

General Information

Product Description

Hytrel® 5556 is a medium modulus grade with nominal hardness of 55D. It contains non-discoloring stabilizer. It can be processed by many conventional thermoplastic processing techniques like injection molding and extrusion.

General

Material Status	• Commercial: Active		
Additive	• Antioxidant	• Heat Stabilizer	
Features	• Food Contact Acceptable • Good Creep Resistance	• Heat Stabilized • High Energy Absorption	• Medium Hardness • Noise Damping
Uses	• Automotive Applications • Cast Film • Coating Applications • Compounding	• Filaments • Hose • Industrial Applications • Sheet	• Tubing • Wire & Cable Applications
RoHS Compliance	• Contact Manufacturer		
Appearance	• Light Beige		
Processing Method	• Cast Film • Casting • Extrusion	• Extrusion Coating • Filament Extrusion • Injection Molding	• Profile Extrusion • Sheet Extrusion
Multi-Point Data	• Isochronous Stress vs. Strain (ISO 11403-1)	• Isothermal Stress vs. Strain (ISO 11403-1)	• Viscosity vs. Shear Rate (ISO 11403-2)
Part Marking Code (ISO 11469)	• >TPC-ET<		
Resin ID (ISO 1043)	• TPC-ET		

ASTM and ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm ³	ASTM D792
Density	1.19	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (220°C/2.16 kg)	7.5	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (220°C/2.16 kg)	8.1	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (220°C/2.16 kg)	7.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow	1.4	%	ASTM D955
Molding Shrinkage			ISO 294-4
Across Flow: 2.00 mm	1.4	%	
Flow: 2.00 mm	1.4	%	
Water Absorption (23°C, 24 hr)	0.50	%	ASTM D570
Water Absorption (23°C, 24 hr)	0.60	%	ISO 62
Water Absorption (Saturation, 23°C)	0.60	%	ISO 62
Water Absorption (Equilibrium, 23°C, 50% RH)	0.20	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	180	MPa	ISO 527-2
Tensile Strength			ASTM D638
5.0% Strain, 23°C	6.90	MPa	
10% Strain, 23°C	10.3	MPa	
Tensile Stress (Yield, 23°C)	14.0	MPa	ISO 527-2/1BA

HytreI® 5556

DuPont Performance Polymers - Thermoplastic Copolyester Elastomer

Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (Break, 23°C)	40.0	MPa	ASTM D638
Tensile Stress (Break, 23°C)	40.0	MPa	ISO 527-2/1BA
Tensile Stress			ISO 527-2/1BA
10% Strain: 23°C	11.0	MPa	
5% Strain: 23°C	6.90	MPa	
Tensile Strain (Yield, 23°C)	40	%	ISO 527-2/1BA
Tensile Elongation (Break, 23°C)	500	%	ASTM D638
Tensile Strain (Break, 23°C)	480	%	ISO 527-2/1BA
Nominal Tensile Strain at Break (23°C)	600	%	ISO 527-2/1BA
Tensile Creep Modulus (1 hr)	170	MPa	ISO 899-1
Tensile Creep Modulus (1000 hr)	133	MPa	ISO 899-1
Flexural Modulus			ASTM D790
-40°C	760	MPa	
23°C	207	MPa	
100°C	110	MPa	
Flexural Modulus			ISO 178
-40°C	760	MPa	
23°C	190	MPa	
100°C	100	MPa	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-40°C	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			ASTM D256
-40°C	170	J/m	
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
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	55		ASTM D2240
Shore Hardness			ISO 868
Shore D	56		
Shore D, 15 sec	51		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	90.0	°C	
Heat Deflection Temperature (0.45 MPa, Unannealed)	70.0	°C	ISO 75-2/B
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	49.0	°C	
Heat Deflection Temperature (1.8 MPa, Unannealed)	45.0	°C	ISO 75-2/A
Brittleness Temperature	-95.0	°C	ISO 974
Glass Transition Temperature	-20.0	°C	ISO 11357-2
Melting Temperature	203	°C	ASTM D3418

