fully characterized.

Section 12: Ecological Information

No specific ecological data are available for this product. As a water-insoluble polymeric solid, it is not expected to be bioaccumulative. Not classified as a PBT or vPvB substance. Do not allow the product or its dust to enter drains, waterways, or soil.

Section 13: Disposal Considerations

Dispose of in a manner consistent with applicable federal, state, and local regulations. Mechanical recycling is preferred where available. Uncleaned packaging must also be disposed of according to official regulations.

Section 14: Transport Information

Land transport (DOT): Not Regulated
Sea transport (IMDG): Not Regulated
Air transport (IATA/ICAO): Not Regulated

Section 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations Specific to the Substance or Mixture

European Union: Not classified as hazardous under CLP Regulation (EC) No 1272/2008.
Canada – WHMIS: Not a controlled product.
US – EPA: Not regulated.
US – OSHA: Not hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).
US – TSCA: Complies
EU – REACH Annex XVII: Complies (per supplier).
California – Proposition 65: Does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.
Other inventories (per supplier): Canada DSL/NDSL, Japan ENCS, China IECSC, Australia AICS, and Korea KECL: components comply.

Section 16: Other Information

Composition data based on information supplied by our raw material supplier, compiled by MatterHackers, Inc.

The information herein is based on our present knowledge and given in good faith, but no warranty, express or implied, is made. Employers should use this information only as a supplement to other information gathered independently and should make their own judgment regarding suitability for ensuring proper use and protecting employee health and safety.

Contact support@matterhackers.com for more information.

Prepared for: MatterHackers, Inc.
SDS on file since: June 26, 2025
Last Updated: October 8, 2026