# Greenflex® FF 45 F

### Ethylene Vinyl Acetate Copolymer

Versalis S.p.A.

#### Message:

Greenflex FF 45 F is an ethylene vinyl acetate copolymer (EVA) suitable for blown film extrusion. Films produced with Greenflex FF 45 F show high toughness. Main Application

Greenflex FF 45 F is recommended for the production of greenhouse film, stretch hood packaging and sanitary applications.

| General Information   |                                     |          |                 |
|---|-------------------------------------|----------|-----------------|
| Features  | Copolymer                           |          |                 |
|   | Food Contact Acceptable             |          |                 |
|   | Good Toughness                      |          |                 |
|   |                                     |          |                 |
| Uses  | Film                                |          |                 |
|   | Packaging                           |          |                 |
|   | Sanitary Products                   |          |                 |
|   | Stretch Wrap                        |          |                 |
|   |                                     |          |                 |
| Agency Ratings  | EU Food Contact, Unspecified Rating |          |                 |
| Forms   | Pellets                             |          |                 |
| Processing Method   | Blown Film                          |          |                 |
| Physical  | Nominal Value                       | Unit     | Test Method     |
| Density   | 0.935                               | g/cm³    | ISO 1183        |
| Melt Mass-Flow Rate (MFR) (190°C/2.16                         |                                     |          |                 |
| kg)   | 0.70                                | g/10 min | ISO 1133        |
| Vinyl Acetate Content   | 14.0                                | wt%      | Internal Method |
| Hardness  | Nominal Value                       | Unit     | Test Method     |
| Shore Hardness  |                                     |          | ISO 868         |
| Shore A, Injection Molded                                     | 92                                  |          |                 |
| Shore D, Injection Molded                                     | 39                                  |          |                 |
| Mechanical  | Nominal Value                       | Unit     | Test Method     |
| Coefficient of Friction (vs. Itself - Dynamic,<br>Blown Film) | > 0.50                              |          | ISO 8295        |
| Films   | Nominal Value                       | Unit     | Test Method     |
| Film Thickness - Recommended / Available                      | 50 to 200 µm                        |          |                 |
| Tensile Modulus   |                                     |          | ISO 527-3       |
| 1% Secant, MD : Blown Film                                    | 65.0                                | MPa      |                 |
| 1% Secant, TD : Blown Film                                    | 70.0                                | MPa      |                 |
| Tensile Stress  |                                     |          | ISO 527-3       |
| MD : Yield, Blown Film  | 6.00                                | MPa      |                 |
| TD : Yield, Blown Film  | 5.00                                | MPa      |                 |
|   |                                     |          |                 |

| MD : Break, Blown Film                     | 31.0          | MPa  |                 |
|--|---------------|------|-----------------|
| TD : Break, Blown Film                     | 29.0          | MPa  |                 |
| Tensile Elongation                         |               |      | ISO 527-3       |
| MD : Break, Blown Film                     | 450           | %    |                 |
| TD : Break, Blown Film                     | 700           | %    |                 |
| Dart Drop Impact <sup>1</sup> (Blown Film) | 700           | g    | ISO 7765-1      |
| Elmendorf Tear Strength <sup>2</sup>       |               |      | ISO 6383-2      |
| MD   | 24.0          | kN/m |                 |
| TD   | 40.0          | kN/m |                 |
| Thermal                                    | Nominal Value | Unit | Test Method     |
| Brittleness Temperature                    | < -80.0       | °C   | ASTM D746       |
| Vicat Softening Temperature                | 73.0          | °C   | ISO 306/A       |
| Melting Temperature                        | 93.0          | °C   | Internal Method |
| Optical                                    | Nominal Value | Unit | Test Method     |
| Gloss (45°, Blown Film)                    | 72            |      | ASTM D2457      |
| Haze (Blown Film)                          | 8.0           | %    | ISO 14782       |
| Extrusion                                  | Nominal Value | Unit |                 |
| Melt Temperature                           | 160 to 190    | °C   |                 |
| NOTE                                       |               |      |                 |
| 1.   | F50           |      |                 |
| 2.   | Blown Film    |      |                 |
|  |               |      |                 |

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