



ISO 1043

Hytrel® HTR4275 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® HTR4275 BK316 is designed for blow molding, extrusion or processing techniques requiring high melt viscosity. It has nominal hardness of 55D, is pigmented black with fine particle size carbon black, and contains a general purpose stabilizer.

Typical applications:

Hollow thin wall parts requiring a tough polymer with excellent flexibility and temperature properties such as automotive boots.

Product information Resin Identification

Part Marking Code	>TPC-ET<		ISO 11469
Rheological properties			
Melt volume-flow rate	6	cm ³ /10min	ISO 1133
Temperature	230	°C	
Load	10	kg	
Melt mass-flow rate	6	g/10min	ISO 1133
Melt mass-flow rate, Temperature	230	°C	
Melt mass-flow rate, Load	10	kg	
Moulding shrinkage, parallel	1.7	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.9	%	ISO 294-4, 2577
Typical machanical proportion			

TPC-ET

Typical mechanical properties

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Tensile modulus 160 M	MPa ISO 527-1/-2
Stress at 5% strain 6.7 M	MPa ISO 527-1/-2
Stress at 10% strain 10.4 M	MPa ISO 527-1/-2
Tensile stress at 50% strain, 1BA 17 M	MPa ISO 527-1/-2
Tensile stress at 100% strain 21 M	MPa ISO 527-1/-2
Tensile stress at break 37 M	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 160 N	MPa ISO 178
Tensile creep modulus, 1h 140 N	MPa ISO 899-1
Tensile creep modulus, 1000h 90 N	MPa ISO 899-1
Charpy impact strength, 23°C N k	kJ/m ² ISO 179/1eU
Charpy notched impact strength, 23°C N k	kJ/m ² ISO 179/1eA

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Charpy notched impact strength, -30°C Charpy notched impact strength, -40°C Tensile notched impact strength, 23°C Poisson's ratio Brittleness temperature Shore D hardness, 15s Shore D hardness, max Tear strength, parallel Tear strength, normal [P]: Partial Break	30 410 0.49 -100 52 55 140	kJ/m² kJ/m² kJ/m² ° C	ISO 179/1eA ISO 179/1eA ISO 8256/1 ISO 974 ISO 48-4 / ISO 868 ISO 868 ISO 34-1 ISO 34-1
Thermal properties			
Melting temperature, 10°C/min Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa Temperature of deflection under load, 0.45 MPa Vicat softening temperature, 50°C/h 10N Coefficient of linear thermal expansion (CLTE), parallel Coefficient of linear thermal expansion (CLTE),	57 170 181	°C °C	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 75-1/-2 ISO 306 ISO 11359-1/-2
normal Thermal conductivity of melt Effective thermal diffusivity, flow Specific heat capacity of melt TGA curve	0.15 5.44E-8	W/(m K)	ISO 22007-2 ISO 22007-4 ISO 22007-4 ISO 11359-1/-2
Flammability			
Burning Behav. at 1.5mm nom. thickn. Thickness tested FMVSS Class Burning rate, Thickness 1 mm	1.5 B	class mm mm/min	IEC 60695-11-10 IEC 60695-11-10 ISO 3795 (FMVSS 302) ISO 3795 (FMVSS 302)
Physical/Other properties			
Humidity absorption, 2mm Water absorption, 2mm Water absorption, Immersion 24h Density Density of melt		%	Sim. to ISO 62 Sim. to ISO 62 Sim. to ISO 62 ISO 1183
VDA Properties Odour	3.5	class	VDA 270
Injection Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content	yes 100 2 - 4 ≤0.08	h	

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Melt Temperature Optimum	230	°C
Min. melt temperature	220	°C
Max. melt temperature	250	°C
Mold Temperature Optimum	40	°C
Min. mould temperature	30	°C
Max. mould temperature	41	°C
Ejection temperature	100	°C

Extrusion

Drying Temperature	100 °C
Drying Time, Dehumidified Dryer	2-3 h
Processing Moisture Content	≤0.06 %
Melt Temperature Range	205 - 220 °C

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	230	°C
Melt Temperature Range	220 - 240	°C
Swell ratio	2.4	
Mold Temperature Optimum	50	°C
Mold Temperature Range	30 - 70	°C

Characteristics

Processing Injection Moulding, Extrusion, Blow Moulding, Thermoforming

Delivery form Pellets

Special characteristics Light stabilised or stable to light, Heat stabilised or stable to heat

Additional information

Blow molding Molding shrinkage

Normal, 1.0mm Blow Molded = 2.2-2.7 % Parallel 1.0mm Blow Molded = 1.5-2.0 %

Automotive

OEM STANDARD ADDITIONAL INFORMATION

Ford WSS-M4D1006-A1

General Motors Part Specific Approval, Please Contact Your

CE Representative For More Details.

