

Hytrel® 5553FG NC010

THERMOPLASTIC POLYESTER ELASTOMER

DuPont Performance Polymers

Message:

55 Shore D High Performance Polyester Elastomer Developed for Food Contact Applications

General Information			
Uses	Film		
	Profiles		
	Sheet		
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)		
	Tensile Modulus vs. Temperature, Dynamic (ISO 11403-1)		
Part Marking Code (ISO 11469)	>TPC-ET<		
Resin ID (ISO 1043)	TPC-ET		
Physical	Nominal Value	Unit	Test Method
Density	1.20	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (220°C/2.16 kg)	8.0	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	56		
Shore D, 15 sec	51		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	167	MPa	ISO 527-2
Tensile Stress			ISO 527-2
Yield	14.0	MPa	
Break	40.0	MPa	
5.0% Strain	6.60	MPa	
10% Strain	10.2	MPa	
100% Strain	15.0	MPa	
Tensile Strain			ISO 527-2
Yield	40	%	
Break	> 300	%	
Nominal Tensile Strain at Break	600	%	ISO 527-2
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-40°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		
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
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
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 (1.50 mm)	HB		IEC 60695-11-10, -20
Oxygen Index	20	%	ISO 4589-2
Fill Analysis	Nominal Value	Unit	
Melt Density	1.03	g/cm ³	
Additional Information	Nominal Value	Unit	
Effective Thermal Diffusivity	0.0544	cSt	
NOTE			
1.	10°C/min		
2.	10°C/min		

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