

Hytrel® 5556

THERMOPLASTIC POLYESTER ELASTOMER

DuPont Performance Polymers

Message:

55 Shore D High Performance Polyester Elastomer

General Information			
UL YellowCard	E83247-251129	E41938-234582	
Additive	UV Stabilizer		
Uses	Film		
	Profiles		
	Sheet		
Agency Ratings	UL Unspecified Rating		
Forms	Pellets		
Processing Method	Casting		
	Coating		
	Extrusion		
	Film Extrusion		
	Injection Molding		
	Profile Extrusion		
	Sheet Extrusion		
	Thermoforming		
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1)		
	Isochronous Stress vs. Strain (ISO 11403-1)		
	Isothermal Stress vs. Strain (ISO 11403-1)		
	Isothermal Stress vs. Strain (TPE) (ISO 11403-1)		
	Secant Modulus vs. Strain (ISO 11403-1)		
	Shear Modulus vs. Temperature (ISO 11403-1)		
	Shear Stress vs. Shear Rate (ISO 11403-1)		
	Specific Volume vs Temperature (ISO 11403-2)		
	Tensile Modulus vs. Temperature, Dynamic (ISO 11403-1)		
Viscosity vs. Shear Rate (ISO 11403-2)			
Part Marking Code (ISO 11469)	>TPC-ET<		
Resin ID (ISO 1043)	TPC-ET		
Physical	Nominal Value	Unit	Test Method
Density	1.19	g/cm³	ISO 1183

Melt Mass-Flow Rate (MFR) (220°C/2.16 kg)	7.8	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (220°C/2.16 kg)	7.00	cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	1.4	%	
Flow	1.4	%	
Water Absorption			
24 hr	0.60	%	ASTM D570
23°C, 24 hr, 2.00 mm	0.60	%	ISO 62
Equilibrium, 23°C, 2.00 mm, 50% RH	0.20	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Shore Hardness			ISO 868
Shore D	55		
Shore D, 15 sec	51		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	180	MPa	ISO 527-2
Tensile Stress			ISO 527-2
Yield	14.0	MPa	
Break	40.0	MPa	
5.0% Strain	6.90	MPa	
10% Strain	11.0	MPa	
50% Strain	14.5	MPa	
100% Strain	16.0	MPa	
Tensile Strain			ISO 527-2
Yield	34	%	
Break	> 300	%	
Nominal Tensile Strain at Break	600	%	ISO 527-2
Tensile Creep Modulus			ISO 899-1
1 hr	170	MPa	
1000 hr	133	MPa	
Flexural Modulus	190	MPa	ISO 178
Abrasion Resistance	120	mm ³	ISO 4649
Specific Heat Capacity of Melt	2110	J/kg/°C	
Thermal Conductivity of Melt	0.16	W/m/K	
Effective Thermal Diffusivity	0.0700	cSt	
Emission of Organic Compounds	14.6	µgC/g	VDA 277
Odor	5		VDA 270
Elastomers	Nominal Value	Unit	Test Method
Tear Strength			ISO 34-1
Across Flow	130	kN/m	
Flow	140	kN/m	
Impact	Nominal Value	Unit	Test Method

Charpy Notched Impact Strength			ISO 179/1eA
-40°C, Partial Break	150	kJ/m ²	
-30°C, Partial Break	150	kJ/m ²	
23°C	No Break		
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact Strength			ISO 180/1A
-40°C	No Break		
23°C	No Break		
Tensile Impact Strength (23°C)	300	kJ/m ²	ISO 8256/1
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	70.0	°C	ISO 75-2/B
1.8 MPa, Unannealed	45.0	°C	ISO 75-2/A
Brittleness Temperature	-98.0	°C	ISO 974
Glass Transition Temperature ¹	-20.0	°C	ISO 11357-2
Vicat Softening Temperature			
--	180	°C	ISO 306/A50
--	75.0	°C	ISO 306/B50
Melting Temperature ²	201	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow	1.8E-4	cm/cm/°C	
Flow : -40 to 23°C	1.6E-4	cm/cm/°C	
Transverse	1.8E-4	cm/cm/°C	
Transverse : -40 to 23°C	1.7E-4	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	4.0E+13	ohms · cm	IEC 60093
Electric Strength	19	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	4.80		
1 MHz	4.40		
Dissipation Factor			IEC 60250
100 Hz	9.0E-3		
1 MHz	0.038		
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flammability Classification			IEC 60695-11-10, -20
1.50 mm	HB		
3.00 mm	HB		
Oxygen Index	20	%	ISO 4589-2

Fill Analysis	Nominal Value	Unit	Test Method
Melt Density	1.03	g/cm ³	
NOTE			
1.	10°C/min		
2.	10°C/min		

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