

Technical Data Sheet

SIPOLPRENE® 54205 W

DESCRIPTION

SIPOLPRENE® 54205 W is an ether ester thermoplastic elastomer (TPC-ET), developed and manufactured by Sipol, with a nominal hardness of Shore D 54, a very low modulus, and a rheological behaviour, which makes it suitable for injection molding and extrusion processing. SIPOLPRENE® 54205 W comes in a dry blend UV stabilised version.

THERMAL PROPERTIES

| PROPERTY | TEST METHOD | M.U. | TYPICAL VALUE |
|------------------------------|-------------|------|---------------|
| Melting temperature | ISO 11357-3 | °C | 204 |
| Crystallization temperature | ISO 11357-3 | °C | 163 |
| Glass transition temperature | ISO 11357-2 | °C | -14 |
| Vicat A /50 | ISO 306 | °C | 182 |

RHEOLOGICAL PROPERTIES

| PROPERTY | TEST METHOD | M.U. | VALUE |
|---------------------|-------------|----------|-------|
| MFI 230 °C, 2.16 Kg | ISO 1133 | g/10 min | 20 |
| MVR 230 °C, 2.16 Kg | ISO 1133 | g/10 min | 17 |

MECHANICAL PROPERTIES

| PROPERTY | TEST METHOD | M.U. | TYPICAL VALUE |
|--|--------------|-----------------|---------------|
| Shore D hardness, instantaneous / 15 s | ISO 868 | Shore D | 54/51 |
| Stress at break | ISO 527 | MPa | 43 |
| Elongation at break | ISO 527 | % | 500 |
| Flexural modulus | ISO 178 | MPa | 200 |
| 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 ³ | 18 |
| Compression set (23°C) | ISO 815:1991 | % | 22 |
| Compression set (70°C) | ISO 815:1991 | % | 60 |

OTHER PROPERTIES

| PROPERTY | TEST METHOD | M.U. | TYPICAL VALUE |
|--|-------------|-------------------|---------------|
| Density | ISO 1183 | g/cm ³ | 1,21 |
| Water absorption (23°C x 24 h immersion) | MI 08 | % | 0.30 |

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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 |
| 204 | 30 - 40 | 230 | 220 | 210 | 185-200 |

Suggested temperature profile for extrusion

| MELTING TEMPERATURE | MFI | FEEDING ZONE | COMPRESSION ZONE | METERING ZONE | HEAD/DIE |
|---------------------|---------------------|--------------|------------------|---------------|-----------|
| °C | g/10 min. | °C | °C | °C | °C |
| 204 | 20 (230°C, 2.16 Kg) | 195 - 210 | 205 - 215 | 210 - 225 | 210 - 225 |

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.