

## Technical Data Sheet

### SIPOLPRENE® 46185

#### DESCRIPTION

SIPOLPRENE® 46185 is an ether ester thermoplastic elastomer (TPC-ET), developed and manufactured by Sipol, with a nominal hardness of Shore D 45, a low modulus, and a rheological behaviour, which makes it suitable for injection molding and extrusion processing.

SIPOLPRENE® 46185 comes in a natural colour with a standard stabilisation package, fully in compliance with American FDA and European EU 10/2011 Food Contact Regulations. Black colour and/or UV stabilised and/or heat stabilised are all available in dry blend version on request.

#### THERMAL PROPERTIES

| PROPERTY                     | TEST METHOD | M.U. | TYPICAL VALUE |
|------------------------------|-------------|------|---------------|
| Melting temperature          | ISO 11357-3 | °C   | 186           |
| Crystallization temperature  | ISO 11357-3 | °C   | 131           |
| Glass transition temperature | ISO 11357-2 | °C   | -38           |
| Vicat A /50                  | ISO 306     | °C   | 149           |

#### RHEOLOGICAL PROPERTIES

| PROPERTY            | TEST METHOD | M.U.                   | VALUE |
|---------------------|-------------|------------------------|-------|
| MFI 230 °C, 2.16 Kg | ISO 1133    | g/10 min               | 34    |
| MVR 230 °C, 2.16 Kg | ISO 1133    | cm <sup>3</sup> /10min | 30    |

#### MECHANICAL PROPERTIES

| PROPERTY                               | TEST METHOD  | M.U.            | TYPICAL VALUE |
|----------------------------------------|--------------|-----------------|---------------|
| Shore D hardness, instantaneous / 15 s | ISO 868      | Shore D         | 45/42         |
| Stress at break                        | ISO 527      | MPa             | 33            |
| Elongation at break                    | ISO 527      | %               | 660           |
| Flexural modulus                       | ISO 178      | MPa             | 85            |
| Izod impact resistance/notched (23°C)  | ISO 180      | J/m             | No break      |
| Izod impact resistance/notched (-40°C) | ISO 180      | J/m             | No break      |
| Abrasion resistance (Vertical load 5N) | ISO 4649     | mm <sup>3</sup> | 24            |
| Compression set (23°C)                 | ISO 815:1991 | %               | 34            |
| Compression set (70°C)                 | ISO 815:1991 | %               | 69            |

#### OTHER PROPERTIES

| PROPERTY                                 | TEST METHOD | M.U.              | TYPICAL VALUE |
|------------------------------------------|-------------|-------------------|---------------|
| Density                                  | ISO 1183    | g/cm <sup>3</sup> | 1,15          |
| Water absorption (23°C x 24 h immersion) | MI 08       | %                 | 0.5           |

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#### PROCESSING CONDITIONS

Suggested temperature profile for injection molding

| MELTING TEMPERATURE | MOLD TEMPERATURE | NOZZLE | FRONT ZONE 3 | CENTER ZONE 2 | REAR ZONE 1 |
|---------------------|------------------|--------|--------------|---------------|-------------|
| °C                  | °C               | °C     | °C           | °C            | °C          |
| 186                 | 20 - 30          | 210    | 200          | 190           | 165-180     |

Suggested temperature profile for extrusion

| MELTING TEMPERATURE | MFI                  | FEEDING ZONE | COMPRESSION ZONE | METERING ZONE | HEAD/DIE  |
|---------------------|----------------------|--------------|------------------|---------------|-----------|
| °C                  | g/10 min.            | °C           | °C               | °C            | °C        |
| 186                 | 34 (230 °C, 2.16 Kg) | 175 - 190    | 185 - 195        | 190 - 205     | 190 - 205 |

#### DRYING CONDITIONS

Drying recommended = Yes  
Drying temperature = 90 °C  
Drying time, dehumidifier dryer = 2-3 h  
Processing moisture content = 0,15%

#### PACKAGING

25 kg bags equipped with an aluminum film barrier against moisture action.  
500 kg cardboard octabins equipped with an inner PE liner.  
500 Kg and 1000 Kg big bags.

#### STORAGE

Product is stable for 12 months when stored unopened in its original packaging, kept in a cool and dry place and protected from light. When stocked around 5 – 10°C or below, it is recommended to keep it at 15 – 20°C for at least for 24 hours before using it.