Hyundai MS220-24 Type C Mercedes-Benz DBL5562.34 TPS

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Mercedes-Benz DBL5562.34 TPU Mercedes-Benz DBL5562.34 TPV Mercedes-Benz DBL5562.50 TPC Mercedes-Benz DBL5562.AA39 TPC Mercedes-Benz DBL5562.AA41 TPU Mercedes-Benz **DBL5562.AA41 TPV**

Renault-Nissan UB02b, No Spec, Special Part Approval, See

Your CE Account Manager.

B62 0300 / CPN2703, 01994_10_00206 Stellantis

61/213M-215E/11/J3/M1/Q2/R4/Z9 + S62 000 (130 °C - 3000h) Stellantis - Chrysler Black

VW Group VW 50123 TPC-ET

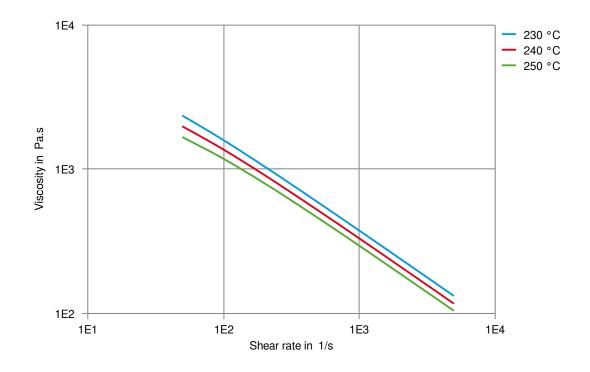
Viscosity-shear rate

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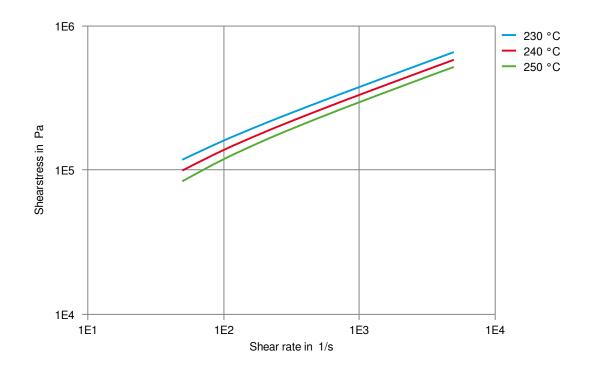
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Shearstress-shear rate



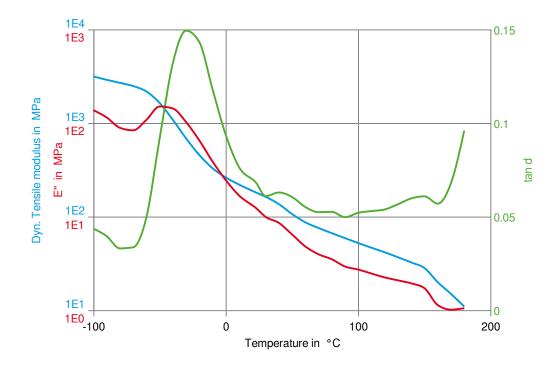
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Dynamic Tensile modulus-temperature



