Celanese
The chemistry inside innovation™

RITEFLEX® 655A - TPC

Description

Riteflex 655A is a thermoplastic polyester elastomer with nominal shore D hardness of 55 and medium modulus.

Physical properties	Value	Unit	Test Standard
Density	1190	kg/m³	ISO 1183
Melt flow rate, MFR	10	g/10min	ISO 1133
MFR temperature	220	°C	ISO 1133
MFR load	2.16	kg	ISO 1133
Molding shrinkage, parallel	1.6 - 1.9	%	ISO 294-4, 2577
Molding shrinkage, normal	1.7 - 2.1	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.6	%	ISO 62
Humidity absorption, 23°C/50%RH	0.2	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	170	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	14	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	26	%	ISO 527-2/1A
Tensile stress at 50% strain, 50mm/min	15	MPa	ISO 527-2/1A
Tensile stress at break, 50mm/min	30	MPa	ISO 527-2/1A
Tensile strain at break, 50mm/min	>500	%	ISO 527-2/1A
Flexural modulus, 23°C	165	MPa	ISO 178
Flexural modulus, -40°C	700	MPa	ISO 178
Flexural modulus, 100°C	86	MPa	ISO 178
Flexural strength, 23°C	10	MPa	ISO 178
Flexural stress at 3.5% strain	7	MPa	ISO 178
Charpy impact strength, 23°C	NB	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	NB	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	150[P]	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	65[P]	kJ/m²	ISO 179/1eA
Izod impact notched, 23°C	NB	kJ/m²	ISO 180/1A
Izod impact notched, -30°C	NB	kJ/m²	ISO 180/1A
Bayshore resilience	48	%	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	8	MPa	ISO 527-1, -2
Tensile stress at 10% strain, 1BA	12	MPa	ISO 527-1, -2
Tensile stress at 50% strain, 1BA	15	MPa	ISO 527-1, -2
Tensile strain at break (TPE)	>300	%	ISO 37
Shore D hardness, 15s	55	-	ISO 868
Tear strength, Die C/parallel	124	kN/m	ISO 34-1

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	200	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	48	°C	ISO 75-1, -2
DTUL at 0.45 MPa	75	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 10N	176	°C	ISO 306
Coeff. of linear therm expansion, parallel	2	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	1.7	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	4.4	-	IEC 60250
Dissipation factor, 1MHz	400	E-4	IEC 60250

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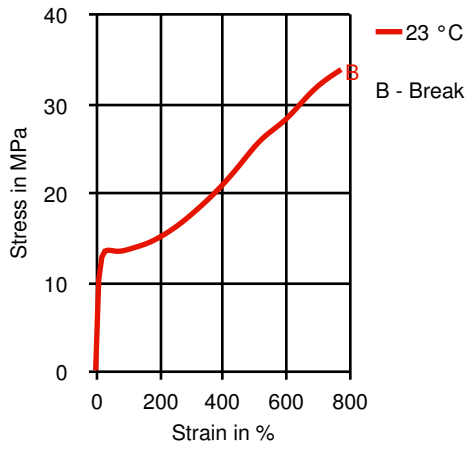
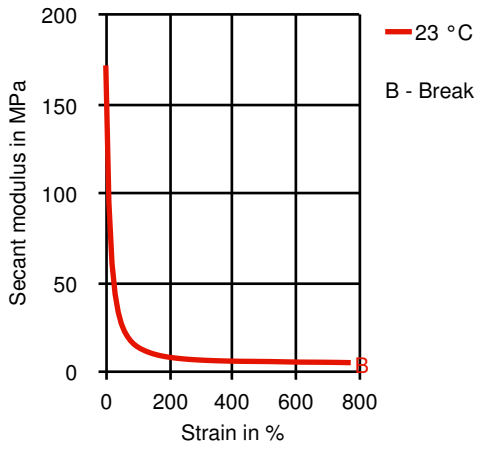
Volume resistivity	**4E10**	Ohm*m	IEC 60093
Surface resistivity	**4E15**	Ohm	IEC 60093
Electric strength	**14**	kV/mm	IEC 60243-1
Comparative tracking index	**PLC 0**	-	IEC 60112

Diagrams

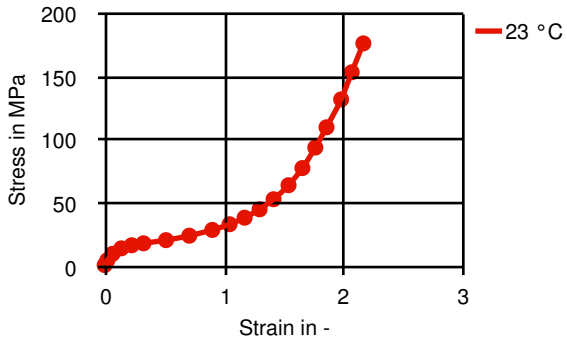
Stress-strain



Secant modulus-strain



True Stress-strain



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	**205 - 230**	°C	-
Zone3 temperature	**205 - 230**	°C	-
Zone4 temperature	**205 - 235**	°C	-
Nozzle temperature	**205 - 235**	°C	-
Melt temperature	**205 - 235**	°C	-
Mold temperature	**20 - 55**	°C	-
Hot runner temperature	**205 - 235**	°C	-
Speed	**Value**	**Unit**	**Test Standard**
Injection speed	**medium-fast**	-	-

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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.

Characteristics

Product Categories	Processing
Unfilled	Injection molding