

## Safety Data Sheet

according to EU Directive 1907/2006

**Product name:** Bio-Flex<sup>®</sup> F 9533  
**Date of issue:** 06 September 2016

Version: 1.0

### 1. Designation of product, preparation and manufacturer

**Trade name:** Bio-Flex<sup>®</sup> F 9533  
**Use of product:** Biodegradable compound suitable for injection moulding applications. The biobased carbon content (BCC) is > 85 % (calculated).  
**Manufacturer:** FKUR Kunststoff GmbH  
Siemensring 79  
D - 47 877 Willich  
Phone: + 49 2154 / 92 51-0  
Fax: + 49 2154 / 92 51-51  
Emergency phone number: +49 2154 / 9251-0

### 2. Hazard identification

**Classification:** No need for classification according to GHS criteria for this product (according to Regulation (EC) No. 1272/2008 [CPL]).  
**Label elements:** According to Regulation (EC) No. 1272/2008 (CLP) this product does not require a hazard warning label in accordance with GHS criteria.  
**Special advice on hazards:** Danger of burns in contact with hot polymer. Hazardous vapours in case of burning.

### 3. Composition / information on ingredients

**Chemical characteristics:** Biodegradable batch based on PLA, contains copolyester and additives.  
**CAS No:** PLA: 9051-89-2  
**Additional information:** no harmful ingredients

### 4. First-aid measures

**On skin contact:** In case of contact with molten polymer immediately cool the skin with cold water. Medical aid may be required to remove adhering material and for treatment of burns.  
**After inhalation:** After inhalation of decomposition gases or dust remove patient to fresh air. Contact a doctor in case of discomfort.  
**On ingestion:** No effects known. Rinse mouth with water and drink more water. Contact a doctor in case of discomfort.  
**On eyes contact:** Rinse open eyes thoroughly with water.

### 5. Fire-fighting measures

**Suitable fire extinguishing media:** Water, dry chemical extinguisher, foam, carbon dioxide.  
**Special exposure hazards:** During incomplete combustion release of carbon monoxide, tetrahydrofurane, acetic acid and decomposition products possible.  
**Special protective equipment:** Self-contained breathing apparatus.  
**Remark:** Accumulations of dust can be inflammable.

### 6. Accidental release measures

**Personal precautions:** Use suitable protective clothing. Avoid eye contact and inhalation of dusts. Keep ignition sources away.  
**Methods for cleaning up:** Sweep up material and place in a container, risk of slipping. Avoid ingress of material into drainage systems.

### 7. Handling and storage

**Handling:** Avoid contact with molten polymer. Avoid generation of dust and electrostatic charge.  
**Storage:** Protect against moisture and UV radiation. Store cool and keep packaging closed when not in use. Avoid sources of ignition.

### 8. Exposure controls / personal protection

**Technical safety measures:** With suitable ventilation the threshold limits assumably will not be reached. Avoid electrostatic charge by use of grounding cables.  
**Personal safety equipment:** Use adequate safety equipment, e.g. protective clothing, eye protection glasses, heat protection gloves. In case of dust formation wear mask with particle filter.  
**Work hygiene:** No eating or drinking during working. Avoid contact of hot material with the skin. Avoid breathing dust and vapours.

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### 9. Physical and chemical properties

Form: Granules  
Colour: natural  
Odour: almost odourless  
Melting range: > 155 °C  
Oxidising properties: not self igniting / flammable  
Explosions limits: not applicable  
Density: 1.45 g/cm<sup>3</sup>  
Solubility in water: insoluble

### 10. Stability and reactivity

Stability: The product is stable at recommended storage conditions.  
Conditions to be avoided: Avoid exposure to extreme heat and all sources of ignition. Thermal decomposition > 240 °C.  
Substances to be avoided: Strong oxidizing agents.  
Hazardous decomposition products: Carbon monoxide, carbon dioxide, aldehydes, acetic acid, tetrahydrofuran, low molecular weight oligomers.

### 11. Toxicological information

Local irritation: Dust can cause irritation of eyes, respiratory organs and skin. After ingestion stomach pain or nausea are possible.  
Other remarks: Based on our state of knowledge and experience no injurious health effects are expected if product is properly handled for the designated use.

### 12. Ecological information

Ecotoxicological effects: No negative ecological effects known at the present state of knowledge, test results are not available. Due to insolubility in water most probably not hazardous to aquatic organisms.  
Biological degradation: Product is biodegradable.  
Bioaccumulation: Due to its consistency and insolubility in water biological accumulation is not expected.

### 13. Disposal considerations

Product: Generation of waste should be minimised, check possibility for recycling. Waste product can be incinerated or dumped together with domestic waste in compliance with local authority requirements.  
Uncleaned packaging: Packaging material has to be emptied completely and disposed in accordance with the regulations. Packaging can be recycled if not contaminated.

### 14. Transport information

Transport regulations: Not classified as hazardous under transport regulations ADR, ADNR, RID, ICAO/IATA, IMDG/GGVSee.

### 15. Regulatory information

EU regulations: This product does not require a hazard warning label in accordance with EC Directives.  
Water exposure class (Germany): 'nwg', no risk of water pollution (classification acc. Att. 1 of VwVwS)

### 16. Other information

This data is based on the current state of our information and experience. This safety data sheet describes our product in terms of safety requirements. Preceding data is not applicable as a warranty of product properties. It is the responsibility of the recipient to observe the existing legal regulations for the use of this product.