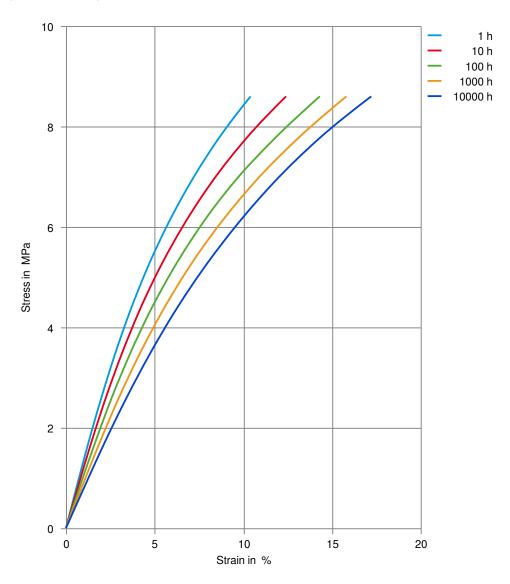
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THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 23°C



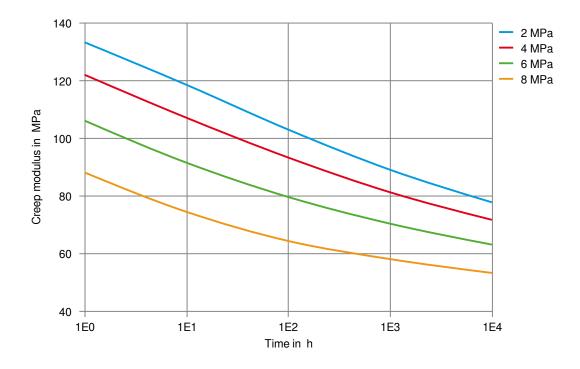
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 23°C



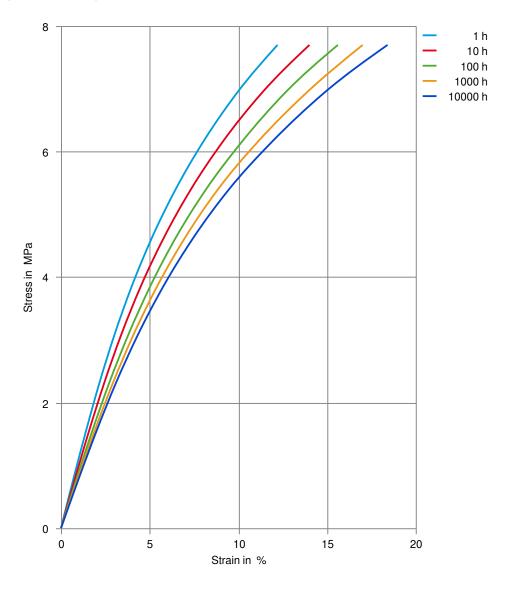
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THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 40°C



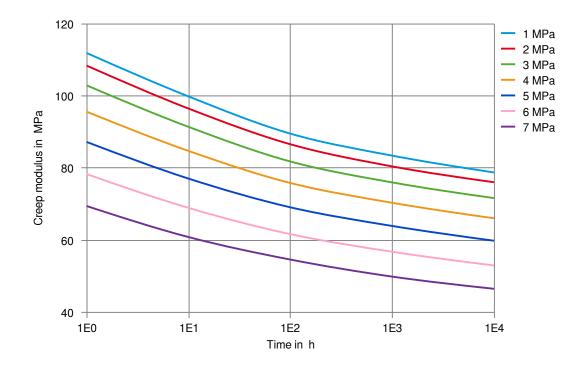
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 40°C



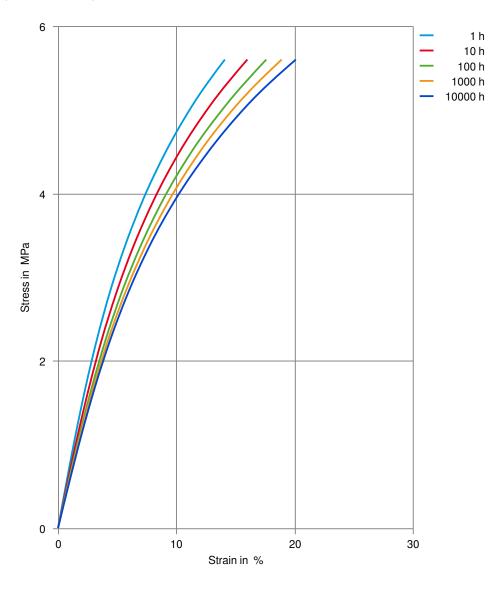
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Stress-strain (isochronous) 80°C



