



versalis

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Technical Data Sheet

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GREENFLEX®

EVA

FD 23

Ethylene vinyl acetate copolymer

Greenflex FD 23 is an ethylene vinyl acetate copolymer (EVA) suitable for blown film extrusion. Greenflex FD 23 represents the additized version with slip and antiblocking of Greenflex FD 20.

Films produced from Greenflex FD 23 exhibit good optical properties, high impact resistance, tensile strength, elongation at break and low creep.

Main Application

Greenflex FD 23 is recommended for thermo-shrinkable films and multilayer stretch films for food packaging, included deep-frozen food packaging.

Main Properties

Resin Properties

| | Value | Unit | Test Method |
|---------------------------------|--------------|-------------------|--------------------|
| Melt Flow Rate (190 °C/2.16 kg) | 0.5 | g/10min | ISO 1133 |
| Vinyl acetate content | 5 | % | Internal method |
| Density | 0.924 | g/cm ³ | ISO 1183 |
| Melting Point | 104 | °C | Internal method |
| Brittleness temperature | <- 80 | °C | ASTM D 746 |
| Vicat softening point (1 kg) | 85 | °C | ISO 306/A |

Film Properties *

| | Value | Unit | Test Method |
|--|--------------|-------------|--------------------|
| Tensile stress at yield MD | 8 | MPa | ISO 527-3 |
| Tensile stress at yield TD | 8 | MPa | ISO 527-3 |
| Tensile stress at break MD | 25 | MPa | ISO 527-3 |
| Tensile stress at break TD | 25 | MPa | ISO 527-3 |
| Elongation at break MD | 450 | % | ISO 527-3 |
| Elongation at break TD | 600 | % | ISO 527-3 |
| 1% Secant modulus MD | 120 | MPa | ISO 527-3 |
| 1% Secant modulus TD | 125 | MPa | ISO 527-3 |
| Elmendorf tear resistance MD | 26 | N/mm | ISO 6383-2 |
| Elmendorf tear resistance TD | 40 | N/mm | ISO 6383-2 |
| Impact resistance F50 (Dart Drop Test) | 420 | g | ISO 7765-1/A |
| Dynamic coefficient of friction (COF) | > 0.2 | - | ISO 8295 |
| Haze | 8 | % | ISO 14782 |
| Gloss, 45° | 72 | % | ASTM D 2457 |
| Recommended film thickness | 50 ÷ 200 | micron | - |

Film Properties **

| | Value | Test Method |
|---------|--------------|--------------------|
| ShoreA: | 95 | ISO 868 A |
| ShoreD: | 44 | ISO 868 A |

(*) Film properties are typical of a blown film extruded at 200 °C. Actual properties may vary depending upon operating conditions and additive package.

** values are referred to injection moulded specimens. Actual properties are typical and may vary depending upon operating conditions.

Processing notes

Greenflex FD 23 can be processed by conventional blown film extrusion equipments. A stock temperature from 170°C to 200°C is recommended. Depending on extrusion conditions, the suggested film thickness is 50÷200 µm.

Storage and Handling

Greenflex FD 23 is supplied in pellet form. This material may readily be conveyed and bulk fed through equipment designed for conventional pelletised polyethylene resin, provided the equipment is designed to prevent accumulation of the fines and dust particles that are contained in all polyethylene resins. These fines and dust particles can, under certain conditions, pose an explosion hazard. We recommend that the conveying system used be equipped with filters of adequate size, operated and maintained in such a manner to ensure that no leaks develop and earthed adequately. We further recommend that good housekeeping should be practised throughout your facility.

The product should be stored in dry conditions at temperatures below 50°C and protected from sunlight.

Improper storage can initiate degradation which results in odour generation, colour changes and can have negative effects on the physical properties of the product.

Before using this product it is recommended to read and understand the relevant Safety Data Sheet.

Availability

Contact the versalis sales office nearest to you regarding availability and your specific application requirements.

Food Contact Status

Greenflex FD 23 complies with the rules and regulations of the European Union, as well as other countries, regarding the use of plastic materials in food contact applications.

Certificates of compliance are available upon request.

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IMPORTANT: please consult the relevant safety data sheet for more detailed information. The information and data presented herein are to the best of our knowledge true and accurate but no warranty or guarantee, expressed or implied, is made nor is any liability accepted with respect to the use of such information and data.

versalis is available to provide the guaranteed values for each product on demand.