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Hytrel® HTR8441 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, 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® HTR8441 is a 55 nom. Shore D thermoplastic polyester elastomer for blow molding and extrusion. It provides good mechanical properties at high temperature.

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
Temperature	240	°C	
Load	10	kg	
Melt mass-flow rate	9	g/10min	ISO 1133
Melt mass-flow rate, Temperature	240	°C	
Melt mass-flow rate, Load	10	kg	
Moulding shrinkage, parallel	2.2	%	ISO 294-4, 2577
Moulding shrinkage, normal	2.1	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	190	MPa	ISO 527-1/-2
Stress at 5% strain	8	MPa	ISO 527-1/-2
Stress at 10% strain	13	MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	19	MPa	ISO 527-1/-2
Tensile stress at break	38	MPa	ISO 527-1/-2
Nominal strain at break	450	%	ISO 527-1/-2
Tensile strain at break	>300	%	ISO 527-1/-2
Flexural modulus	190	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	39	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -40°C	19	kJ/m^2	ISO 179/1eA
Tensile notched impact strength, 23°C	330	kJ/m^2	ISO 8256/1

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Izod notched impact strength, -40 °C	20.0	kJ/m²	ISO 180/1A
Poisson's ratio	0.48		
Brittleness temperature	-54	°C	ISO 974
Shore D hardness, 15s	52		ISO 48-4 / ISO 868
Shore D hardness, max	56		ISO 868
Tear strength, parallel	150	kN/m	ISO 34-1
Tear strength, normal	140	kN/m	ISO 34-1

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
Vicat softening temperature, 50 °C/h 10N	182	°C	ISO 306
Thermal conductivity of melt	0.16	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2150	J/(kg K)	ISO 22007-4

Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	42	mm/min	ISO 3795 (FMVSS 302)

Physical/Other properties

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

VDA Properties

Odour	3.5[DS]	class	VDA 270

[DS]: Derived from similar grade

Injection

Drying Recommended	yes	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.08	%
Melt Temperature Optimum	245	°C
Min. melt temperature	240	°C
Max. melt temperature	255	°C
Mold Temperature Optimum	45	°C
Min. mould temperature	40	°C
Max. mould temperature	55	°C

Extrusion

Drying Temperature	110	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Range	225 - 240	°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	240	°C
Melt Temperature Range	230 - 240	°C
Swell ratio	2.4	
Mold Temperature Optimum	50	°C
Mold Temperature Range	30 - 70	°C

Characteristics

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

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
General Motors	Part Specific Approval, Please Contact Your CE Representative For More Details.	
Mercedes-Benz	DBL5562.50 TPC	
Stellantis	B62 0300 / 61/212M-214E(-)/11/J9/M5/Q1/R4/Z9	CPN5161, 01994_15_00078
Stellantis - Chrysler	MS-DB-448 / CPN-5161	Black

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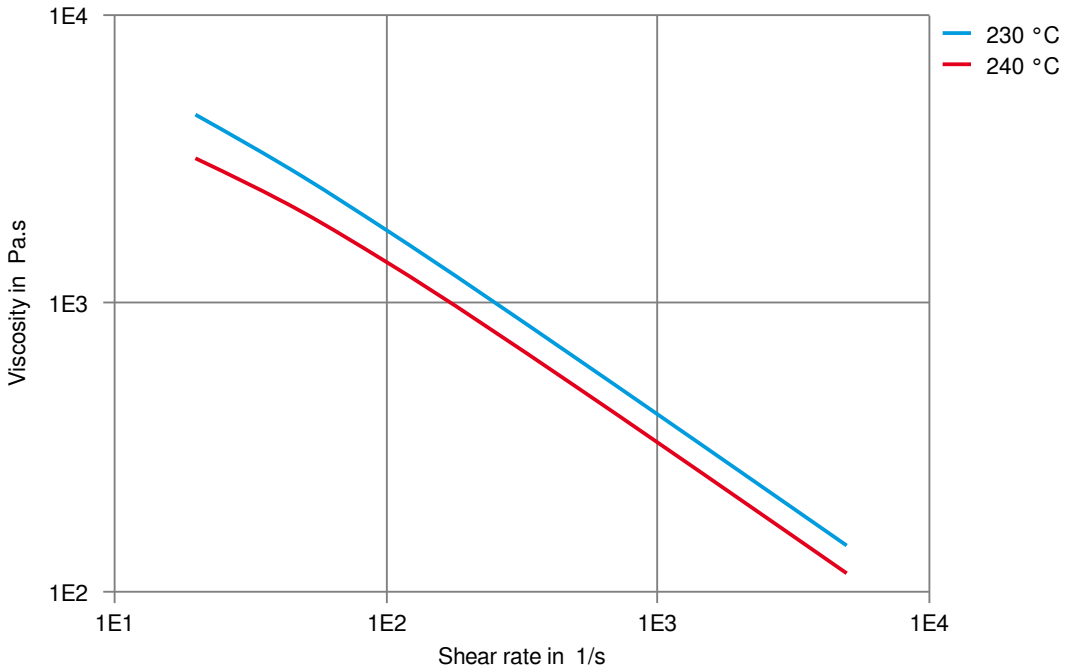
Viscosity-shear rate