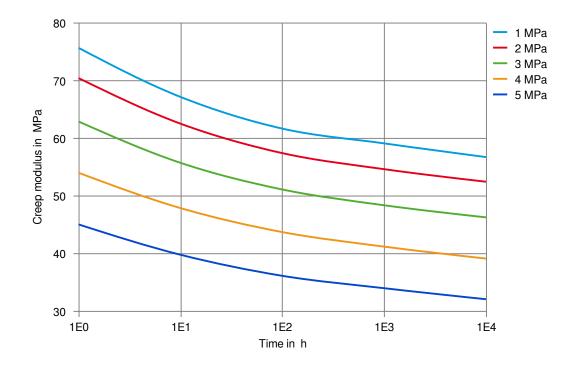
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 80°C



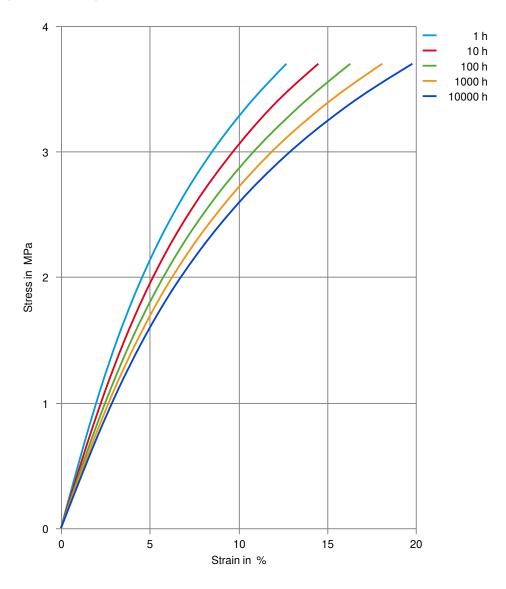
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Stress-strain (isochronous) 100°C



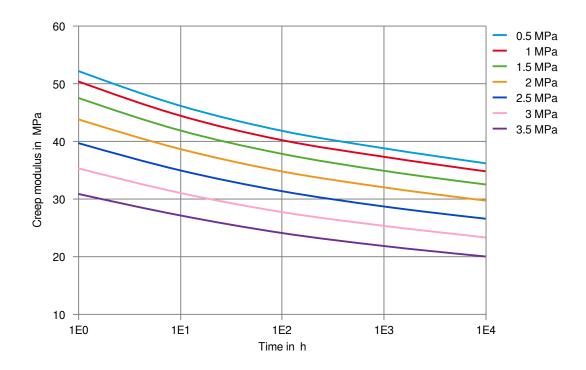
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 100°C



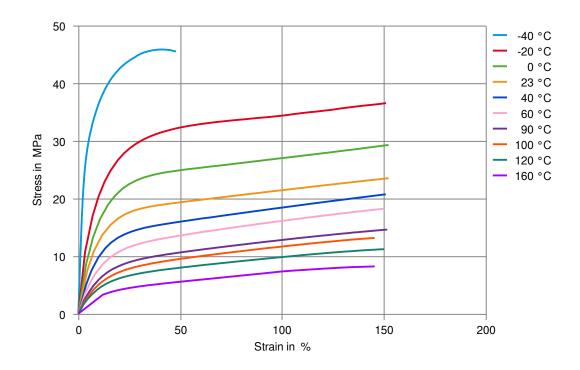
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Stress-Strain (Flexible Materials)



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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
- X Hydrochloric Acid (36% by mass), 23°C
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23°C
- ✓ Sulfuric Acid (5% by mass), 23°C
- X 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

X Acetone, 23°C

Ethers

X Diethyl ether, 23°C

Mineral oils

- ✓ SAE 10W40 multigrade motor oil, 23°C
- X 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
- X Hydraulic oil Pentosin CHF 202, 125°C

Standard Fuels

- X ISO 1817 Liquid 1 E5, 60°C
- X ISO 1817 Liquid 2 M15E4, 60°C
- X ISO 1817 Liquid 3 M3E7, 60°C
- X 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
- X Hydrogen peroxide, 23°C
- X 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).

x 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).

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Revised: 2025-04-18 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users

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