

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/m ³	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/m ²	ISO 179/1eU
Charpy impact strength @ -30°C	4.5	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	9.4	kJ/m ²	ISO 179/1eA
Unnotched impact str (Izod) @ 23°C	N	kJ/m ²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	8.5	kJ/m ²	ISO 180/1A
Notched impact strength (Izod) @ -40°C	4.7	kJ/m ²	ISO 180/1A
Shore hardness D scale 15 sec value	75	-	ISO 868
Bayshore resilience	40	%	Internal

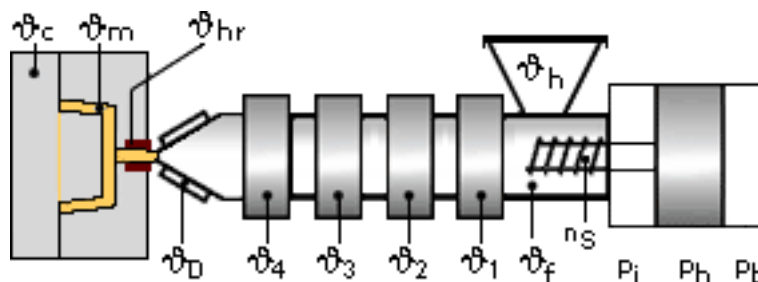
Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	218	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	51	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	109	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	1.4	E-4/°C	ISO 11359-2
Flammability at thickness h	HB	class	UL94
thickness tested (h)	1.5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

	ϕManifold	ϕMold	ϕMelt	ϕNozzle	ϕZone4	ϕZone3	ϕZone2	ϕZone1	ϕFeed	ϕHopper
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

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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Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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