



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

InnoFlex 45

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

Product information

Trade name : InnoFlex 45

Chemical name : DSM Arnitel Eco

Chemical family : Biobased High Performance Thermoplastic Copolyester TPC

Use : Monofilament for 3D-printing

Company : Innofil3D BV.
 Eerste Bokslotweg 17
 7821 AT Emmen

Telephone : +31 (0)591 69 2117

Telefax : +31 (0)591 69 3456

2. HAZARDS IDENTIFICATION

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

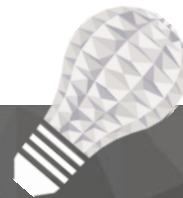
Classification : Not classified

Human health hazards : Dust may cause mechanical irritation. Heated material can cause thermal burns.

Environmental hazards : Based on the available data of this product no hazardous properties are known.

Physical/chemical hazards : Combustible.

Remarks : Hazard of slipping on spilt product. Heated material can cause thermal burns. Electrostatic charging can occur during unloading or processing of this material. If necessary take precautionary measures against static discharges. The likelihood of adverse health effects arising from normal use of the product are considered very low. Appropriate precautions should be taken if the product is subjected to secondary processing. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne



contaminants below the exposure limit. Dust may cause mechanical irritation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/preparation : Preparation

Chemical description : Base polymer: thermoplastic polyester elastomer

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting in this section, in accordance with EU or national regulations.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. Any hazardous constituents are fixed in the polymer matrix and therefore present a negligible exposure risk under normal conditions of processing and handling. Additives contained in this product do not pose a risk to health unless they are liberated during processing (fumes from melting, dusts). Suitable Industrial Hygiene precautions should be implemented to prevent (respirable) dust and fume exposures. Exposure to (melting) fumes should be kept as low as possible, using suitable ventilation equipment. Dusts and fumes created from secondary processing may be irritating to respiratory tract and skin and should be considered as potentially hazardous. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

4. FIRST AID MEASURES

Effects and symptoms

Inhalation : Over-exposure by inhalation may cause respiratory irritation (coughing).

Ingestion : There is no known acute effect after over-exposure to this product.

Skin contact : Heated material can cause thermal burns resulting in pain, redness, blistering.

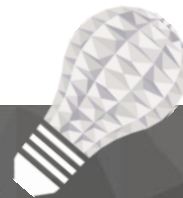
Eye contact : May cause eye irritation (redness).

First aid measures

Inhalation : If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Get medical attention if symptoms occur.

Skin contact : Rinse with plenty of running water. Do not pull coagulated

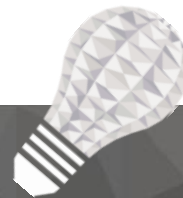


	product loose. Get medical attention.
Eye contact	: Rinse with plenty of running water. Get medical attention if symptoms occur.
First aid facilities	: No special recommendations.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training.

5. FIRE-FIGHTING MEASURES	
Suitable extinguishing media	: Use dry chemical or CO ₂ for small fire. Use dry chemical powder, alcohol-resistant foam for large fire.
Unusual fire/explosion Hazards	: No specific hazard
Hazardous thermal decomposition products	: In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, (dense) black smoke, aldehydes, and organic acids.
Special fire-fighting procedures	: Fight fire from protected location or maximum possible distance. Keep the area surrounding the fire cool. Avoid contact with heated material.
Protection of fire-fighters	: Wear suitable protective clothing. Self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES	
Personal precautions	: Avoid creating dusty conditions and prevent wind dispersal. Use suitable protective equipment (section 8). Keep away from sources of ignition. Take precautionary measures against static discharges.
Environmental precautions	: No special measures required.
Methods for cleaning up	: Vacuum or sweep up material and place in a designated, labelled waste container. Clean up affected area with a large amount of water.

7. HANDLING AND STORAGE	
Handling	: Use with adequate ventilation. Local exhaust ventilation should be provided. Avoid creating dusty conditions and prevent wind dispersal. Take measures against static discharge. Keep away from sources of ignition.



Storage : Store in a fireproof location. Keep away from incompatible materials and avoid specific conditions (see Section 10).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures : Use only with adequate ventilation. Local exhaust ventilation should be provided.

Hygiene measures : When using do not eat, drink or smoke. Wash hands after handling compounds and before eating, smoking and using the lavatory and at the end of the day.

Personal protective equipment – Production scale

Respiratory system : Wear dust protection mast P2.

Skin and body : Working clothes.

Eyes : Face shield.

Hands : When handling hot material, wear heat-resistant protective gloves that are able to withstand the temperature of molten product.

Advice on personal protection is applicable for high exposure levels. Select proper personal protection based on a risk assessment of the actual exposure situation.

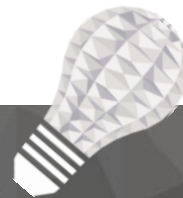
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : Granules, pellets (solid at room temperature).
 Colour : Naturally opaque, dependent on the added pigment.
 Odour : Not available.
 Melting point : 1555 to 225 °C
 Flash point : >350 °C
 Auto-ignition temperature : >400 °C
 Density : >1 g/cm³
 Solubility : Insoluble in the following material: cold water.
 Viscosity : Not available
 Dust explosion class : St1

10. STABILITY AND REACTIVITY

Stability : Stable under recommended storage and handling conditions.
 Conditions to avoid : No special recommendations.
 Materials to avoid : No special recommendations.
 Remarks : At processing temperatures some degree of thermal



degradation may occur (see Section 5).

11. TOXICOLOGICAL INFORMATION

Potential acute health effects

Inhalation : No known significant effects or critical hazards.
 Ingestion : No known significant effects or critical hazards.
 Skin contact : No known significant effects or critical hazards.
 Eye contact : No known significant effects or critical hazards.

Acute toxicity : No specific data.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.
 Carcinogenicity : No known significant effects or critical hazards.
 Mutagenicity : No known significant effects or critical hazards.
 Teratogenicity : No known significant effects or critical hazards.
 Developmental effects : No known significant effects or critical hazards.
 Fertility effects : No known significant effects or critical hazards.

Chronic toxicity : No specific data.
 Carcinogenicity : No specific data.
 Mutagenicity : No specific data.
 Teratogenicity : No specific data.
 Reproductive toxicity : No specific data.

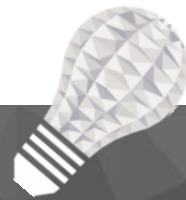
Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. The likelihood of adverse health effects arising from normal use of the product are considered very low.

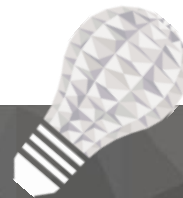
12. ECOLOGICAL INFORMATION

Environmental effects : No known significant effects or critical hazards.
 Aquatic ecotoxicity : No specific data.
 Persistence/degradability : No specific data.
 Other adverse effects : No known significant effects or critical hazards.
 Mobility : For data on physical state and solubility see section 9.
 Remarks : This product is not biodegradable and not toxic to aquatic organisms. The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available.

13. DISPOSAL CONSIDERATIONS

Methods of disposal : Waste must be disposed of in accordance with national and local environmental regulations.
 Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.





14. TRANSPORT INFORMATION

ADR / RID	:	Not regulated
ADN/ADNR	:	Not regulated
IMDG	:	Not regulated
IATA-DGR	:	Not regulated

15. REGULATORY INFORMATION

Risk phrases	:	According to EU Directives 67/548/EEC and 1999/45/EC this product does not require labelling with symbols and/or R-phrases.
Europe inventory	:	At least one component is not 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.