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Hytrel® HTR8724 BK320

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® HTR8724 BK320 is a heat stable, plasticiser-free, high viscosity thermoplastic polyester elastomer designed for extrusion and blow moulding processes. It has been developed for demanding applications such as automotive jounce bumpers.

Product information

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

Rheological properties

Melt mass-flow rate	9	g/10min	ISO 1133
Melt mass-flow rate, Temperature	230	°C	
Melt mass-flow rate, Load	10	kg	
Moulding shrinkage, parallel	1.9	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.7	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	116	MPa	ISO 527-1/-2
Stress at 5% strain	5	MPa	ISO 527-1/-2
Stress at 10% strain	8	MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	14	MPa	ISO 527-1/-2
Tensile stress at 100% strain	18	MPa	ISO 527-1/-2
Stress at 300% strain	29	MPa	ISO 527-1/-2
Tensile stress at break	30	MPa	ISO 527-1/-2
Nominal strain at break	430	%	ISO 527-1/-2
Tensile strain at break	>300	%	ISO 527-1/-2
Flexural modulus	122	MPa	ISO 178
Charpy notched impact strength, 23 °C	N	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30 °C	120[P]	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40 °C	150	kJ/m²	ISO 179/1eA
Izod notched impact strength, -40 °C	95.0[P]	kJ/m²	ISO 180/1A
Poisson's ratio	0.49		
Brittleness temperature	-70	°C	ISO 974

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Shore D hardness, 15s	46		ISO 48-4 / ISO 868
Shore D hardness, max	50		ISO 868
Tear strength, normal	130	kN/m	ISO 34-1

[P]: Partial Break

Thermal properties

Melting temperature, 10°C/min	206	°C	ISO 11357-1/-3
Glass transition temperature, 1 Hz	-40	°C	ISO 6721
Vicat softening temperature, 50°C/h 10N	173	°C	ISO 306
Coeff. of linear therm. expansion, parallel, -40-23°C	190	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	220	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	250	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	100	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	190	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	230	E-6/K	ISO 11359-1/-2

Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

Physical/Other properties

Water absorption, 2mm	0.5	%	Sim. to ISO 62
Density	1160	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.08	%
Melt Temperature Optimum	235	°C
Min. melt temperature	230	°C
Max. melt temperature	250	°C
Mold Temperature Optimum	45	°C
Min. mould temperature	45	°C
Max. mould temperature	55	°C

Extrusion

Drying Temperature	≤100	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	230	°C
Melt Temperature Range	225 - 235	°C

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Blow Molding

Drying Temperature	80 - 100 °C
Drying Time, Dehumidified Dryer	4 - 6 h
Processing Moisture Content	≤0.02 %
Melt Temperature Optimum	245 °C
Melt Temperature Range	240 - 250 °C

Characteristics

Processing	Extrusion, Other Extrusion, Blow Moulding
Delivery form	Pellets
Special characteristics	Light stabilised or stable to light, Heat stabilised or stable to heat

Additional information

Blow molding	Molding shrinkage : >2.5%

Automotive

OEM	STANDARD
Hyundai	MS220-24 Type A
Mercedes-Benz	DBL5562.50 TPC

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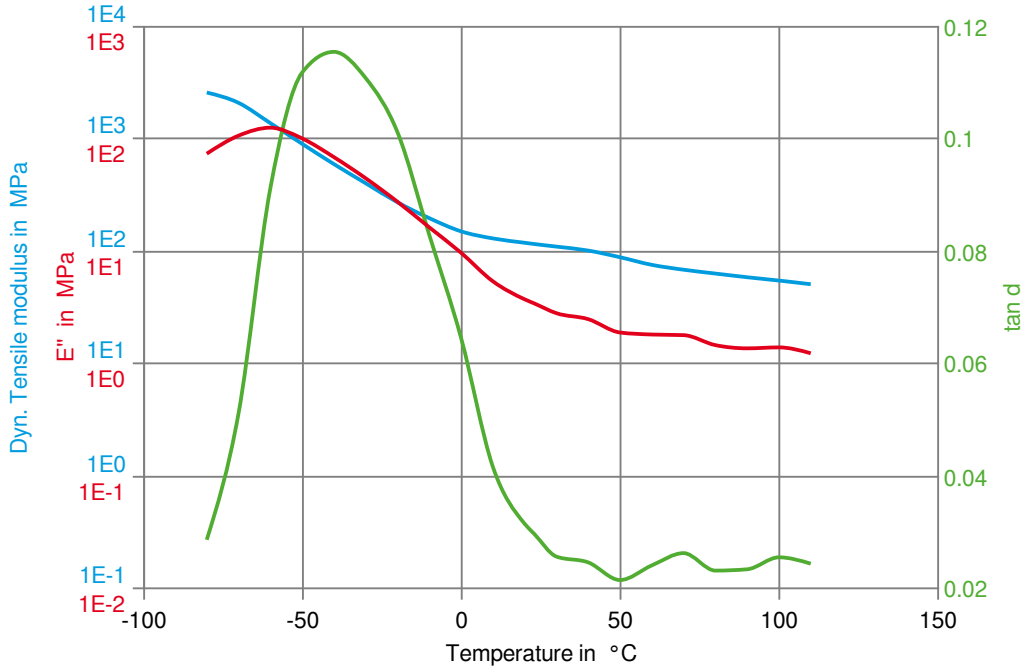
Dynamic Tensile modulus-temperature



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Stress-Strain (Flexible Materials)