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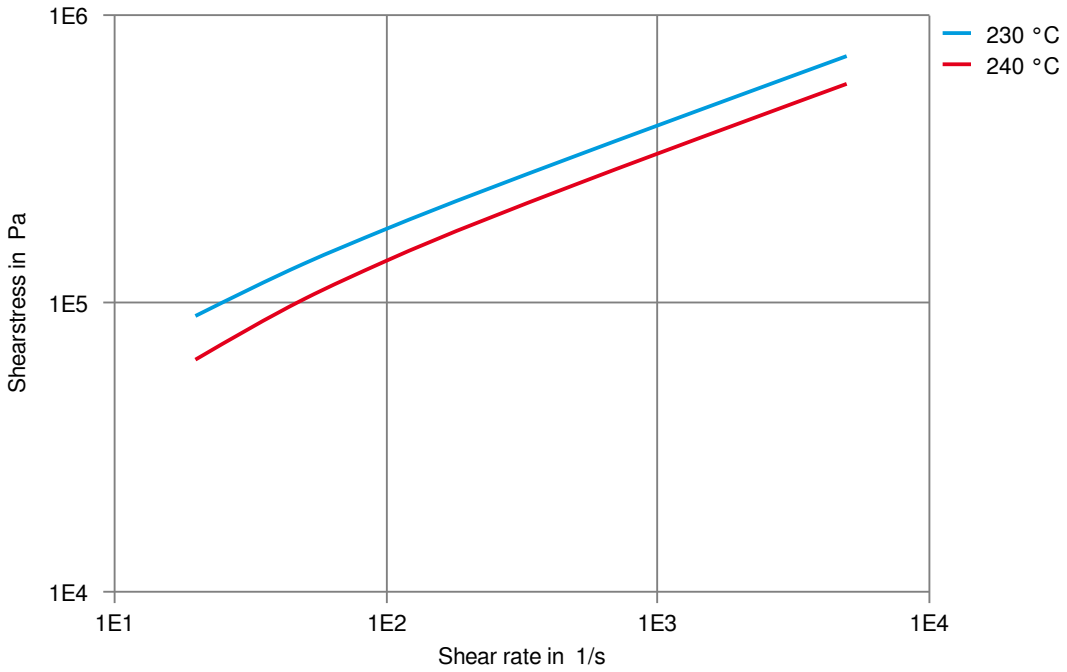
Shearstress-shear rate



