Filaflex®Original 82A

Filaflex is a Thermoplastic Polyether-Polyurethane elastomer with additives that allow high printability in FDM printers, Filaflex® has a remarkable hydrolysis resistance, high resistance to bacteria and low temperature flexibility properties in printed parts.

PHYSICAL PROPERTIES	TYPICAL VALUE	Test method
Density	**1,14 g/cm³**	ISO 1183-1-A
Hardness Shore A	**82**	ISO 7619-1
Elongation at break	**665%**	ISO 37
Tensile strength	**42 Mpa**	ISO 37
Abrasion loss	**23mm³**	ISO 4649-A
Flammability rating	**HB**	UL 94

PRINTING PROPERTIES	VALUE
Printing Temperatures	**225-235°C**
Printing Speed	**20-40 mm/s**
Hot-Bed temperature	**0 °C**
Optimal layer height	**0,2mm**
Minimal Nozzle diameter	**0,3MM (0,4mm or higher recommended)**
Rectraction parameters	**3,5-6,5 mm (speed 20-120 mm/s)**

RECREUS INDUSTRIES S.L. VAT: ESB54876479 C/PICO VELETA, 36 03600 ELDA (ALICANTE) SPAIN
info@recreus.com www.recreus.com
tel: 0034 865 777 966

FILAFLEX ® ORIGINAL MSDS

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 TRADE NAME: FilaFlex®

1.2 COMPANY DETAILS:

RECREUS INDUSTRIES S.L.

C/PICO VELETA, 36

03600 ELDA, (Alicante), SPAIN

Tel: 0034 865 777966

info@recreus.com **www.recreus.com**

2. HAZARDS IDENTIFICATION

Not a product dangerous for health or the environment according to the definition of EC directives 2006/121/EC or 1999/45/EC and their valid adaptations and derived national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Polyurethane Thermoplastic – 97% CAS: 75701-44-9

4. FIRST AIDS

1. General instruction: Change clothes impregnated with the product.
2. In case of inhalation: Supply fresh air. In case of disturbances, consult a doctor.
3. After inhalation of decomposition products, breathe fresh air, rest, seek medical help.
4. In case of skin contact: Wash with soap and water. Visit your doctor if irritation continues skin.
5. After contact with molten product, cool rapidly with cold water. No skin separating the solidified product. Call a doctor immediately.
6. In case of eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. Remove contact lenses, if present and easy. Continue rinsing.
7. If swallowed: Rinse mouth and drink plenty of water. Do not induce vomiting. Consult doctor in case of persistent symptoms.

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media: Water, Foam, Dry chemical

5.2 Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fume.

5.3 Firemen must wear self- contained breathing apparatus.

5.4 Do not allow contaminated extinguishing water to enter the soil, ground- water or surface waters.

6. Measures in case of accidental release

6.1 Personal precautions

- Protective equipment and emergency procedures
- Avoid dust formation.
- Do not breathe dust.
- Keep away from sources of ignition.
- Avoid eye contact.
- Danger of slipping on spilled product or pouring.

6.2 Environmental cautions:

Do not discharge into drains / surface water / ground water.

6.3 Methods and Materials for containment and cleaning up

Allow to solidify, pick up mechanically. Dispose of the material collected according to regulations.

7.HANDLING AND STORAGE

Handling

Adequate ventilation and if necessary, effective exhaust must be provided at the workplace of fused deposition modeling process.

Provided good ventilation and/or local exhaust systems are used, the Workplace Exposure Limit(s) stated in Chapter 8 should not be exceeded. Dust must be removed by effective exhaust ventilation.

Storage

Keep container tightly closed and dry. Storage temperature: < 40 °C

8.Exposure controls / personal protection

Ventilation:

During fused deposition modeling operations, use with ventilation adequate to reduce levels of air contaminants below that which may cause personal injury or illness. Local exhaust ventilation that removes air contaminants from the breathing zone is prefer ed. General, mechanical, or dilution ventilation may be suitable.

Respiratory protection:

In case of dust formation use respiratory equipment with filter type particle filter P1 according to EN 143.

Hand protection:

Suitable materials for safety gloves; EN 374-3: polyvinyl chloride - PVC (>= 0.5 mm)
Contaminated and/or damaged gloves must be changed.

Eye protection:

Wear eye/face protection.

Skin and body protection:

Wear suitable protective clothing.

Further protective measures:

Do not breathe dust/vapor. Grease skin.

9. Physical and chemical properties:

Appearance:	Various colors
Odor:	Odorless
Odour Threshold:	NA
PH:	NA
Boiling Point (° C):	NA
Melting point (° C):	220-240
Softening point (° C):	105
Evaporation Rate:	NA
Properties Flammable / Explosive:	NA
Vapor pressure / vapor density:	NA
Relative density:	1.13
Solubility:	NA
Octanol / water partition:	NA
Auto-ignition temperature:	NA
Decomposition temperature:	NA
Viscosity:	NA
Other properties:	NA

10. Stability and reactivity

Reactivity: Non-applicable

Chemical stability

Thermal decomposition / conditions to be avoided:

- No decomposition with storage and proper handling.

- Avoid impact, friction, heat, sparks, and electrostatic charges.

Possibility of dangerous reactions: Non-applicable.

Conditions to be avoided: No further relevant information.

Incompatible materials: Strong oxidants.

Strong decomposition products

- Irritant gases / vapours.
- Toxic gases / vapours.
- Smoke.
- Carbon monoxide (CO) and carbon dioxide (CO_2) emissions

11.TOXICOLOGICAL INFORMATION

Acute toxicity LD50 oral rat: > 5000 mg/kg

Acute toxicity LD50 subcutaneous, rat: > 5000 mg/kg

Primary skin irritation, rabbit: non-irritant

Primary mucosae irritation, rabbit: non-irritant

Skin sensitisation according to Magnusson/Kligmann (maximizing test):
No sensitisation established on guinea-pigs

Additional information: According to our experience and information the product has no harmful effects on health if properly handled.

12. ECOLOGICAL INFORMATION

Ecotoxicity

It is not expected to be very toxic, but if ingested by birds or aquatic life, can cause adverse mechanical effects

Mobility

Bioconcentration is not expected because of the high molecular weight (MW > 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment material will sink and remain in the sediment.

Persistence and degradability

This solid water-insoluble polymeric are expected to be inert in the environment. Surface degradation is expected with exposure to sunlight. Appreciable biodegradation is not expected.

Additional ecological information

General instructions: CPA 1 (auto classification): not dangerous for water.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can besent to an appropriate collection point set the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

The product is suitable for mechanical recycling. After appropriate treat**m**ent it can be remelted and reprocessed into new moulded articles. Mechanical recycling is only possible if the material has been selectively retrieved and ca efully segregated according to type.

14. TRANSPORT INFORMATION

Not regulated.

15. Regulatory information

Not regulated.

16. Other information

The data is based on the current state of knowledge, but it is not a guarantee of the product features and it is not legally valid in a contractual relationship.