

Hytrel® HTR8797 BK320

THERMOPLASTIC POLYESTER ELASTOMER

Hytrel® HTR8797 BK320 is a 55 Shore D High Viscosity Polyester Elastomer with Excellent Heat Ageing Protection
 Developed for Blow Molding

Product information

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

Rheological properties

Melt volume-flow rate	9 cm ³ /10min	ISO 1133
Melt mass-flow rate	9 g/10min	ISO 1133
Temperature	240 °C	
Load	10 kg	
Melt mass-flow rate, Temperature	240 °C	
Melt mass-flow rate, Load	10 kg	
Moulding shrinkage, parallel	2.1 %	ISO 294-4, 2577
Moulding shrinkage, normal	2.1 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	180 MPa	ISO 527-1/-2
Stress at 5% strain	8 MPa	ISO 527-1/-2
Stress at 10% strain	12 MPa	ISO 527-1/-2
Stress at 50% strain	19 MPa	ISO 527-1/-2
Stress at 100% strain	22 MPa	ISO 527-1/-2
Stress at break	35 MPa	ISO 527-1/-2
Nominal strain at break	400 %	ISO 527-1/-2
Strain at break	>300 %	ISO 527-1/-2
Flexural Modulus	180 MPa	ISO 178
Charpy impact strength, 23°C	N kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	N kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	42 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -40°C	19 kJ/m ²	ISO 179/1eA
Izod notched impact strength, -40°C	19 kJ/m ²	ISO 180/1A
Poisson's ratio	0.48	
Brittleness temperature	-58 °C	ISO 974
Shore D hardness, 15s	51	ISO 48-4 / ISO 868
Shore D hardness, max	54	ISO 868
Tear strength, parallel	140 kN/m	ISO 34-1
Tear strength, normal	120 kN/m	ISO 34-1



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Thermal properties

Melting temperature, 10°C/min	214 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	-40 °C	ISO 11357-1/-3
Temp. of deflection under load, 0.45 MPa	62 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 10N	180 °C	ISO 306
Coeff. of linear therm. expansion, parallel, -40-23°C	160 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	197 E-6/K	ISO 11359-1/-2
CLTE, Parallel, 23-55°C(73-130°F)	203 E-6/K	ASTM E 831
Coeff. of linear therm. expansion, parallel, 55-160°C	224 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	150 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	189 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, Normal, 23-55°C (73-130°F)	197 E-6/K	ASTM E 831
Coeff. of linear therm. expansion, normal, 55-160°C	217 E-6/K	ISO 11359-1/-2

Flammability

FMVSS Class	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	43 mm/min	ISO 3795 (FMVSS 302)

Other properties

Density	1190 kg/m³	ISO 1183
Density of melt	1010 kg/m³	Internal

Injection

Drying Recommended	yes	
Drying Temperature	110 °C	
Drying Time, Dehumidified Dryer	2 - 4 h	
Processing Moisture Content	≤0.08 %	
Melt Temperature Optimum	245 °C	Internal
Min. melt temperature	240 °C	
Max. melt temperature	255 °C	
Mold Temperature Optimum	45 °C	
Min. mould temperature	40 °C	
Max. mould temperature	50 °C	

Extrusion

Processing Moisture Content	≤0.06 %
Melt Temperature Optimum	230 °C



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Blow Molding

Drying Recommended	yes
Drying Temperature	90 - 100 °C
Drying Time, Dehumidified Dryer	4 - 6 h
Processing Moisture Content	≤0.03 %
Melt Temperature Optimum	235 °C
Melt Temperature Range	230 - 240 °C
Swell ratio	2.6
Mold Temperature Optimum	50 °C
Mold Temperature Range	30 - 70 °C

Additional information

Injection molding

PREPROCESSING

Drying recommended = Yes
Drying temperature = 110 °C
Drying time, dehumidified dryer = 2-4 h
Processing moisture content = <0.08 %

