Hytrel® 5526

THERMOPLASTIC POLYESTER ELASTOMER

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® 5526 is a medium modulus Hytrel® grade with nominal durometer hardness of 55D. It contains non-discoloring stabilizer. It is specially recommended for injection molding applications requiring high flow properties.

Typical applications:
Seals, packing and gaskets; gears and bearings.

Product information

Resin Identification	TPC-ET	ISO 1043
Part Marking Code	>TPC-ET<	ISO 11469

Rheological properties

Melt volume-flow rate	17.5cm³/10min	ISO 1133
Melt mass-flow rate	18 g/10min	ISO 1133
Temperature	220 °C	ISO 1133
Load	2.16 kg	ISO 1133
Melt mass-flow rate, Temperature	220 °C	ISO 1133
Melt mass-flow rate, Load	2.16 kg	ISO 1133
Moulding shrinkage, parallel	1.4%	ISO 294-4, 2577
Moulding shrinkage, normal	1.4%	ISO 294-4, 2577

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Typical mechanical properties

Tensile Modulus	190 MPa	ISO 527-1/-2
Yield stress	15 MPa	ISO 527-1/-2
Yield strain	35%	ISO 527-1/-2
Stress at 5% strain	6.9 MPa	ISO 527-1/-2
Stress at 10% strain	11 MPa	ISO 527-1/-2
Stress at 50% strain	14 MPa	ISO 527-1/-2
Stress at break	40 MPa	ISO 527-1/-2
Nominal strain at break	780%	ISO 527-1/-2
Strain at break	>300 %	ISO 527-1/-2
Flexural Modulus	200 MPa	ISO 178
Shear Modulus	65 MPa	ISO 6721
Tensile creep modulus, 1h	170 MPa	ISO 899-1
Tensile creep modulus, 1000h	130 MPa	ISO 899-1
Charpy impact strength, 23°C	N kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	N kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	N kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	150[P] kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	30 kJ/m²	ISO 179/1eA
Tensile notched impact strength, 23°C	270 kJ/m²	ISO 8256/1
Izod notched impact strength, -40°C	115 kJ/m²	ISO 180/1A
Poisson's ratio	0.48	ISO 974
Brittleness temperature	-98 °C	ISO 48-4 / ISO868
Shore D hardness, 15s	51	ISO 868
Shore D hardness, max	55	ISO 34-1
Tear strength, parallel	133 kN/m	ISO 34-1
Tear strength, normal	133 kN/m	ISO 4649
Abrasion resistance	120 mm³	

[P]: Partial Break

Thermal properties

Melting temperature, 10°C/min	203 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	-25 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	45°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	65°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	75°C	ISO 306
Vicat softening temperature, 50°C/h 10N	180 °C	ISO 306
Coeff. of linear therm. expansion, parallel, -40-23°C	180 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	200 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	170 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	200 E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.19W/(m K)	ISO 22007-2
Eff. thermal diffusivity	9E-8 m²/s	
Spec. heat capacity of melt	2110J/(kg K)	

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RTI, electrical, 1.5mm	85°C	UL 746B
RTI, electrical, 3mm	85°C	UL 746B
RTI, impact, 1.5mm	85°C	UL 746B
RTI, impact, 3mm	85°C	UL 746B
RTI, strength, 1.5mm	75°C	UL 746B
RTI, strength, 3mm	80°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB class	IEC 60695-11-10
Thickness tested	1.5 mm	IEC 60695-11-10
UL recognition	yes	UL 94
Burning Behav. at thickness h	HB class	IEC 60695-11-10
Thickness tested	3mm	IEC 60695-11-10
UL recognition	yes	UL 94
Oxygen index	21%	ISO 4589-1/-2
FMVSS Class	SE/B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	28 mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 100Hz	4.9	IEC 62631-2-1
Relative permittivity, 1MHz	4.6	IEC 62631-2-1
Dissipation factor, 100Hz	90 E-4	IEC 62631-2-1
Dissipation factor, 1MHz	375 E-4	IEC 62631-2-1
Volume resistivity	4E11 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	20 kV/mm	IEC 60243-1
Comparative tracking index	600	IEC 60112

Other properties

Humidity absorption, 2mm	0.2%	Sim. to ISO 62
Water absorption, 2mm	0.6%	Sim. to ISO 62
Water absorption, Immersion 24h	0.6%	Sim. to ISO 62
Density	1190 kg/m³	ISO 1183
Density of melt	1040 kg/m³	

VDA Properties

Odour	5 class	VDA 270
Fogging, G-value (condensate)	0.1 mg	ISO 6452