Ticona
Performance Driven Solutions™

RITEFLEX® 677 | TPC | Unfilled

Description

Riteflex 677 is a thermoplastic polyester elastomer with nominal hardness of 77 shore D and high modulus.

Physical properties	Value	Unit	Test Standard
Density	**1270**	kg/m³	ISO 1183
Melt flow rate (MFR)	**15**	g/10 min	ISO 1133
MFR test temperature	**240**	°C	ISO 1133
MFR test load	**2.16**	kg	ISO 1133
Mold shrinkage - parallel	**1.8-2.2**	%	ISO 294-4
Mold shrinkage - normal	**1.7-2.2**	%	ISO 294-4

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**750**	MPa	ISO 527-2/1A
Tensile stress at yield (50mm/min)	**33**	MPa	ISO 527-2/1A
Tensile strain at yield (50mm/min)	**15**	%	ISO 527-2/1A
Nominal strain at break (50mm/min)	**>50**	%	ISO 527-2/1A
Tensile stress at 50% strain (50mm/min)	**26**	MPa	ISO 527-2/1A
Tensile stress at break (50mm/min)	**42**	MPa	ISO 527-2/1A
Tensile strain at break (50mm/min)	**350**	%	ISO 527-2/1A
Flexural modulus (23°C)	**650**	MPa	ISO 178
Flexural modulus (-40°C)	**2500**	MPa	ISO 178
Flexural strength (23°C)	**30**	MPa	ISO 178
Flexural stress @ 3.5% strain	**23**	MPa	ISO 178
Charpy impact strength @ 23°C	**71.0**	kJ/m²	ISO 179/1eU
Charpy impact strength @ -30°C	**4.5**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**9.4**	kJ/m²	ISO 179/1eA
Unnotched impact str (Izod) @ 23°C	**N**	kJ/m²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	**8.5**	kJ/m²	ISO 180/1A
Notched impact strength (Izod) @-40°C	**4.7**	kJ/m²	ISO 180/1A
Shore hardness D scale 15 sec value	**75**	-	ISO 868
Bayshore resilience	**40**	%	Internal

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	**218**	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	**51**	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	**109**	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	**1.4**	E-4/°C	ISO 11359-2
Flammability at thickness h	**HB**	class	UL94
thickness tested (h)	**1.5**	mm	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 1 MHz	**3.3**	-	IEC 60250
Dissipation factor - 1 MHz	**400**	E-4	IEC 60250
Volume resistivity	**4E14**	Ohm*m	IEC 60093
Surface resistivity	**2E17**	Ohm	IEC 60093
Electric strength	**16**	kV/mm	IEC 60243-1
Comparative tracking index CTI	**>600**	-	IEC 60112

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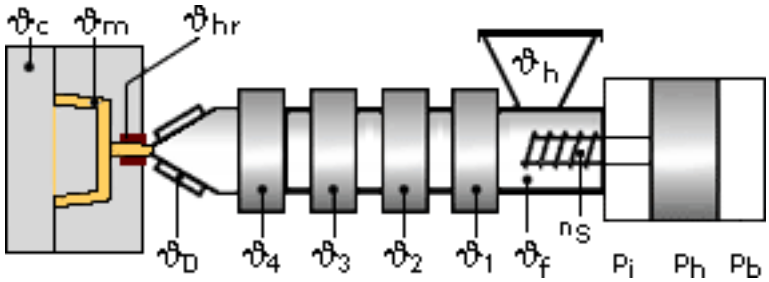
Mechanical-TPE properties	Value	Unit	Test Standard
Stress at 5% elongation	**32**	MPa	ISO 527-1/-2
Stress at 10% elongation	**36**	MPa	ISO 527-1/-2
Stress at 50% elongation	**26**	MPa	ISO 727-1/2
Tear strength (Die C, parallel)	**250**	kN/m	ISO 34-1

Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.05%

To avoid hydrolytic degradation during processing, Riteflex resins have to be dried to a moisture level equal to or less than 0.05%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C) at 225°F (107°C) for 4 hours.

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.

Drying time: 4 h

Drying temperature: 100 - 110 °C

Temperature:

	ϑManifold	ϑMold	ϑMelt	ϑNozzle	ϑZone4	ϑZone3	ϑZone2	ϑZone1	ϑFeed	ϑHopper
min (°C)	235	20	235	240	240	235	235	230	230	20
max (°C)	260	55	260	260	260	250	250	240	240	50

Speed:

Injection speed: medium-fast

Injection Molding

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Rear Temperature     450-470(230-240) deg F (deg C)
Center Temperature   460-480(235-250) deg F (deg C)
Front Temperature    470-490(240-255) deg F (deg C)
Nozzle Temperature   480-490(250-255) deg F (deg C)
Melt Temperature     460-490(235-255) deg F (deg C)
Mold Temperature     100-200(40-95)   deg F (deg C)
Back Pressure        0-50             psi
Screw Speed          Medium
Injection Speed      Fast
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Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used.

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