

Hytrel® 4056

THERMOPLASTIC POLYESTER ELASTOMER

DuPont Performance Polymers

Message:

40 Shore D High Performance Polyester Elastomer

General Information			
UL YellowCard	E41938-234577		
Additive	UV Stabilizer		
Uses	Film		
	Profiles		
	Sheet		
Agency Ratings	UL Unspecified Rating		
Forms	Pellets		
Processing Method	Calendering		
	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)		
	Tensile Modulus vs. Temperature, Dynamic (ISO 11403-1)		
Part Marking Code (ISO 11469)	>TPC-ET<		
	TPC-ET		
	TPC-ET		
Resin ID (ISO 1043)	TPC-ET		
Physical	Nominal Value	Unit	Test Method
Density	1.16	g/cm ³	ISO 1183

Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	5.6	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	5.00	cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	0.40	%	
Flow	0.20	%	
Water Absorption			
24 hr	0.60	%	ASTM D570
23°C, 24 hr, 2.00 mm	0.70	%	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	43		
Shore D, 15 sec	37		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	60.0	MPa	ISO 527-2
Tensile Stress			ISO 527-2
Break	26.0	MPa	
5.0% Strain	2.40	MPa	
10% Strain	4.60	MPa	
50% Strain	8.40	MPa	
Tensile Strain (Break)	> 300	%	ISO 527-2
Nominal Tensile Strain at Break	500	%	ISO 527-2
Tensile Creep Modulus			ISO 899-1
1 hr	54.0	MPa	
1000 hr	40.0	MPa	
Flexural Modulus	64.0	MPa	ISO 178
Abrasion Resistance	200	mm ³	ISO 4649
Effective Thermal Diffusivity	0.0544	cSt	
Elastomers	Nominal Value	Unit	Test Method
Tear Strength			ISO 34-1
Across Flow	96	kN/m	
Flow	100	kN/m	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-40°C	No Break		
-30°C	No Break		
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)	230	kJ/m ²	ISO 8256/1
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-97.0	°C	ISO 974
Glass Transition Temperature ¹	-50.0	°C	ISO 11357-2
Melting Temperature ²	152	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow	1.3E-4	cm/cm/°C	
Transverse	1.6E-4	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	2.0E+14	ohms	IEC 60093
Volume Resistivity	7.0E+12	ohms·cm	IEC 60093
Electric Strength	18	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	5.20		
1 MHz	4.70		
Dissipation Factor			IEC 60250
100 Hz	0.011		
1 MHz	0.053		
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flammability Classification (1.50 mm)	HB		IEC 60695-11-10, -20
Oxygen Index	20	%	ISO 4589-2
Fill Analysis	Nominal Value	Unit	
Melt Density	1.02	g/cm ³	
NOTE			
1.	10°C/min		
2.	10°C/min		

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