Hytrel® 6356

TPC Celanese

Product Texts

Common features of Hytrel® thermoplastic polyester elastomer include mechanical and physical properties such as exceptional toughness and resilience, high resistance to creep, impact and flex fatigue, flexibility at low temperatures and good retention of properties at elevated temperatures. In addition, it resists many industrial chemicals, oils and solvents. Special grades include heat stabilised, flame retardant, food contact compliant, blow molding and extrusion grades. Concentrates offered include black pigments, UV protection additives, heat stabilisers, and flame retardants.

Hytrel® thermoplastic polyester elastomer is plasticiser free.

The good melt stability of Hytrel® thermoplastic polyester elastomer normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-24 kJ/g of base polymer) in appropriately equipped installations.

For disposal, local regulations have to be observed.

Hytrel® thermoplastic polyester elastomer typically is used in demanding applications in the automotive, fluid power, electrical/electronic, consumer goods, appliance and power tool, sporting goods, furniture, industrial and off-road transportation/equipment industry.

Hytrel® 6356 is a medium modulus grade with nominal hardness of 63D. It contains non-discoloring stabilizer. It can be processed by many conventional thermoplastic processing techniques like injection molding and extrusion.

Typical applications:

Hose and tubing, mandrels, wire and cable, film, profiles, seals, gears, sprockets, fuel tanks, containers with good permeation resistance to gases and liquids.

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
[C] Melt volume-flow rate, MVR	**8.5**	cm³/10min	ISO 1133
Temperature	**230**	°C	-
Load	**2.16**	kg	-
[C] Molding shrinkage, parallel	**1.5**	%	ISO 294-4, 2577
[C] Molding shrinkage, normal	**1.5**	%	ISO 294-4, 2577
[C] Density of melt	**1060**	kg/m³	-
[C] Thermal conductivity of melt	**0.15**	W/(m K)	-
[C] Spec. heat capacity of melt	**2150**	J/(kg K)	-
[C] Eff. thermal diffusivity	**5.44E-8**	m²/s	-
ASTM Data			
Melt Flow Index, MFI	**8.5**	g/10min	ASTM D 1238
Temperature	**230**	°C	-
Load	**2.16**	kg	-
Mold Shrinkage, MD	**0.015**	mm/mm	ASTM D 955

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
[C] Tensile Modulus	**280**	MPa	ISO 527
[C] Tensile creep modulus, 1h	**248**	MPa	ISO 899-1
[C] Tensile creep modulus, 1000h	**182**	MPa	ISO 899-1
[C] Charpy notched impact strength, +23°C	**120**	kJ/m²	ISO 179/1eA
[C] Charpy notched impact strength, -30°C	**25**	kJ/m²	ISO 179/1eA
[C] Tensile notched impact strength, +23°C	**300**	kJ/m²	ISO 8256/1
[C] Stress at 10% elongation	**15**	MPa	ISO 527
[C] Stress at 100% elongation	**19**	MPa	ISO 527
[C] Stress at break TPE	**43**	MPa	ISO 527
[C] Strain at break TPE	**>300**	%	ISO 527
[C] Abrasion resistance	**110**	mm³	ISO 4649
[C] Shore D hardness	**57**	-	ISO 7619-1
ASTM Data			
Tensile Strength at Break	**41**	MPa	ASTM D 638
Elongation at Break	**420**	%	ASTM D 638
Flexural Modulus	**330**	MPa	ASTM D 790
Shore D Hardness	**63**	-	ASTM D 2240
Izod Impact notched, 1/8 in	**N**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**48**	J/m	ASTM D 256

Temperature	**-40**	°C	-

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Thermal properties	Value	Unit	Test Standard
ISO Data			
[C] Melting temperature, 10°C/min	**210**	°C	ISO 11357-1/-3
[C] Glass transition temperature, 10°C/min	**-5**	°C	ISO 11357-1/-2
[C] Temp. of deflection under load, 1.80 MPa	**45**	°C	ISO 75-1/-2
[C] Temp. of deflection under load, 0.45 MPa	**80**	°C	ISO 75-1/-2
[C] Vicat softening temperature, B	**100**	°C	ISO 306
[C] Coeff. of linear therm. expansion, parallel	**190**	E-6/K	ISO 11359-1/-2
[C] Coeff. of linear therm. expansion, normal	**176**	E-6/K	ISO 11359-1/-2
[C] Burning Behav. at 1.5 mm nom. thickn.	**HB**	class	IEC 60695-11-10
Thickness tested	**1.5**	mm	-
Yellow Card available	**yes**	-	-
[C] Burning Behav. at thickness h	**HB**	class	IEC 60695-11-10
Thickness tested	**3.0**	mm	-
Yellow Card available	**yes**	-	-
[C] Oxygen index	**21**	%	ISO 4589-1/-2
ASTM Data			
UL 94 Flame rating	**HB**	-	UL 94
Thickness tested	**1.5**	mm	-
DTUL @ 66 psi	**115**	°C	ASTM D 648
DTUL @ 264 psi	**51**	°C	ASTM D 648
Melting Temperature	**211**	°C	ASTM D 3418

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Electrical properties	Value	Unit	Test Standard
ISO Data			
[C] Relative permittivity, 100Hz	**4.6**	-	IEC 62631-2-1
[C] Relative permittivity, 1MHz	**4.1**	-	IEC 62631-2-1
[C] Dissipation factor, 100Hz	**120**	E-4	IEC 62631-2-1
[C] Dissipation factor, 1MHz	**360**	E-4	IEC 62631-2-1
[C] Volume resistivity	**8E11**	Ohm*m	IEC 62631-3-1
[C] Surface resistivity	**>1E15**	Ohm	IEC 62631-3-2
[C] Electric strength	**20**	kV/mm	IEC 60243-1
ASTM Data			
Dissipation Factor, 1 MHz	**0.04**	-	ASTM D 150
Dielectric Constant, 1 MHz	**3.7**	-	ASTM D 150

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Other properties	Value	Unit	Test Standard
[C] Water absorption	**0.6**	%	Sim. to ISO 62
[C] Humidity absorption	**0.2**	%	Sim. to ISO 62
[C] Density	**1220**	kg/m³	ISO 1183
Water Absorption, 24hr	**0.3**	%	ASTM D 570
Density	**1220**	kg/m³	ASTM D 792

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Characteristics

Processing

Injection Molding, Film Extrusion, Pipe/Tube Extrusion, Profile Extrusion, Sheet Extrusion, Wire/Cable Extrusion, Other Extrusion, Coating, Casting, Thermoforming

Chemical Resistance

General Chemical Resistance

Certifications

Food contact, Food approval FDA 21 CFR

Delivery form
Pellets

Additives
Release agent

Special Characteristics
Platable, Light stabilized or stable to light, Heat stabilized or stable to heat

Features
Color Stability, Creep Resistance

Applications
Automotive

Regional Availability
North America, Europe, Asia Pacific, South and Central America, Near East/Africa