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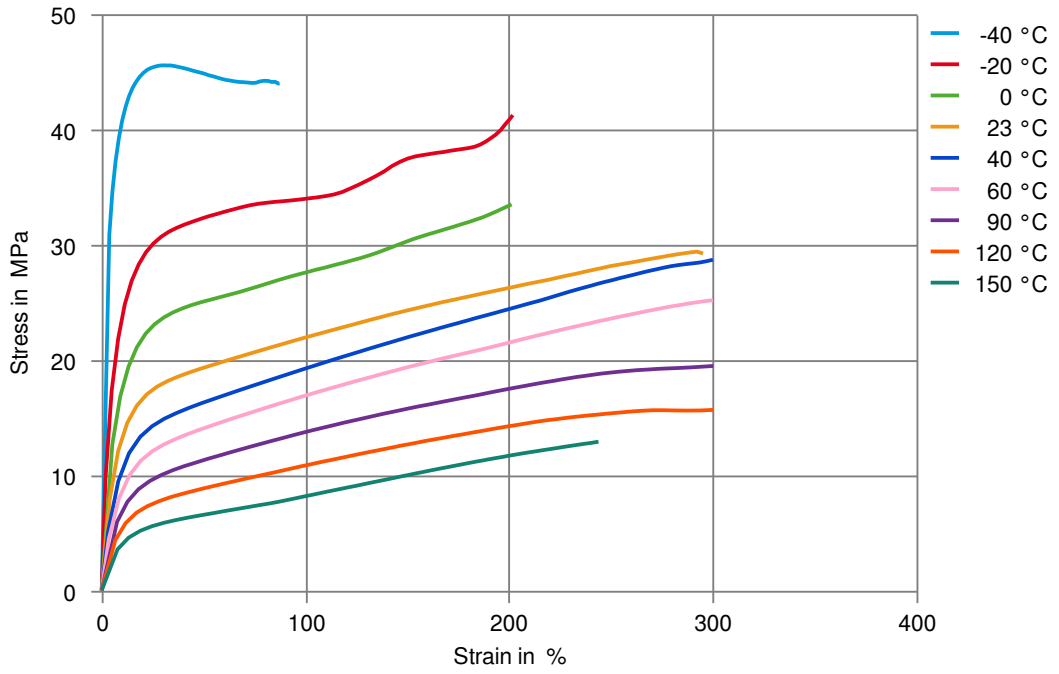
Stress-Strain (Flexible Materials)



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Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass), 23°C
- ✔ Citric Acid solution (10% by mass), 23°C
- ✔ Lactic Acid (10% by mass), 23°C
- ✘ Hydrochloric Acid (36% by mass), 23°C
- ✘ Nitric Acid (40% by mass), 23°C
- ✘ Sulfuric Acid (38% by mass), 23°C
- ✔ Sulfuric Acid (5% by mass), 23°C
- ✘ Chromic Acid solution (40% by mass), 23°C

Bases

- ✔ Sodium Hydroxide solution (35% by mass), 23°C
- ✔ Sodium Hydroxide solution (1% by mass), 23°C
- ✔ Ammonium Hydroxide solution (10% by mass), 23°C

Alcohols

- ✔ Isopropyl alcohol, 23°C
- ✔ Methanol, 23°C
- ✔ Ethanol, 23°C

Hydrocarbons

- ✔ n-Hexane, 23°C
- ✔ Toluene, 23°C
- ✔ iso-Octane, 23°C

Ketones

- ✘ Acetone, 23°C

Ethers

- ✘ Diethyl ether, 23°C

Mineral oils

- ✔ SAE 10W40 multigrade motor oil, 23°C
- ✘ SAE 10W40 multigrade motor oil, 130°C
- ✘ SAE 80/90 hypoid-gear oil, 130°C
- ✔ Insulating Oil, 23°C
- ✘ Motor oil OS206 304 Ref.Eng.Oil, ISP, 135°C
- ✘ Automatic hypoid-gear oil Shell Donax TX, 135°C
- ✘ Hydraulic oil Pentosin CHF 202, 125°C

Standard Fuels

- ✘ ISO 1817 Liquid 1 - E5, 60°C
- ✘ ISO 1817 Liquid 2 - M15E4, 60°C
- ✘ ISO 1817 Liquid 3 - M3E7, 60°C
- ✘ ISO 1817 Liquid 4 - M15, 60°C
- ✔ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✔ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✔ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✘ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ✘ Diesel fuel (pref. ISO 1817 Liquid F), >90°C

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Salt solutions

- ✔ Sodium Chloride solution (10% by mass), 23°C
- ✘ Sodium Hypochlorite solution (10% by mass), 23°C
- ✔ Sodium Carbonate solution (20% by mass), 23°C
- ✔ Sodium Carbonate solution (2% by mass), 23°C
- ✔ Zinc Chloride solution (50% by mass), 23°C

Other

- ✔ Ethyl Acetate, 23°C
- ✘ Hydrogen peroxide, 23°C
- ✘ DOT No. 4 Brake fluid, 130°C
- ✘ Ethylene Glycol (50% by mass) in water, 108°C
- ✔ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23°C
- ✔ 50% Oleic acid + 50% Olive Oil, 23°C
- ✔ Water, 23°C
- ✘ Water, 90°C
- ✔ Phenol solution (5% by mass), 23°C
- ✘ Coolant Glysantin G48, 1:1 in water, 125°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).

Revised: 2025-04-17 Source: Celanese Materials Database