



# 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 <sup>[1]</sup> %	ISO 294-4, 2577
Moulding shrinkage, normal	2.2 <sup>[2]</sup> %	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



# Hytrel® HTR8808 BK316

## THERMOPLASTIC POLYESTER ELASTOMER

Strain at break	260 %	ISO 527-1/-2
Flexural Modulus	270 MPa	ISO 178
Charpy notched impact strength, 23°C	102 <sup>[P]</sup> kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	12 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -40°C	7 kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength, -40°C	7 kJ/m <sup>2</sup>	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/m <sup>3</sup>	ISO 1183
Density of melt	980 kg/m <sup>3</sup>	

### Blow Molding

Drying Recommended	yes -
Drying Temperature	80 <sup>[3]</sup> °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



# Hytrel<sup>®</sup> HTR8808 BK316

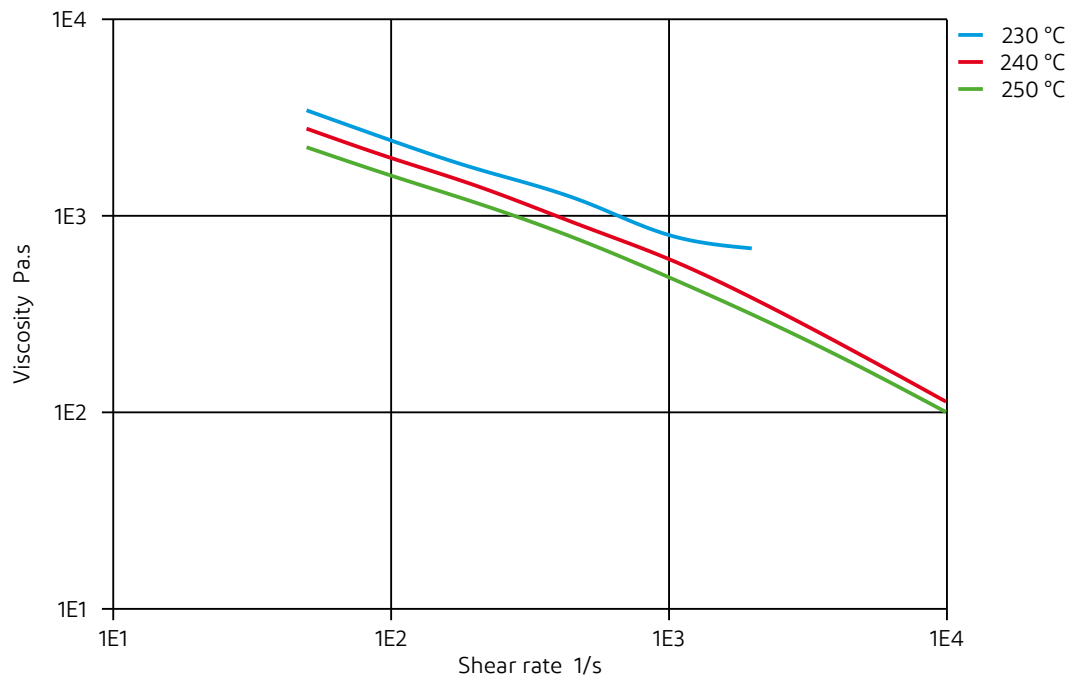
THERMOPLASTIC POLYESTER ELASTOMER

