MATERIAL SAFETY DATA SHEET

according to Regulation (EU) No. 1907/2006

InnoFlex 60 by Innofil3D BV

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

Trade name	:	InnoFlex 60
Chemical name	:	Polylactic Acid and modified Polyester
Chemical family	:	Thermoplastic Copolymer
Use	:	Monofilament for 3D-printing
Company	:	Innofil3D BV
Street address	:	Eerste Bokslootweg 17
Postal code and city	:	7821 AT Emmen
Country	:	The Netherlands
Telephone number	:	+31 (0) 591 820 389

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]:

No need for classification according to GHS criteria for this product.

Label elements

According to Regulation (EC) No 1272/2008 [CLP]:

The product does not require a hazard warning label in accordance with GHS criteria.

Other hazards

According to Regulation (EC) No 1272/2008 [CLP]:

No specific dangers known, if the regulations/notes for storage and handling are considered.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	:	Polylactic Acid and modified Polyester.
Chemical nature	:	Mixture.

4. FIRST-AID MEASURES

Eye contact	:	Rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.
Skin contact	:	Areas affected by molten material should be quickly placed under cold running water. Burns caused by molten material require hospital treatment.
Inhalation	:	After inhalation of decomposition products, remove the affected person to a source of fresh air and keep calm. Provide medical aid. If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.
Ingestion	:	Rinse mouth and then drink plenty of water. If difficulties occur: Seek medical attention. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.
Note to physician	:	Treat according to symptoms (decontamination, vital functions), no known specific antidote.
Acute toxicity	:	Symptoms: No significant reaction of the human body to the product known. Hazards: No hazard is expected under intended use and appropriate handling.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray, foam, dry powder, carbon dioxide.
Unsuitable media	:	Water jet.
Hazardous decomposition products	:	carbon monoxide, Carbon dioxide, tetrahydrofuran, fumes/smoke, carbon black, harmful vapors. Formation of further decomposition and oxidation products depends upon the fire conditions. Under special fire conditions traces of other toxic substances are possible.
Special protective equipment for firefighters	:	Wear a self-contained breathing apparatus.
Other information	:	The degree of risk is governed by the burning substance and the fire conditions. In case of combustion evolution of toxic gases/vapours possible. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Avoid inhalation. Sources of ignition should be kept well clear.
Environmental precautions	:	No special precautions necessary.
Methods for cleaning up	:	Sweep/shovel up. Avoid raising dust. Ensure adequate ventilation. Dispose of absorbed material in accordance with regulations.

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7. HANDLING AND STORAGE

Safe handling advice	:	Processing machines must be fitted with local exhaust ventilation. When working on exhaust systems special safety precautions must be taken, because dangerous substances can accumulate in the residue of the exhaust system. Avoid the formation and deposition of dust. Handle in accordance with good industrial hygiene and safety practice.
Storage conditions	:	Protect against moisture. Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame. The product must be stored according to the requirements of Regulation (EC) No 2023/2006. Contamination with other substances must be avoided. Storage together with other substances, especially hazardous substances, must be avoided.
Precautions	:	Avoid dust formation. Dust can form an explosive mixture with air. Provide exhaust ventilation. When the product is ground (chopped), dust explosion regulations should be noted.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Eye protection	:	Safety glasses with side-shields (frame goggles) (e.g. EN 166).
Skin and body protection	:	Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).
Respiratory protection	:	Breathing protection if dusts are formed. Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1 or FFP1).
Hand protection	:	Use additional heat protection gloves when handling hot molten masses (EN 407), e.g. of textile or leather.
Hygiene measures	:	Avoid contact of molten material with skin. Avoid inhalation of dusts/mists/vapors. Eye wash fountains and safety showers must be easily accessible. Handle in accordance with good industrial hygiene and safety practice. Avoid inhalation of dusts. Hands and/or face should be washed before breaks and at the end of the shift. Consult the company Industrial Hygienist for recommendations on exposure testing and personal protective equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Filament.
Color	:	Natural White
Physical state	:	Solid at room temperature.
Odor	:	Fain specific odor.
Melting point/range	:	150 – 160 °C
Boiling point/range	:	Not determined.
Flash point	:	> 280 °C
Density	:	0.8 – 1.4 g/cm^3
Thermal decomposition	:	> 280 °C
Vapor pressure	:	Not applicable.
Vapor density	:	Not applicable.
Water solubility	:	Insoluble.

10. STABILITY AND REACTIVITY

Reactivity	:	No hazardous reactions if stored and handled as prescripted/indicated.
Stability	:	The product is stable if stored and handled as prescribed/indicated.
Conditions to avoid	:	Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame.
Materials to avoid	:	Strong oxidizing agents.
Decomposition	:	At prolonged and/or strong thermal stressing above the decomposition temperature dangerous decomposition products can be formed.

11. TOXICOLOGICAL INFORMATION

Principle routes of exposure	:	
Acute toxicity	:	Virtually nontoxic after a single ingestion. The product has not been tested. The statement has been derived from the properties of the individual components.
Irritation	:	Not irritating to the eyes. Not irritating to the skin. Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.
Respiratory/Skin sensitization	:	Skin sensitizing effects were not observed in animal studies. The product has not been tested. The statement has been derived from the properties of the individual components.
Specific effects	:	
Mutagenic effects	:	Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

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Reproductive toxicity	:	Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.
Carcinogenic effects	:	Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.
Other information	:	Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

12. ECOLOGICAL INFORMATION

Mobility	:	Adsorption in soil: Study scientifically not justified.
Bioaccumutation	:	Because of the product's consistency and low water solubility, bioavailability is improbable.
Ecotoxicity effects	:	There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from the structure of the product.
Persistence and degradability	:	The product is biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.
PBT and vPvB assessment	:	The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).
Other adverse effects	:	The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods	:	Check for possible recycling. Observe national and local legal requirements.
Contaminated packaging	:	Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. TRANSPORT INFORMATION

ADR	:	Not classified as a dangerous good under transport regulations.
RID	:	Not classified as a dangerous good under transport regulations.
ADN	:	Not classified as a dangerous good under transport regulations.
IMDG	:	Not classified as a dangerous good under transport regulations.
IATA/ICAO	:	Not classified as a dangerous good under transport regulations.

15. REGULATORY INFORMATION

RoHS Directive	:	Approved.
REACH; 1907/2006/EC	:	Compliant.
SVHC	:	Approved.

16. OTHER INFORMATION

- The information in this Material Safety Data Sheet (MSDS) is mainly based on information used from the supplier of the raw materials which are used for production of the filaments.
- 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 therefor does not apply for its usage in combination with other materials or ways of processing.

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