Celanese
The chemistry inside innovation™

RITEFLEX® 425 - TPC

Description

Riteflex 425 is a nominal 25 Shore D thermoplastic polyester elastomer with low modulus and outstanding low temperature impact, and tear resistance.

Physical properties	Value	Unit	Test Standard
Density	**1060**	kg/m³	ISO 1183
Melt flow rate, MFR	**13**	g/10min	ISO 1133
MFR temperature	**190**	°C	ISO 1133
MFR load	**2.16**	kg	ISO 1133
Molding shrinkage, parallel	**1.2**	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.2**	%	ISO 294-4, 2577
Water absorption, 23°C-sat	**0.8**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile stress at 50% strain, 50mm/min	**3**	MPa	ISO 527-2/1A
Tensile stress at break, 50mm/min	**10**	MPa	ISO 527-2/1A
Tensile strain at break, 50mm/min	**750**	%	ISO 527-2/1A
Flexural modulus, 23°C	**17**	MPa	ISO 178
Flexural modulus, -40°C	**162**	MPa	ISO 178
Flexural modulus, 100°C	**8**	MPa	ISO 178
Flexural strength, 23°C	**1**	MPa	ISO 178
Flexural stress at 3.5% strain	**1**	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	**NB**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**NB**	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
Izod impact notched, -40°C	**NB**	kJ/m²	ISO 180/1A
Izod impact unnotched, 23°C	**NB**	kJ/m²	ISO 180/1U
Izod impact unnotched, -30°C	**NB**	kJ/m²	ISO 180/1U
Bayshore resilience	**65**	%	ASTM D 2632
Ross flex	**>1000000**	cycles	ASTM D 1052

Mechanical properties (TPE)	Value	Unit	Test Standard
Tensile stress at 5% strain, 1BA	**1**	MPa	ISO 527-1, -2
Tensile stress at 10% strain, 1BA	**2**	MPa	ISO 527-1, -2
Tensile stress at 50% strain, 1BA	**3**	MPa	ISO 527-1, -2
Shore A hardness, 15s	**75**	-	ISO 868
Shore D hardness, 15s	**24**	-	ISO 868
Tear strength, Die C/parallel	**61**	kN/m	ISO 34-1
Tear strength	**62**	kN/m	ISO 34-1

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**155**	°C	ISO 11357-1/-3
DTUL at 0.45 MPa	**42**	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 10N	**61**	°C	ISO 306
Coeff. of linear therm expansion, parallel	**2.5**	E-4/°C	ISO 11359-2
Flammability @1.6mm nom. thickn.	**HB**	class	UL 94
thickness tested (1.6)	**1.5**	mm	UL 94

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 1MHz	**5.1**	-	IEC 60250
Volume resistivity	**2E12**	Ohm*m	IEC 60093
Surface resistivity	**2E14**	Ohm	IEC 60093
Electric strength	**24**	kV/mm	IEC 60243-1

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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	**155 - 170**	°C	-
Zone1 temperature	**155 - 170**	°C	-
Zone2 temperature	**170 - 180**	°C	-
Zone3 temperature	**170 - 180**	°C	-
Zone4 temperature	**170 - 180**	°C	-
Nozzle temperature	**170 - 190**	°C	-
Melt temperature	**170 - 190**	°C	-
Mold temperature	**20 - 55**	°C	-
Hot runner temperature	**170 - 190**	°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 215°F (102°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