Hytrel® 5556

DuPont Performance Polymers - Thermoplastic Copolyester Elastomer

Thermal	Nominal Value	Unit	Test Method
Melting Temperature ²	201	°C	ISO 11357-3
CLTE - Flow			ASTM E831
-40 to 23°C	0.00016	cm/cm/°C	
23 to 55°C	0.00018	cm/cm/°C	
55 to 120°C	0.00019	cm/cm/°C	
CLTE - Flow			ISO 11359-2
-40 to 23°C	0.00016	cm/cm/°C	
23 to 55°C	0.00018	cm/cm/°C	
55 to 120°C	0.00019	cm/cm/°C	
CLTE - Transverse			ASTM E831
-40 to 23°C	0.00017	cm/cm/°C	
23 to 55°C	0.00018	cm/cm/°C	
55 to 120°C	0.00018	cm/cm/°C	
CLTE - Transverse			ISO 11359-2
-40 to 23°C	0.00017	cm/cm/°C	
23 to 55°C	0.00018	cm/cm/°C	
55 to 120°C	0.00018	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	2.0E+15	ohm	IEC 60093
Volume Resistivity	4.0E+13	ohm-cm	IEC 60093
Dielectric Strength ³ (23°C, 1.91 mm)	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
23°C, 1.91 mm, 100 Hz	4.60		
23°C, 1.91 mm, 1 kHz	4.50		
23°C, 1.91 mm, 1 MHz	4.10		
Relative Permittivity			IEC 60250
23°C, 100 Hz	4.80		
23°C, 1 MHz	4.40		
Dissipation Factor			ASTM D150
23°C, 1.91 mm, 100 Hz	0.0060		
23°C, 1.91 mm, 1 kHz	0.0090		
23°C, 1.91 mm, 1 MHz	0.040		
Dissipation Factor			IEC 60250
23°C, 100 Hz	0.0090		
23°C, 1 MHz	0.038		
Comparative Tracking Index	> 600	V	IEC 60112
Electric Strength (23°C)	19	kV/mm	IEC 60243-1
Flammability	Nominal Value	Unit	Test Method
Flame Rating - UL			UL 94
1.50 mm	HB		
3.00 mm	HB		
Flammability Classification			IEC 60695-11-10, -20
1.50 mm	HB		
3.00 mm	HB		
Oxygen Index	20	%	ISO 4589-2

HytreI® 5556

DuPont Performance Polymers - Thermoplastic Copolyester Elastomer

UL	Nominal Value	Unit	Test Method
RTI Str			UL 746
0.700 mm	50.0	°C	
1.50 mm	75.0	°C	
3.00 mm	80.0	°C	
RTI Imp			UL 746
0.700 mm	50.0	°C	
1.50 mm	85.0	°C	
3.00 mm	85.0	°C	
RTI Elec			UL 746
0.700 mm	85.0	°C	
1.50 mm	85.0	°C	
3.00 mm	85.0	°C	
Comparative Tracking Index (CTI) (3.00 mm)	> 600	V	UL 746

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	100	°C
Drying Time	2.0 to 3.0	hr
Suggested Max Moisture	< 0.080	%
Processing (Melt) Temp	220 to 250	°C
Melt Temperature, Optimum - Injection Molding	230	°C
Mold Temperature	45.0 to 55.0	°C
Mold Temperature, Optimum - Injection Molding	45	°C
Drying Recommended	Yes	
Extrusion	Nominal Value	Unit
Drying Temperature	100	°C
Drying Time	2.0 to 3.0	hr
Suggested Max Moisture	< 0.050	%
Melt Temperature	215 to 235	°C
Extrusion Melt Temperature, Optimum	225	°C

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min

³ Method A (Short-Time)