Hytrel® HTR8808 BK316

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, DuPont recommends, 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® HTR8808 BK316 is a high viscosity thermoplastic polyester elastomer designed for blow molding. It has very good mechanical properties at elevated temperatures and excellent resistance to most automotive fluids.

Product information

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

Rheological properties

Melt mass-flow rate	4	g/10min	ISO 1133
Melt mass-flow rate, Temperature	240	°C	ISO 1133
Melt mass-flow rate, Load	10	kg	ISO 1133
Intrinsic viscosity	1.1	-	ISO 307, 1157, 1628
Moulding shrinkage, parallel	2.4[1]	%	ISO 294-4, 2577
Moulding shrinkage, normal	2.2[2]	%	ISO 294-4, 2577

[1]: With minimum Hold Pressure (0.8 MPa) : 3.6%

[2]: With minimum Hold Pressure (0.8MPa) : 3.5%

Typical mechanical properties

Tensile Modulus	270	MPa	ISO 527-1/-2
Stress at 5% strain	11	MPa	ISO 527-1/-2
Stress at 10% strain	15	MPa	ISO 527-1/-2
Stress at 50% strain	19	MPa	ISO 527-1/-2
Stress at break	33	MPa	ISO 527-1/-2
Nominal strain at break	300	%	ISO 527-1/-2

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Strain at break	260	%	ISO 527-1/-2
Flexural Modulus	270	MPa	ISO 178
Charpy notched impact strength, 23°C	102[P]	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	12	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	7	kJ/m²	ISO 179/1eA
Izod notched impact strength, -40°C	7	kJ/m²	ISO 180/1A
Poisson's ratio	0.48	-	
Brittleness temperature	-65	°C	ISO 974
Shore D hardness, 15s	54	-	ISO 48-4
Shore D hardness, max	60	-	ISO 48-4
Tear strength, parallel	140	kN/m	ISO 34-1
Tear strength, normal	130	kN/m	ISO 34-1

[P]: Partial Break

Thermal properties

Melting temperature, 10°C/min	215	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	15	°C	ISO 11357-1/-2
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	60	°C	ISO 306
Vicat softening temperature, 50°C/h 10N	195	°C	ISO 306
CLTE, Parallel, -40-23°C	200	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	210	E-6/K	ISO 11359-1/-2
CLTE, Normal, -40-23°C	180	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	200	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)

Other properties

Density	1160	kg/m³	ISO 1183
Density of melt	980	kg/m³	

Blow Molding

Drying Recommended	yes	-
Drying Temperature	80[3]	°C
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.03	%
Melt Temperature Optimum	245	°C
Melt Temperature Range	235 - 250	°C
Swell ratio	1.6	-
Mold Temperature Optimum	45	°C

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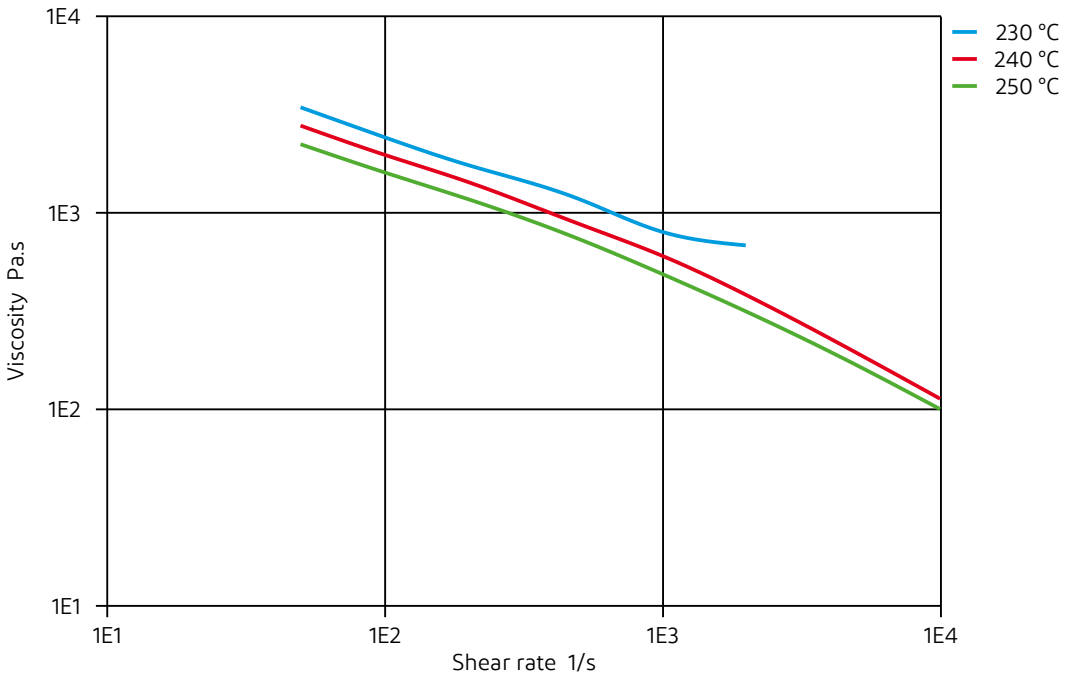
Mold Temperature Range	40 - 60 °C