PROCESSING

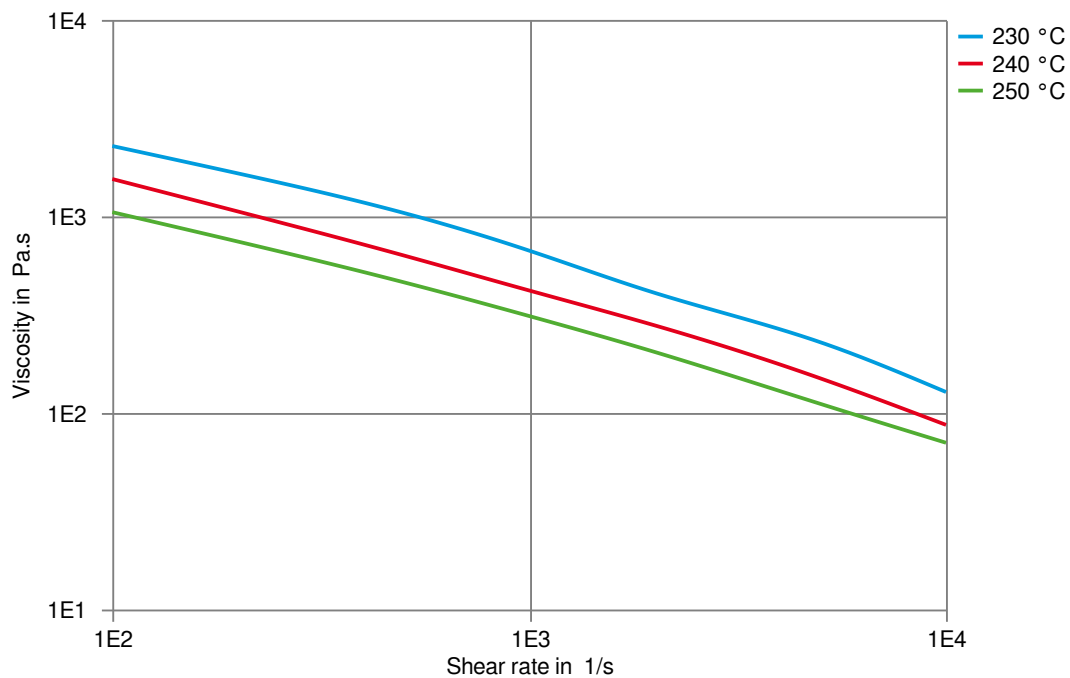
Melt temperature optimum = 245 °C
Mold temperature optimum = 45 °C
Mold temperature range = 40-50 °C



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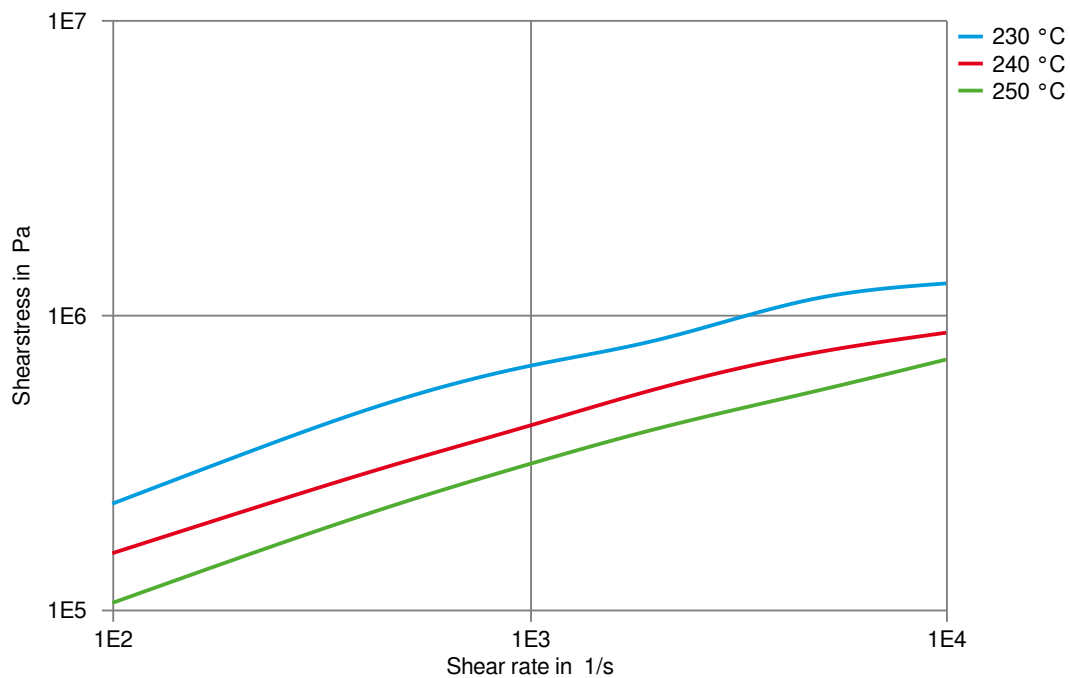
Viscosity-shear rate



