

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® 4053FG is a low modulus high performance thermoplastic elastomer developed for applications in contact with food. It is suitable for extrusion and injection molding processes.

FOOD CONTACT

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in Europe and the USA when meeting applicable use conditions. For details, individual compliance statements are available from our representative.

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
^[C] Melt volume-flow rate, MVR	5	cm ³ /10min	ISO 1133
Temperature	190	°C	-
Load	2.16	kg	-
^[C] Molding shrinkage, parallel	0.2	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	0.4	%	ISO 294-4, 2577
^[C] Density of melt	1020	kg/m ³	-
^[C] Eff. thermal diffusivity	5.44E-8	m ² /s	-

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	56	MPa	ISO 527
^[C] Tensile creep modulus, 1h	50	MPa	ISO 899-1
^[C] Tensile creep modulus, 1000h	40	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	N	kJ/m ²	ISO 179/1eA
^[C] Tensile notched impact strength, +23°C	230	kJ/m ²	ISO 8256/1
^[C] Stress at 10% elongation	4.4	MPa	ISO 527
^[C] Stress at break TPE	26	MPa	ISO 527
^[C] Strain at break TPE	>300	%	ISO 527
^[C] Shore D hardness	38	-	ISO 7619-1

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	150	°C	ISO 11357-1/-3
^[C] Glass transition temperature, 10°C/min	-50	°C	ISO 11357-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	50	°C	ISO 75-1/-2
^[C] Coeff. of linear therm. expansion, parallel	220	E-6/K	ISO 11359-1/-2
^[C] Coeff. of linear therm. expansion, normal	220	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] Oxygen index	20	%	ISO 4589-1/-2

[C]: CAMPUS

Electrical properties	Value	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	5.2	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	4.7	-	IEC 62631-2-1
^[C] Dissipation factor, 100Hz	110	E-4	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	525	E-4	IEC 62631-2-1
^[C] Volume resistivity	7E10	Ohm*m	IEC 62631-3-1
^[C] Surface resistivity	2E14	Ohm	IEC 62631-3-2
^[C] Electric strength	18	kV/mm	IEC 60243-1
^[C] Comparative tracking index	600	-	IEC 60112

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
^[C] Water absorption	0.7	%	Sim. to ISO 62
^[C] Humidity absorption	0.2	%	Sim. to ISO 62
^[C] Density	1160	kg/m ³	ISO 1183

[C]: CAMPUS

Characteristics

Processing

Injection Molding, Film Extrusion, Profile Extrusion, Sheet Extrusion, Other Extrusion, Coating, Calandering, Casting, Thermoforming

Delivery form

Pellets, Natural Color

Special Characteristics

Light stabilized or stable to light

Certifications

Food contact

Regional Availability

North America, Europe, Asia Pacific, South and Central America

Other text information

Injection molding

Snake Flow Test , mm

Inject press 62MPa, 1mm	80
Inject press 62MPa, 2.5mm	330
Inject press 83MPa(12,000psi), 1mm	95
Inject press 83MPa(12,000psi), 2.5mm	430