

RITFLEX® 663 - TPC

Description

Riteflex 663 is a nominal 63 Shore D thermoplastic polyester elastomer with medium modulus.

Physical properties	Value	Unit	Test Standard
Density	1240	kg/m ³	ISO 1183
Melt flow rate, MFR	19	g/10min	ISO 1133
MFR temperature	240	°C	ISO 1133
MFR load	2.16	kg	ISO 1133
Molding shrinkage, parallel	1.7 - 2.0	%	ISO 294-4, 2577
Molding shrinkage, normal	1.7 - 2.1	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.5	%	ISO 62
Humidity absorption, 23°C/50%RH	0.2	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	350	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	21	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	24	%	ISO 527-2/1A
Tensile nominal strain at break, 50mm/min	>50	%	ISO 527-2/1A
Tensile stress at 50% strain, 50mm/min	21	MPa	ISO 527-2/1A
Tensile stress at break, 50mm/min	38	MPa	ISO 527-2/1A
Tensile strain at break, 50mm/min	>300	%	ISO 527-2/1A
Flexural modulus, 23°C	300	MPa	ISO 178
Flexural modulus, -40°C	1900	MPa	ISO 178
Flexural strength, 23°C	15	MPa	ISO 178
Charpy impact strength, 23°C	NB	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	NB	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	105 ^[P]	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	22	kJ/m ²	ISO 179/1eA
Izod impact notched, 23°C	74	kJ/m ²	ISO 180/1A
Izod impact notched, -40°C	7	kJ/m ²	ISO 180/1A
Bayshore resilience	40	%	ASTM D 2632
Ross flex	>1000000	cycles	ASTM D 1052

P: Partial Break

Mechanical properties (TPE)	Value	Unit	Test Standard
Tensile stress at 5% strain, 1BA	13	MPa	ISO 527-1, -2
Tensile stress at 10% strain, 1BA	18	MPa	ISO 527-1, -2
Tensile stress at 50% strain, 1BA	19	MPa	ISO 527-1, -2
Tensile stress at break, 1BA	38	MPa	ISO 527-1, -2
Shore D hardness, 15s	63	-	ISO 868
Tear strength, Die C/parallel	160	kN/m	ISO 34-1

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	212	°C	ISO 11357-1/-3
DTUL at 0.45 MPa	114	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 10N	194	°C	ISO 306
Coeff. of linear therm expansion, parallel	1.8	E-4/°C	ISO 11359-2
Flammability at thickness h	HB	class	UL 94
thickness tested (h)	1.50	mm	UL 94

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 1MHz	4	-	IEC 60250
Dissipation factor, 1MHz	400	E-4	IEC 60250
Volume resistivity	2E13	Ohm*m	IEC 60093
Surface resistivity	1E16	Ohm	IEC 60093
Electric strength	14	kV/mm	IEC 60243-1

RITEFLEX® 663 - TPC

Comparative tracking index	PLC 0	-	IEC 60112
----------------------------	-------	---	-----------

Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	0.05	%	-
Drying time	4	h	-
Drying temperature	100 - 110	°C	-
Temperature	Value	Unit	Test Standard
Hopper temperature	20 - 50	°C	-
Feeding zone temperature	200 - 215	°C	-
Zone1 temperature	200 - 215	°C	-
Zone2 temperature	215 - 230	°C	-
Zone3 temperature	215 - 230	°C	-
Zone4 temperature	215 - 235	°C	-
Nozzle temperature	215 - 235	°C	-
Melt temperature	215 - 235	°C	-
Mold temperature	20 - 55	°C	-
Hot runner temperature	215 - 235	°C	-
Speed	Value	Unit	Test Standard
Injection speed	medium-fast	-	-

Other text information

Pre-drying

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.

Longer pre-drying times/storage

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

Injection molding

Rear Temperature 390-420(200-215) deg F (deg C)
 Center Temperature 420-450(215-230) deg F (deg C)
 Front Temperature 420-450(215-230) deg F (deg C)
 Nozzle Temperature 420-450(215-230) deg F (deg C)
 Melt Temperature 430-460(220-235) deg F (deg C)
 Mold Temperature 75-125(20-55) deg F (deg C)
 Back Pressure 0-50 psi
 Screw Speed Medium
 Injection Speed Fast

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.

Characteristics

Product Categories

Unfilled

Processing

Injection molding