[3]: At the start of the dryer, dry at 70°C for 1 hour

Viscosity-shear rate



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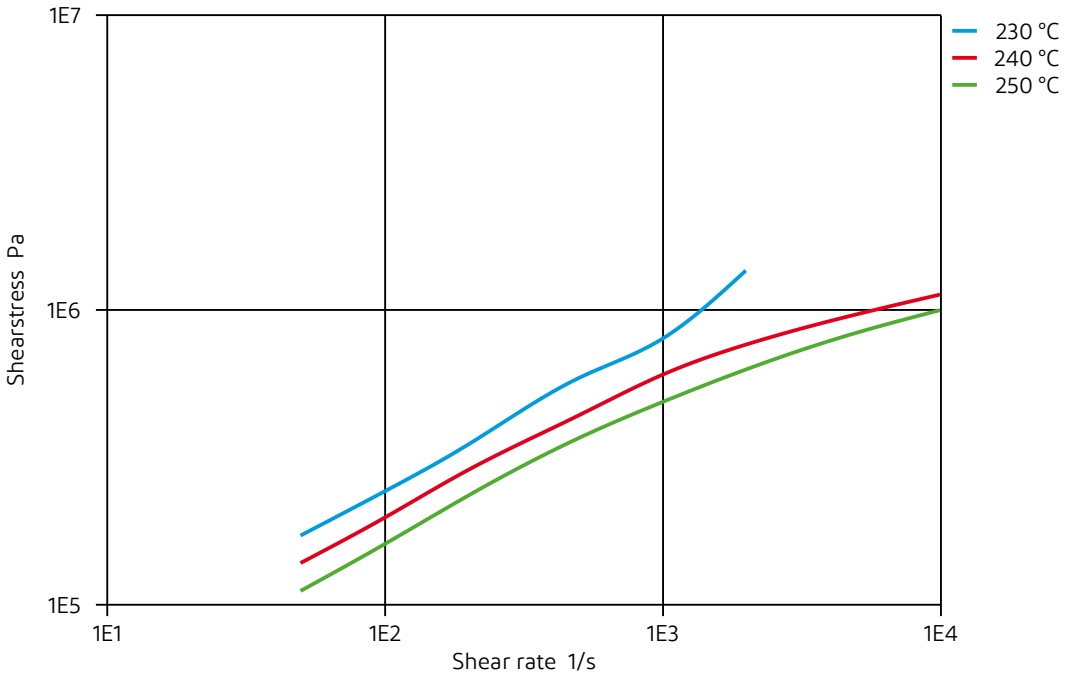
Shearstress-shear rate



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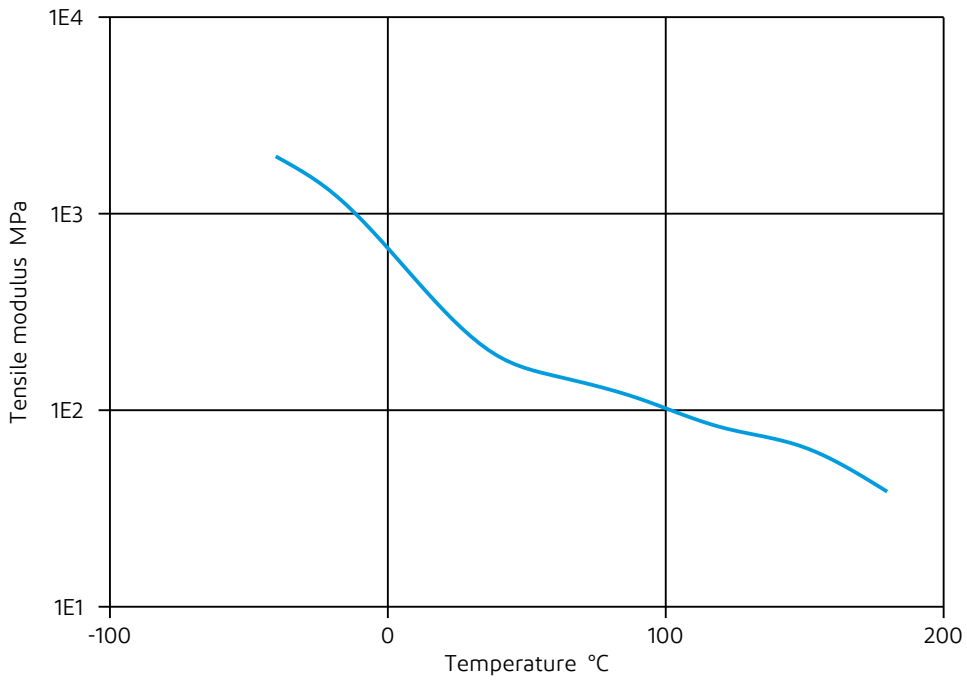
Tensile modulus-temperature