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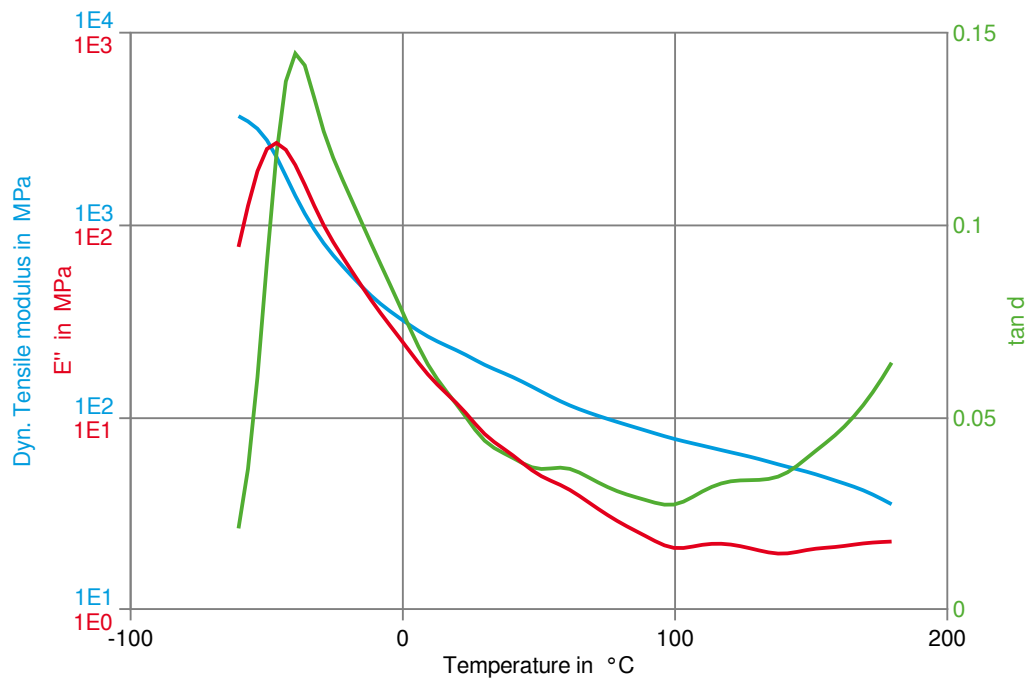
Shearstress-shear rate



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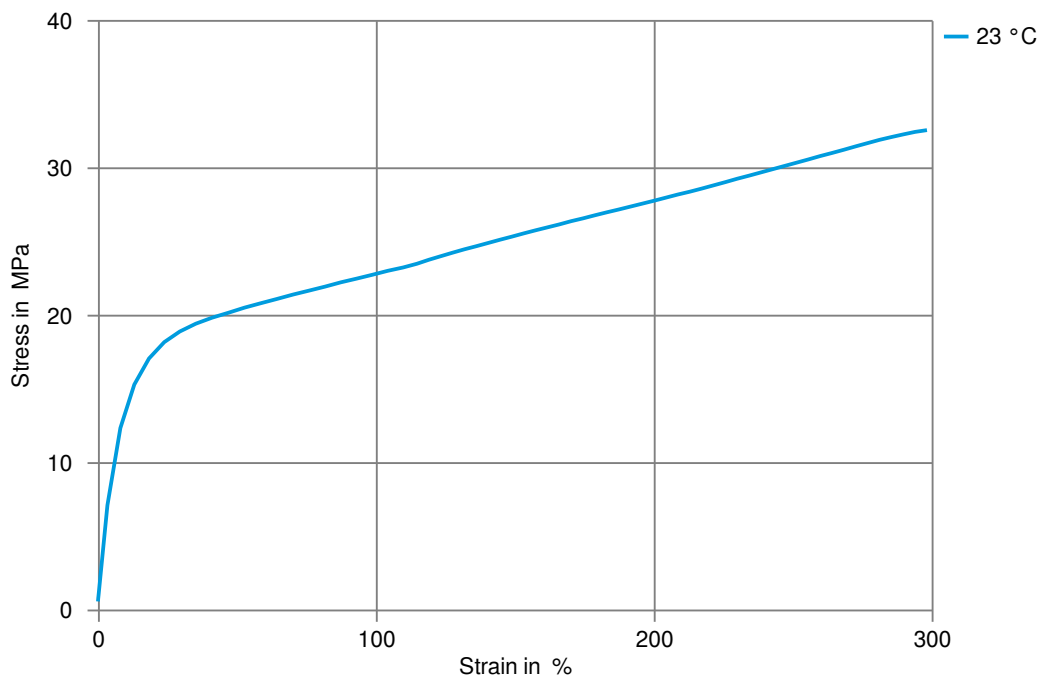
Dynamic Tensile modulus-temperature



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Stress-Strain (Flexible Materials)



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Chemical Media Resistance

Mineral oils

- ✓ Insulating Oil, 23°C

Other

- ✓ Water, 23°C
- ✗ Water, 90°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).

