

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® 5555HS is a medium modulus Hytrel® grade, with nominal durometer hardness of 55D. It is a specially stabilized version of Hytrel® 5556 for superior heat and oil resistance properties.

#### Typical applications:

Parts with increased heat-ageing stability and oil and grease resistance such as tubing and hose, wire and cable jackets, film and sheeting, belting.

#### Precautions:

Contains a discoloring antioxidant. Not suited for light-colored finished products.

Product information			
Resin Identification	TPC-ET		ISO 1043
Part Marking Code	>TPC-ET<		ISO 11469
Rheological properties			
Melt volume-flow rate	8.5	cm <sup>3</sup> /10min	ISO 1133
Temperature	220	°C	
Load	2.16	kg	
Melt mass-flow rate	8.5	g/10min	ISO 1133
Melt mass-flow rate, Temperature	220		
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage, parallel	1.3	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.4	%	ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus	190	МРа	ISO 527-1/-2
Tensile stress at yield	15	MPa	ISO 527-1/-2
Tensile strain at yield	36	%	ISO 527-1/-2
Stress at 5% strain	6.9	MPa	ISO 527-1/-2
Stress at 10% strain	11.1	MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	14.7	MPa	ISO 527-1/-2
Tensile stress at 100% strain	16	MPa	ISO 527-1/-2
Tensile stress at break	35	MPa	ISO 527-1/-2

Printed: 2025-05-30

(+) **18816996168** Ponciplastics.com



# Hytrel<sup>®</sup> 5555HS THERMOPLASTIC POLYESTER ELASTOMER

Nominal strain at break Tensile strain at break	640 >300		ISO 527-1/-2 ISO 527-1/-2
Flexural modulus		MPa	ISO 178
Shear Modulus		MPa	ISO 6721
Tensile creep modulus, 1h		MPa	ISO 899-1
Tensile creep modulus, 1000h		MPa	ISO 899-1
Charpy impact strength, 23°C		kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, -30°C		kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -40°C		kJ/m <sup>2</sup>	ISO 179/1eA
Tensile notched impact strength, 23°C		kJ/m <sup>2</sup>	ISO 8256/1
Izod notched impact strength, -40°C	110.0 <sup>[P]</sup>		ISO 180/1A
Poisson's ratio	0.48		
Brittleness temperature	-80	°C	ISO 974
Shore D hardness, 15s	52	C	ISO 48-4 / ISO 868
Shore D hardness, max	55		ISO 868
Compression set, 70°C, 24h	60	%	ISO 815
Tear strength, parallel		kN/m	ISO 34-1
Tear strength, normal		kN/m	ISO 34-1
Abrasion resistance		mm <sup>3</sup>	ISO 4649
[P]: Partial Break	120		
Thermal properties			
Melting temperature, 10°C/min	201	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	-25	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	51	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	78	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	75	°C	ISO 306
Vicat softening temperature, 50°C/h 10N	177	°C	ISO 306
Coefficient of linear thermal expansion	180	E-6/K	ISO 11359-1/-2
(CLTE), parallel			
Coefficient of linear thermal expansion (CLTE),	180	E-6/K	ISO 11359-1/-2
normal			
Effective thermal diffusivity, flow	5.44E-8	m²/s	ISO 22007-4
RTI, electrical, 0.75mm	90	°C	UL 746B
RTI, electrical, 1.5mm	90	°C	UL 746B
RTI, electrical, 3.0mm	90	°C	UL 746B
RTI, impact, 0.75mm	50	°C	UL 746B
RTI, impact, 1.5mm	85	°C	UL 746B
RTI, impact, 3.0mm	85	°C	UL 746B
RTI, strength, 0.75mm	50	°C	UL 746B
RTI, strength, 1.5mm	85	°C	UL 746B
RTI, strength, 3.0mm	85	°C	UL 746B
TGA curve	available		ISO 11359-1/-2



