

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Name: PolyPlus™ PLA 3D Printing Filament

CAS No.: See Section 3

EC No.: See Section 3

Identified Uses: for fused deposition modeling (FDM) or fused filament fabrication (FFF) based additive manufacturing or 3D printing processes

Manufacturer: JF Polymers (Suzhou) Co. Ltd.

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Tel/Fax: +86-512-52096516 / +86-512-52096512

Emergency telephone number: +86-512-52096516; or call *LOCAL POISON CONTROL CENTER*

2. HAZARDS IDENTIFICATION

Emergency Overview

Not likely to be an irritant in the solid form. Burning produces obnoxious and toxic fumes. Avoid prolonged contact with skin and contact with eyes. Not likely to form a dust in the solid filament form. May generate particulate aerosols during 3D printing.

Potential Acute Health Effects

Inhalation: Inhalation of solid dust or aerosols generated during printing may cause shortness of breath, tightness of the chest, a sore throat and cough. Low hazard for usual industrial or commercial handling.

Eye: Contact with eyes may cause irritation.

Skin: Substance may cause slight skin irritation.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Potential Chronic Health Effects

Carcinogenic Effects: No known carcinogenic effects

Mutagenic Effects: No known mutagenic effects

Teratogenic Effects: No known teratogenic effects

Developmental Toxicity: No known developmental toxicity

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight %	Exposure Limits
Poly(lactic acid) resin	9051-89-2	> 90%	None

4. FIRST AID MEASURES

Inhalation: Move to fresh air. Call a physician immediately if irritation persists.

Skin contact: Rinse immediately with plenty of water. If skin irritation persists, call a physician. Cool skin rapidly with cold water after contact with hot polymer.

Eye contact: Rinse immediately with plenty of water. Call a physician immediately.

Ingestion: Drink water as a precaution. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician immediately.

Notes for the doctor: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

General Information: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Suitable Extinguishing Agents: Foam. Water. Carbon dioxide (CO₂). Dry chemical. Alcohol resistant foams are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively.

Products of Combustion: Burning produces obnoxious and toxic fumes, aldehydes, carbon monoxide (CO), and carbon dioxide (CO₂).

Special Fire Fighting Procedures: Firefighters should wear self-contained breathing apparatus and full fire-fighting turn-out gear (bunker gear). Keep personnel removed and upwind of fire. Water should be used to keep fire-exposed containers cool.

Special Remarks on Fire and Explosion Hazards: Toxic gases/vapors/fumes may emit in a fire.

6. ACCIDENTAL RELEASE MEASURES

General: Wear gloves when handling hot melt of material.

Environmental precautions: Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

Methods and material for containment and cleaning up: Shovel into suitable container for disposal.

7. HANDLING AND STORAGE

Precautions: No special precautions required.

Handling: Avoid prolonged contact with skin and eyes. Avoid dust formation. Workers should be protected from the possibility of contact with molten material. Low hazard for usual industrial or commercial handling.

Storage: Store in cool place. Keep at temperatures below 122F (50 °C). No special restrictions on storage with other products.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation protection: Provide appropriate exhaust ventilation at places where dust is formed or the material is molten, such as during printing.

Skin protection: avoid direct contact to the hot melt of material or wear gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Filament, Solid

Color: Various

Odour: Sweet

pH: Not applicable

Melting point: > 140 °C

Boiling point: Not applicable

Density: about 1.25 g/cm³

Vapor pressure: Not applicable

Partition coefficient (n -octanol/water): Not applicable

Solubility(ies): Not determined

Flash point: Not determined

Auto-ignition temperature: > 350 C

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions

Polymerization: Not applicable

Dangerous Decomposition Products: Burning produces obnoxious and toxic fumes. Aldehydes. Carbon monoxide (CO). carbon dioxide (CO₂).

Conditions to avoid: Temperatures above 446F (230 °C).

Materials to avoid: Oxidizing agents. Strong bases.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Skin contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: There were no target organ effects noted following ingestion or dermal exposure in animal studies.

Chronic Effects on Humans: Did not cause skin allergic reactions in skin sensitization studies using guinea pigs.

Target Organ Effects: There were no target organ effects noted following ingestion or dermal exposure in animal studies.

Skin: LD₅₀/dermal/rabbit > 2000 mg/kg

Ingestion: LD₅₀/oral/rat > 5000 mg/kg

12. ECOLOGICAL INFORMATION

Mobility: No data available.

Bioaccumulation: Does not bioaccumulate. Inherently biodegradable.

Ecotoxicity Effects: EC50/72h/algae > 1100 mg/L

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container. Contact manufacturer if needed.

14. TRANSPORT INFORMATION

Not a DOT controlled material (United States).

Proper Shipping Name: None

Hazard Class: Not regulated

UN. NO.: None

Packing Group: None

IMDG EMS: Not regulated

15. REGULATORY INFORMATION

European/International Regulations

This product is on the European Inventory of Existing Commercial Chemical Substances.

European Labeling in Accordance with EC Directives

Hazard Symbols: N/A

Risk phrases: N/A

Safety phrases: N/A

HMIS (U.S.A.):

Health Hazard: 0

Fire Hazard: 1

Reactivity: 0

Personal Protection:

National Fire Protection Association(U.S.A.):

Health: 0

Flammability: 1

Reactivity: 0

Specific Hazard:

Federal and State Regulations:

Canada–WHMIS:

For details regulations you should contact the appropriate agency in your country.

16. OTHER INFORMATION

Revision:

Disclaimer: