

## Technical Data Sheet

### SIPOLPRENE® 54205

#### DESCRIPTION

SIPOLPRENE® 54205 is an ether ester thermoplastic elastomer (TPC-ET), developed and manufactured by Sipol, with a nominal hardness of Shore D 54, a medium modulus, and a rheological behaviour, which makes it suitable for injection moulding and extrusion processing.

SIPOLPRENE® 54205 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	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 <sup>3</sup>	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 <sup>3</sup>	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.