

Technical Data Sheet

SIPOLPRENE® 45211 B

DESCRIPTION

SIPOLPRENE® 45211 B (black color version in dry blend) is an ether ester thermoplastic elastomer (TPC-ET), developed and manufactured by Sipol, with a nominal hardness of Shore D 45, a very low modulus, and a rheological behaviour, which makes it suitable for injection molding and extrusion processing.

THERMAL PROPERTIES

PROPERTY	TEST METHOD	M.U.	TYPICAL VALUE
Melting temperature	ISO 11357-3	°C	209
Crystallization temperature	ISO 11357-3	°C	169
Glass transition temperature	ISO 11357-2	°C	-7
Vicat A /50	ISO 306	°C	186

RHEOLOGICAL PROPERTIES

PROPERTY	TEST METHOD	M.U.	VALUE
MFI 230 °C, 2.16 Kg	ISO 1133	g/10 min	16
MVR 230 °C, 2.16 Kg	ISO 1133	g/10 min	14

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	23
Elongation at break	ISO 527	%	390
Flexural modulus	ISO 178	MPa	75
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	22
Compression set (23°C)	ISO 815:1991	%	28
Compression set (70°C)	ISO 815:1991	%	64

OTHER PROPERTIES

PROPERTY	TEST METHOD	M.U.	TYPICAL VALUE
Density	ISO 1183	g/cm ³	1,17
Water absorption (23°C x 24 h immersion)	MI 08	%	3,5

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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
209	20 - 30	235	225	215	150-165

Suggested temperature profile for extrusion

MELTING TEMPERATURE	MFI	FEEDING ZONE	COMPRESSION ZONE	METERING ZONE	HEAD/DIE
°C	g/10 min.	°C	°C	°C	°C
209	16 (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 = 3-4 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.