Mold Temperature Range

40 - 60 °C

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

## Viscosity-shear rate

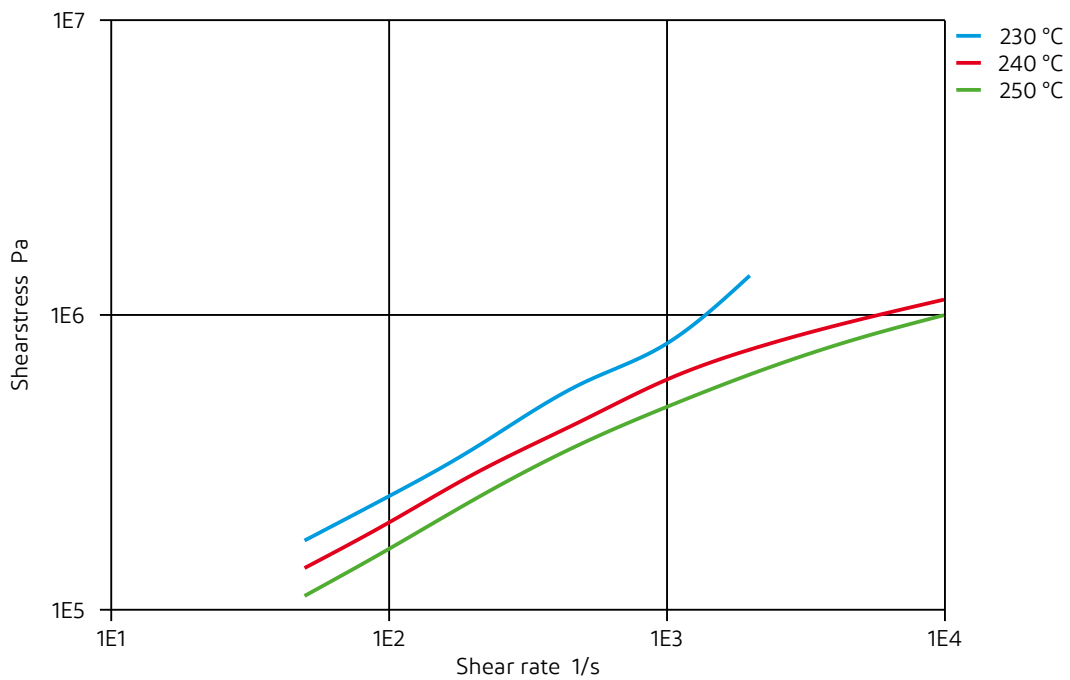




# Hytrel<sup>®</sup> HTR8808 BK316

THERMOPLASTIC POLYESTER ELASTOMER

Shearstress-shear rate

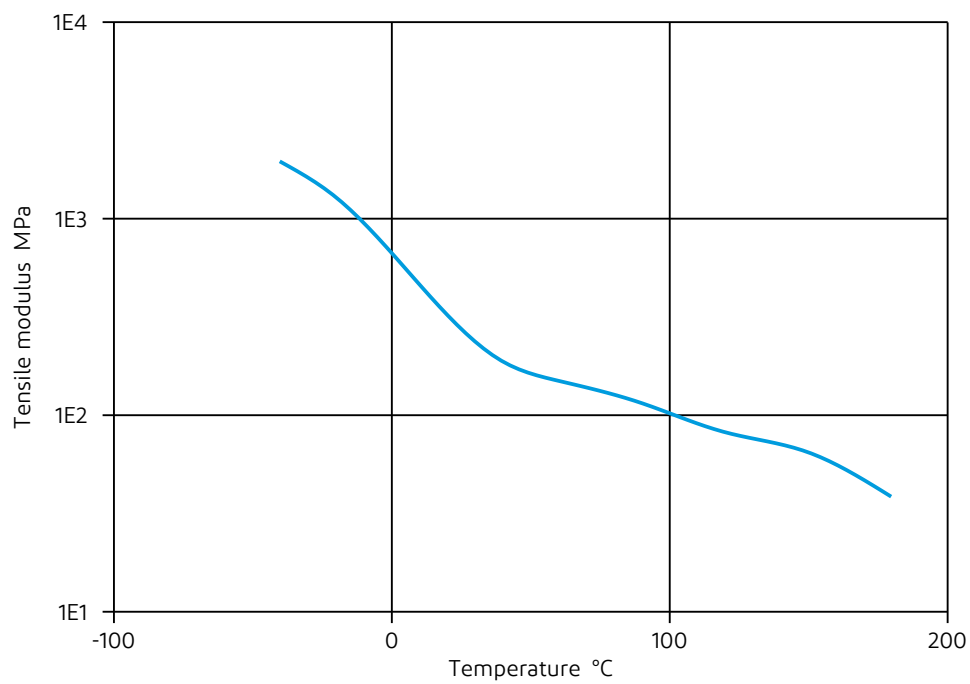




# Hytrel<sup>®</sup> HTR8808 BK316

THERMOPLASTIC POLYESTER ELASTOMER

Tensile modulus-temperature

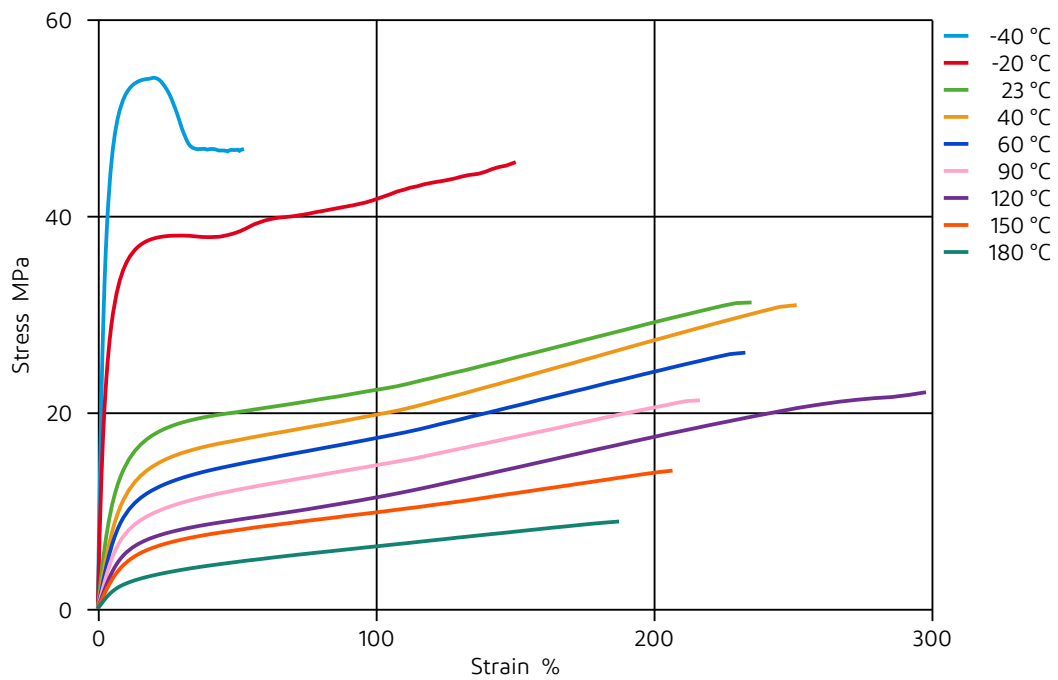




# Hytrel<sup>®</sup> HTR8808 BK316

THERMOPLASTIC POLYESTER ELASTOMER

Stress-Strain (Flexible Materials)

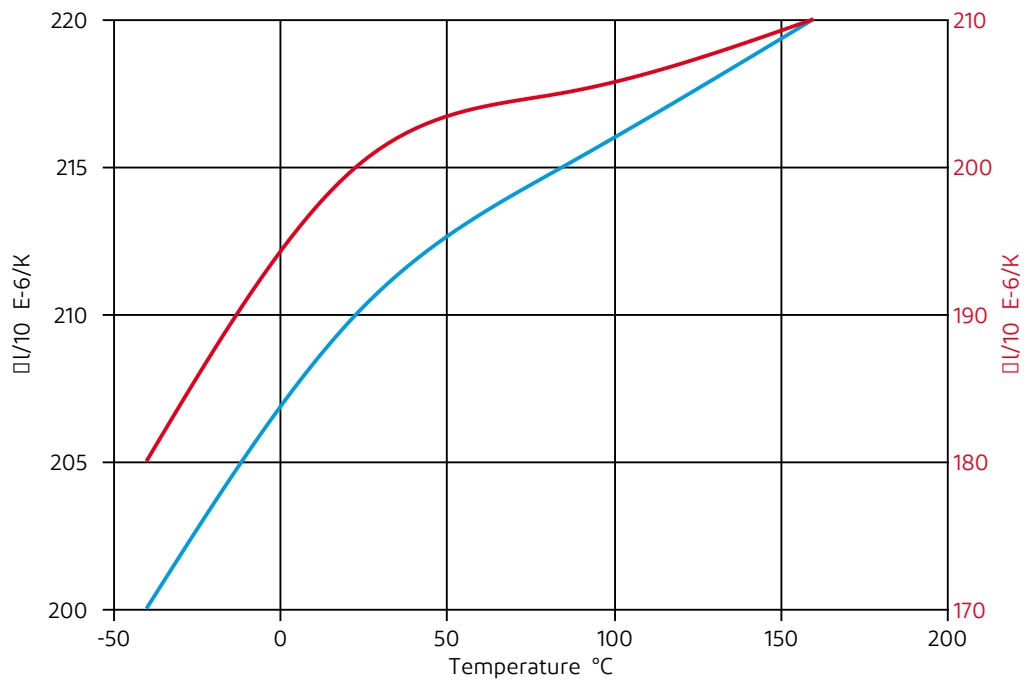




# Hytrel<sup>®</sup> HTR8808 BK316

THERMOPLASTIC POLYESTER ELASTOMER

Coeff. of linear thermal expansion





# Hytrel<sup>®</sup> HTR8808 BK316

## THERMOPLASTIC POLYESTER ELASTOMER

### 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).

The information set forth herein is furnished free of charge, is based on technical data that DuPont believes to be reliable, and represents typical values that fall within the normal range of properties. This information relates only to the specific material designated and may not be valid for such material used in combination with other materials or in other processes. It is intended for use by persons having technical skill, at their own discretion and risk. This information should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards and comply with applicable law. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents.

CAUTION: Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract or other acknowledgement that is consistent with the DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative.

DuPont's sole warranty is that our products will meet our standard sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DUPONT SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR NON-INFRINGEMENT. DUPONT DISCLAIMS LIABILITY FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.