

Safety Data Sheet

according to EU Directive 1907/2006

Product name: **Bio-Flex® F 1110** (prev. Bio-Flex® 221F)

Date of issue : 01.07.2008

Version: 2.0

1. Identification of the substance/preparation and of the company

- 1.1 Trade name: Bio-Flex® F 1110 (prev. Bio-Flex® 221F)
- 1.2 Use of the product: Biodegradable resin for manufacture of films
- 1.3 Supplier: FKuR Kunststoff GmbH
Siemensring 79
D - 47 877 Willich
Phone: +49(0) 2154-9251 Fax: + 49(0) 2154-925151
Emergency phone number: +49 2154-9251-0

2. Hazards identification

- 2.1 Classification: Not dangerous according to Directive 67/548/EEC
- 2.2 Special advice on hazards: Danger of burns in contact with hot polymer.
Hazardous vapours in case of burning.

3. Composition / information on ingredients

- 3.1 Chemical characteristics: Biodegradable polymer-blend based on polylactic acid (PLA), contains a copolyester and additives.
Compostable acc. DIN EN 13432
- 3.2 CAS no: PLA: 9051-89-2
- 3.3 Additional information: no harmful ingredients

4. First-aid measures

- 4.1 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.
- 4.2 After inhalation: After inhalation of decomposition gases or dust remove patient to fresh air. Contact a doctor in case of discomfort.
- 4.3 On ingestion: No effects known. Rinse mouth with water and drink more water. Contact a doctor in case of discomfort.
- 4.4 On eyes contact: Rinse open eyes thoroughly with water

5. Fire-fighting measures

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

Safety Data Sheet

according to EU Directive 1907/2006

Product name: **Bio-Flex[®] F 1110** (prev. Bio-Flex[®] 221F)

Date of issue : 01.07.2008

Version: 2.0

6. Accidental release measures

- 6.1 Personal precautions: Use suitable protective clothing. Avoid eye contact and inhalation of dusts. Keep ignition sources away.
- 6.2 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

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

8. Exposure controls/ personal protection

- 8.1 Technical safety measures: With suitable ventilation the threshold limits assumably will not be reached. Avoid electrostatic charge by use of grounding cables.
- 8.2 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.
- 8.3 Work hygiene: No eating or drinking during working. Avoid contact of hot material with the skin. Avoid breathing dust and vapours.

9. Physical and chemical properties

- 9.1 Form: Granules
- 9.2 Colour: beige
- 9.3 Odour: almost odourless
- 9.4 Melting range: 145 - 160° C
- 9.5 Oxidising properties: not self igniting / flammable
- 9.6 Explosions limits: not applicable
- 9.7 Density: 1,25 - 1,30 g/cm³
- 9.8 Solubility in water: insoluble

10. Stability and reactivity

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

Safety Data Sheet

according to EU Directive 1907/2006

Product name: *Bio-Flex*[®] **F 1110** (prev. *Bio-Flex*[®] 221F)

Date of issue : 01.07.2008

Version: 2.0

11. Toxicological information

- 11.1 Local irritation: Dust can cause irritation of eyes, respiratory organs and skin. After ingestion stomach pain or nausea are possible.
- 11.2 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

- 12.1 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.
- 12.2 Biological degradation: Product is biodegradable.
- 12.3 Bioaccumulation: Due to its consistency and insolubility in water biological accumulation is not expected.

13. Disposal considerations

- 13.1 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.
- 13.2 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

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

15. Regulatory information

- 15.1 EU regulations: This product does not require a hazard warning label in accordance with EC Directives.
- 15.2 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.