

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

Typical applications: Hose and tubing, wire and cable, film and sheeting, belting.

[2-Pagers](#)

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
^(C) Melt volume-flow rate, MVR	7	cm ³ /10min	ISO 1133
Temperature	220	°C	-
Load	2.16	kg	-
^(C) Molding shrinkage, parallel	1.4	%	ISO 294-4, 2577
^(C) Molding shrinkage, normal	1.4	%	ISO 294-4, 2577
^(C) Density of melt	1030	kg/m ³	-
^(C) Thermal conductivity of melt	0.16	W/(m K)	-
^(C) Spec. heat capacity of melt	2110	J/(kg K)	-
^(C) Eff. thermal diffusivity	7E-8	m ² /s	-
ASTM Data			
Melt Flow Index, MFI	7.5	g/10min	ASTM D 1238
Temperature	220	°C	-
Load	2.16	kg	-
Mold Shrinkage, MD	0.014	mm/mm	ASTM D 955

^(C): CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^(C) Tensile Modulus	180	MPa	ISO 527
^(C) Tensile creep modulus, 1h	170	MPa	ISO 899-1
^(C) Tensile creep modulus, 1000h	133	MPa	ISO 899-1
^(C) Charpy impact strength, +23°C	N	kJ/m ²	ISO 179/1eU
^(C) Charpy impact strength, -30°C	N	kJ/m ²	ISO 179/1eU
^(C) Charpy notched impact strength, +23°C	N	kJ/m ²	ISO 179/1eA
^(C) Charpy notched impact strength, -30°C	145	kJ/m ²	ISO 179/1eA
^(C) Tensile notched impact strength, +23°C	320	kJ/m ²	ISO 8256/1
^(C) Puncture - maximum force, +23°C	2400	N	ISO 6603-2
^(C) Puncture - maximum force, -30°C	3700	N	ISO 6603-2
^(C) Puncture energy, +23°C	27	J	ISO 6603-2
^(C) Puncture energy, -30°C	43	J	ISO 6603-2
^(C) Stress at 10% elongation	11	MPa	ISO 527

^[C] Stress at 100% elongation	16	MPa	ISO 527
^[C] Stress at break TPE	40	MPa	ISO 527
^[C] Strain at break TPE	>300	%	ISO 527
^[C] Abrasion resistance	120	mm ³	ISO 4649
^[C] Shore D hardness	51	-	ISO 7619-1

ASTM Data

Tensile Strength at Break	40	MPa	ASTM D 638
Elongation at Break	500	%	ASTM D 638
Flexural Modulus	207	MPa	ASTM D 790
Shore D Hardness	55	-	ASTM D 2240
Izod Impact notched, 1/8 in	N	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	163	J/m	ASTM D 256
Temperature	-40	°C	-

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	201	°C	ISO 11357-1/-3
^[C] Glass transition temperature, 10°C/min	-25	°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	70	°C	ISO 75-1/-2
^[C] Vicat softening temperature, B	75	°C	ISO 306
^[C] Coeff. of linear therm. expansion, parallel	180	E-6/K	ISO 11359-1/-2
^[C] Coeff. of linear therm. expansion, normal	180	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	20	%	ISO 4589-1/-2

ASTM Data

UL 94 Flame rating	HB	-	UL 94
Thickness tested	1.5	mm	-
Coefficient of Thermal Expansion, MD	177	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	180	E-6/K	ASTM D 696
DTUL @ 66 psi	90	°C	ASTM D 648
DTUL @ 264 psi	49	°C	ASTM D 648
Melting Temperature	203	°C	ASTM D 3418

[C]: CAMPUS

Electrical properties	Value	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	4.8	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	4.4	-	IEC 62631-2-1
^[C] Dissipation factor, 100Hz	90	E-4	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	375	E-4	IEC 62631-2-1
^[C] Volume resistivity	4E11	Ohm*m	IEC 62631-3-1
^[C] Surface resistivity	>1E15	Ohm	IEC 62631-3-2
^[C] Electric strength	19	kV/mm	IEC 60243-1
^[C] Comparative tracking index	600	-	IEC 60112

ASTM Data

Dissipation Factor, 1 MHz	0.04	-	ASTM D 150
Dielectric Constant, 1 MHz	4.1	-	ASTM D 150

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
^[C] Water absorption	0.6	%	Sim. to ISO 62

Hytrell® 5556

TPC

Celanese

[C] Humidity absorption	0.2	%	Sim. to ISO 62
[C] Density	1190	kg/m ³	ISO 1183
Water Absorption, 24hr	0.5	%	ASTM D 570
Density	1200	kg/m ³	ASTM D 792

[C]: CAMPUS

Film Properties	Value	Unit	Test Standard
ISO Data			
[C] WVTR, 23°C/85%r.h.	300	g/(m ² *d)	ISO 15106-1/-2
[C] Oxygen transmission rate, 23°C/85%r.h.	6000	cm ³ /(m ² *d*bar)	ISO 15105-1/-2
[C] Thickness of specimen	0.025	mm	-

[C]: CAMPUS

Characteristics**Processing**

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

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

Certifications

Food contact, Food approval FDA 21 CFR

Applications

Automotive

Regional Availability

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