



MATERIAL SAFETY DATA SHEET
according to Regulation (EU) No. 1907/2006

Innofil3D PLA

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

Product information

Trade name : Innofil3D PLA

Chemical name : Polylactic Acid

Chemical family : Thermoplastic Polylactic Acid

Use : Monofilament for 3D-printing

Company : Innofil3D BV.
 Eerste Bokslootweg 17
 7821 AT Emmen

Telephone : +31 (0)591 69 2117

Telefax : +31 (0)591 69 3456

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment

No risk exists to the health of users if the product is handled and processed properly.

Potential health effects:

Eye contact : Contact with eyes may cause irritation.

Skin contact : Substance may cause slight skin irritation.

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

Inhalation : Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

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

Sensitization : Did not cause sensitization on laboratory animals.

Specific hazards : No information available.

Flammability : Fine dust dispersed in air may ignite.



3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature

- Chemical name : Polylactic resin
- CAS Number : 9051-89-2
- Weight : >98%
- OSHA Exposure Limits : None
- ACGIH Exposure Limits : None

All ingredients in quantities > 1% (0.1% for carcinogens) that are potentially hazardous per OSHA definitions.

- Other standards : This material can generate Particulates Not Otherwise Classifiable (PNOC). The Occupational Safety and Health Administration (OSHA) PEL/TWA for PNOC is 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction. The American Conference of Governmental Industrial Hygienists (ACGIH) TLV/TWA for PNOC is 10 mg/m³ for inhalable particulates and 3 mg/m³ for respirable particulates.

4. FIRST AID MEASURES

- Inhalation : Move to fresh air. Call a physician immediately.
- Skin contact : Rinse immediately with plenty of water for at least 15 minutes. 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, also under the eyelids, for at least 15 minutes. 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.
- Note to physician : Treat symptomatically.



5. FIRE-FIGHTING MEASURES

- Flammable properties : Autoignition temperature: 388 °C.
- Suitable extinguishing media : 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.
- Hazardous decomposition products : Burning produces obnoxious and toxic fumes Aldehydes Carbon monoxide (CO) carbon dioxide (CO₂).
- Special protective equipment for firefighters : As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
- Under fire conditions : Cool containers / tanks with spray water. Water mist may be used to cool closed containers.
- Other information : Fine dust dispersed in air may ignite. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment. See Section 8. Remove all sources of ignition. Avoid dust formation. Avoid contact with skin and eyes. Sweep up to prevent slipping hazard.
- Environmental precautions : Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.
- Methods for cleaning up : Shovel into suitable container for disposal.

7. HANDLING AND STORAGE

- Safe handling advice : Avoid contact with skin and eyes. Avoid dust formation. Workers should be protected from the possibility of contact with molten material during fabrication. Low hazard for usual industrial or commercial handling. Use personal protective equipment. See Section 8.
- Storage conditions : Store in cool place. Keep at temperatures below 50 °C (122F). No special restrictions on storage with other products.
- Precautions : No special precautions required.



8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures : Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Provide appropriate exhaust ventilation at places where dust is formed.

Control parameters : None.

Personal protective equipment

Eye protection : Safety glasses with side-shields. Goggles.

Skin and body protection : Impervious clothing.

Respiratory protection : Respirator must be worn if exposed to dust. Wear respirator with dust filter. Respiratory protection is needed if any of the exposure limits in Section 2 are exceeded. Consult an industrial hygiene professional prior to respirator selection and use. Use a positive-pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. **WARNING: Air purifying respirators do not protect workers in oxygen deficient atmospheres.**

Hand protection : Preventive skin protection.

Hygiene measures : Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear, translucent, opaque, pellets. Solid at room temperature.

Color : Clear, Translucent, Opaque.

Odour : Sweet.

pH : Not applicable.

Vapor pressure : Not determined.

Vapor density : Not determined.

Evaporation rate : Not determined.

Density : 1.24 g/cc.

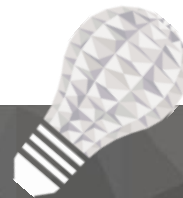
Boiling point/range : Not applicable.

Decomposition temperature : 250 °C (482F).

Melting point/range : 145 – 160 °C.

Water solubility : Insoluble.

Solubility in other solvents : None known.

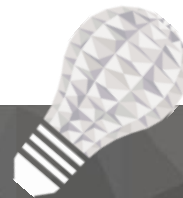


10. STABILITY AND REACTIVITY

Stability	: Stable under recommended storage conditions.
Conditions to avoid	: Temperatures above 230°C (446F).
Materials to avoid	: Oxidizing agents. Strong bases.
Decomposition	: Burning produces obnoxious and toxic fumes. Aldehydes. Carbon monoxide (CO). Carbon dioxide (CO ₂).
Polymerization	: Not applicable.

11. TOXICOLOGICAL INFORMATION

Principle routes of exposure	: Eye contact. Skin contact. Inhalation. Ingestion.
Acute toxicity	: There were no target organ effects noted following ingestion or dermal exposure in animal studies.
Local effects	: May cause eye/skin irritation. Product dust may be irritating to eyes, skin and respiratory system. Caused mild to moderate conjunctival irritation in eye irritation studies using rabbits. Caused very mild redness in dermal irritation studies using rabbits (slightly irritating). Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Long term toxicity	: Did not cause skin allergic reactions in skin sensitization studies using guinea pigs.
Specific effects	: May cause skin irritation and/or dermatitis. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Burning produces irritant fumes.
Mutagenic effects	: Not mutagenic in AMES Test.
Reproductive toxicity	: No data is available on the product itself.
Carcinogenic effects	: No data is available on the product itself.
Target organ effects	: There were no target organ effects noted following ingestion or dermal exposure in animal studies.



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 from residues / unused products:

In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging:

Empty remaining contents. Do not re-use empty containers. Empty containers should be transported/delivered using a registered waste carrier to local recyclers for disposal.

14. TRANSPORT INFORMATION

IMDG : Not regulated.

ICAO/IATA : Not regulated.

15. REGULATORY INFORMATION

(Not meant to be all inclusive—selected regulations represented).

NOTICE: The information herein is presented in good faith and believed to be accurate as of the print date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

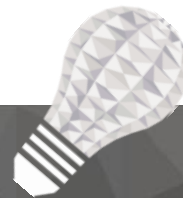
U.S. REGULATIONS.

Sara 313 title III : Not listed.

TSCA Inventory List : Listed.

(STATE REGULATIONS)

California Proposition 65 : Not listed.



OTHER INVENTORIES.

Canada DSL Inventory List : Listed.

REACH/EU EINECS List : Components are in compliance with and/or are listed.

Japan (ECL) : Listed.

Australia (AICS) : Listed.

Korean chemical inventory : Listed.

Phillipines (PICCS) inventory : Not listed.

China inventory of existing
chemical substances list : Listed

16. OTHER INFORMATION

-The information in this Material Safety Data Sheet (MSDS) is based on current knowledge and experience. No liability can be assumed for the accuracy and completeness of this information.

-Users should consider this information only as additional to other data gathered. Independent determination of suitability and completeness of information from all available sources is essential to ensure proper and safe use and disposal of these materials.

-The information in this MSDS applies for this specific material only. It therefore does not apply for its usage in combination with other materials or ways of processing.