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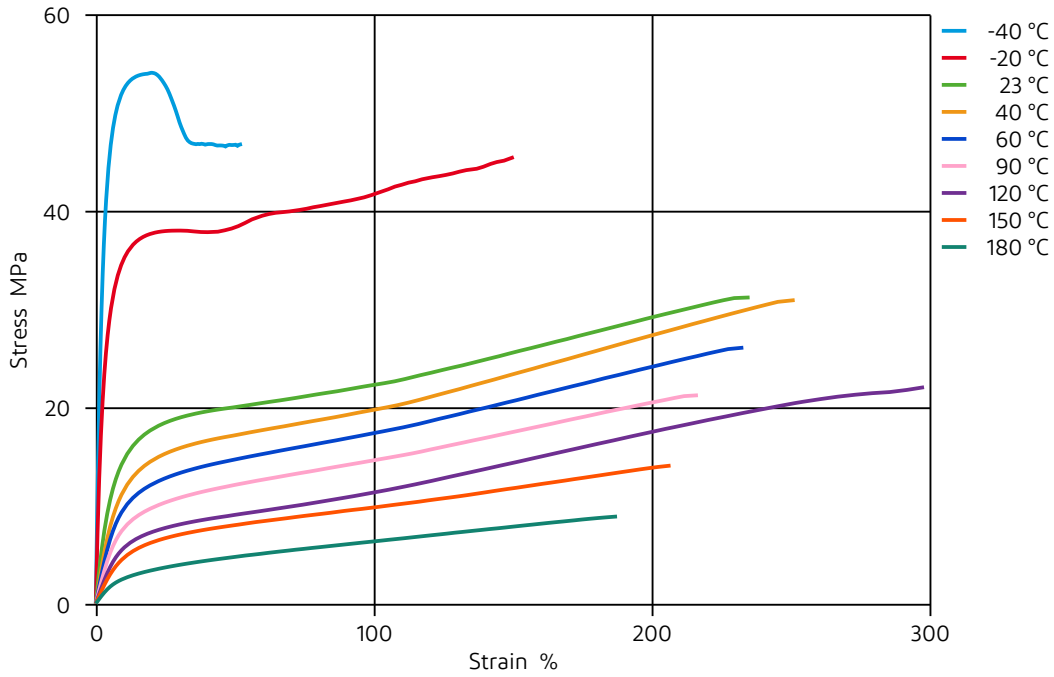
Stress-Strain (Flexible Materials)



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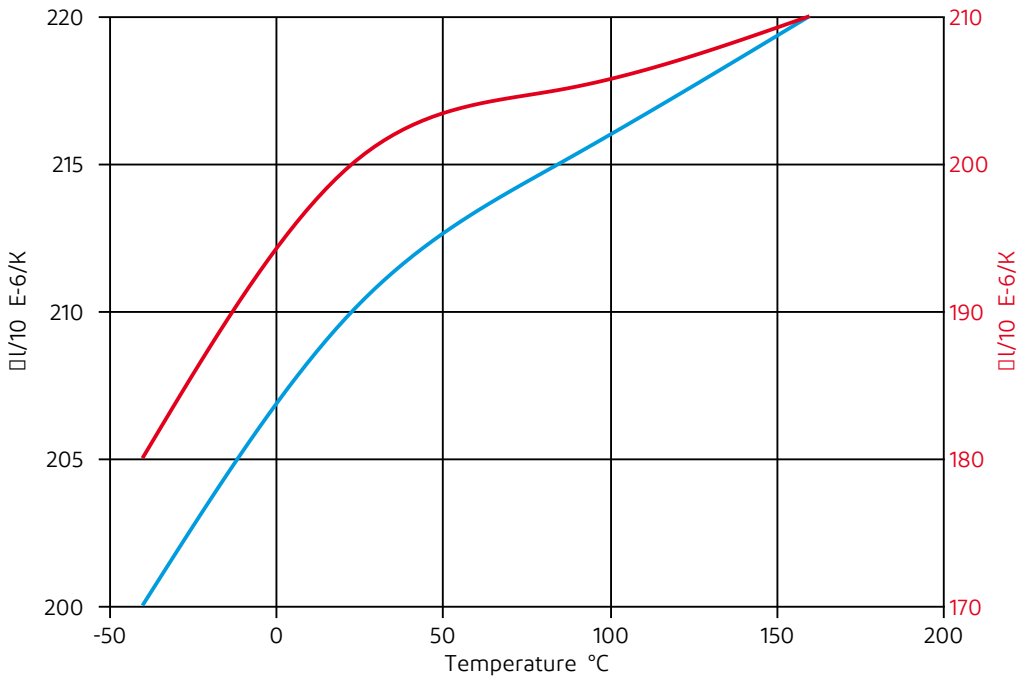
Coeff. of linear thermal expansion



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Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass), 23°C

Symbols used:

- ✔ possibly resistant
  Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).
- ✘ not recommended - see explanation
  Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).