Flammability Burning Behav. at 1.5mm nom. thickn. Thickness tested UL recognition Burning Behav. at thickness h Thickness tested UL recognition Oxygen index FMVSS Class	1.5 yes HB	class mm class mm %	IEC 60695-11-10 IEC 60695-11-10 UL 94 IEC 60695-11-10 IEC 60695-11-10 UL 94 ISO 4589-1/-2 ISO 3795 (FMVSS 302)
Electrical properties			
Comparative tracking index	600		IEC 60112
Physical/Other properties			
Humidity absorption, 2mm Water absorption, 2mm Water absorption, Immersion 24h Density	0.2 0.6 0.7 1190	%	Sim. to ISO 62 Sim. to ISO 62 Sim. to ISO 62 ISO 1183
VDA Properties			
Fogging, G-value (condensate) [DS]: Derived from similar grade	0.1 <sup>[DS]</sup>	mg	ISO 6452
Injection			
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Min. melt temperature Max. melt temperature Mold Temperature Optimum Min. mould temperature Max. mould temperature Ejection temperature	45	h % °C °C °C °C °C °C	
Extrusion			
Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Melt Temperature Range	90 - 110 2 - 3 ≤0.06 225 220 - 235	h % °C	





### **Characteristics**

Processing	Injection Moulding, Film Extrusion, Extrusion, Sheet Extrusion, Other Extrusion, Casting, Thermoforming
Delivery form	Pellets
Special characteristics	Light stabilised or stable to light, Heat stabilised or stable to heat

### Additional information

Injection molding

### PREPROCESSING

Drying recommended = Yes Drying temperature = 100 °C Drying time, dehumidified dryer = 2-3 h Processing moisture content = <0.08 %

## PROCESSING

Melt temperature optimum = 230 °C Mold temperature optimum = 45 °C Mold temperature range = 45-55 °C

### Profile extrusion

## PREPROCESSING

Drying temperature =  $100 \degree C$ Drying time, dehumidified dryer = 2-3 h Processing moisture content = <0.06%

## PROCESSING

Melt temperature optimum = 225 °C

## Automotive

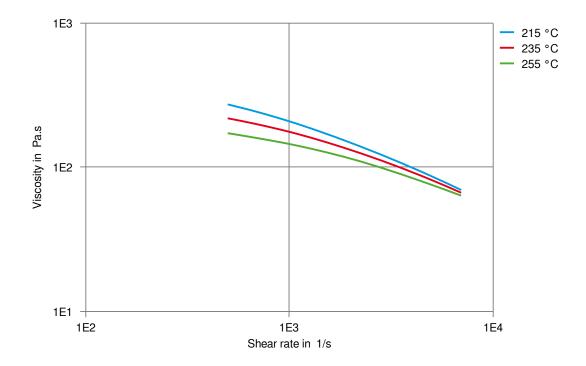
OEM	STANDARD	ADDITIONAL INFORMATION
Bosch	N28 BN34-OX036	
General Motors	GMW17327P-TPC-ET-Type 3M2H	
Mercedes-Benz	DBL5562.50 TPC	
Stellantis - Chrysler	MS-DB-448 / CPN-2576	Natural
Stellantis - Chrysler	MS-DB-448 / CPN-2749	Canod
Stellantis - Chrysler	MS-DB-448 / CPN-2910	Black
VW Group	VW 50123	

Printed: 2025-05-30





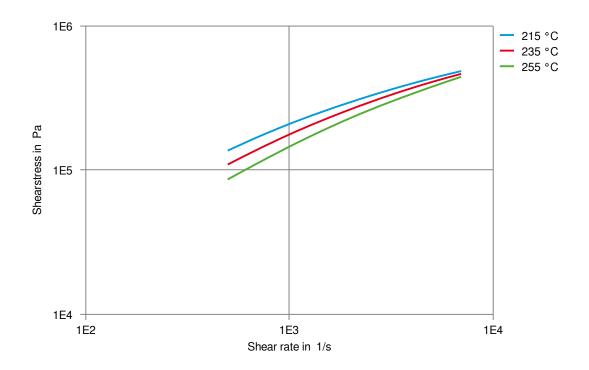
Viscosity-shear rate







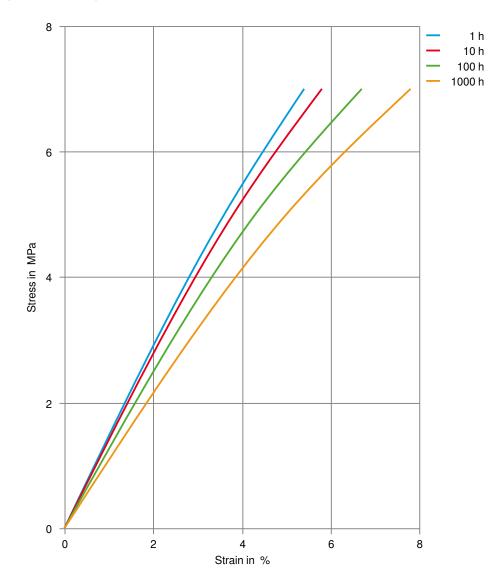
Shearstress-shear rate







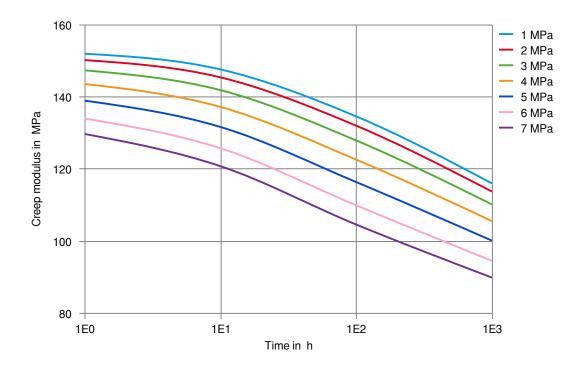
## Stress-strain (isochronous) 23°C







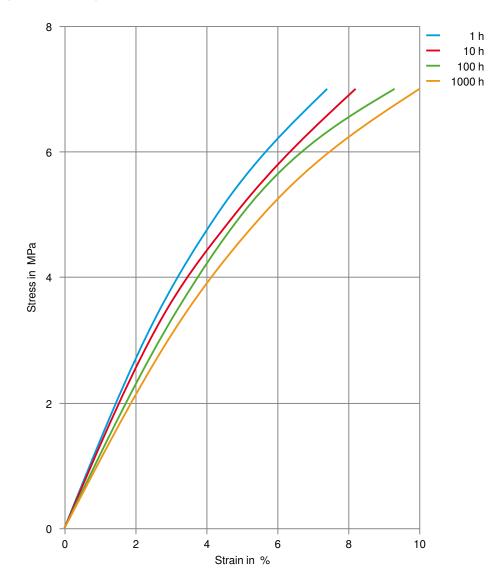
Creep modulus-time 23°C







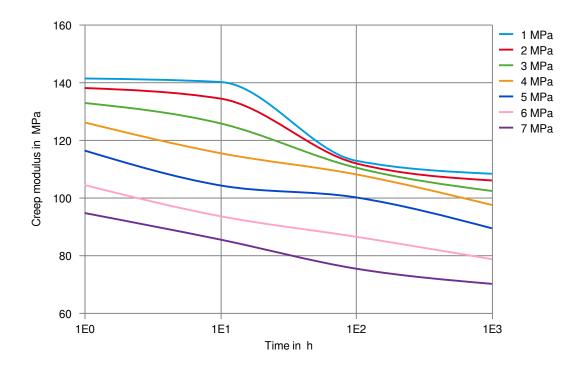
## Stress-strain (isochronous) 40°C







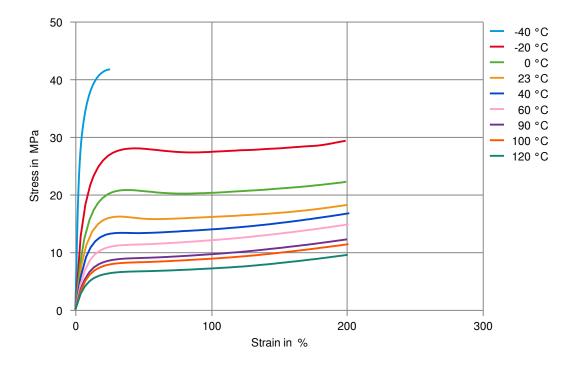
Creep modulus-time 40°C







Stress-Strain (Flexible Materials)







## **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
- X Nitric Acid (40% by mass), 23°C
- X 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

X Acetone, 23°C

### Ethers

X 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
- X Automatic hypoid-gear oil Shell Donax TX, 135°C
- ✓ 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
- ¥ 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

Printed: 2025-05-30





#### 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
- ✓ 50% Oleic acid + 50% Olive Oil, 23°C
- ✓ Water, 23°C
- ✓ Water, 90°C
- Phenol solution (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).

Printed: 2025-05-30

Page: 13 of 13

Revised: 2025-04-17 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 cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those product 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 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 the lowest that texist. 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 seek and adhere to the manufact

© 2025 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC.