



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® 5526 is a medium modulus Hytrel® grade with nominal durometer hardness of 55D. It contains non-discoloring stabilizer. It is specially recommended for injection molding applications requiring high flow properties.

Typical applications:

Seals, packing and gaskets; gears and bearings.

Product information

TPC-ET >TPC-ET<		ISO 1043 ISO 11469
18	cm ³ /10min	ISO 1133
220	_	
	-	
	_	ISO 1133
	-	
	•	
		ISO 294-4, 2577
1.4	%	ISO 294-4, 2577
190	MPa	ISO 527-1/-2
15	MPa	ISO 527-1/-2
35	%	ISO 527-1/-2
6.9	MPa	ISO 527-1/-2
11	MPa	ISO 527-1/-2
14	MPa	ISO 527-1/-2
40	MPa	ISO 527-1/-2
780	%	ISO 527-1/-2
>300	%	ISO 527-1/-2
200	MPa	ISO 178
65	MPa	ISO 6721
	>TPC-ET< 18 220 2.16 18 220 2.16 1.4 1.4 1.4 190 15 35 6.9 11 14 40 780 >300 200	>TPC-ET< 18 cm³/10min

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Tensile creep modulus, 1h	170	MPa	ISO 899-1
Tensile creep modulus, 1000h		MPa	ISO 899-1
Charpy impact strength, 23°C	N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30 °C	N	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C		kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C		kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40 °C		kJ/m²	ISO 179/1eA
Tensile notched impact strength, 23°C		kJ/m²	ISO 8256/1
Izod notched impact strength, -40 °C		kJ/m²	ISO 180/1A
Poisson's ratio	0.48	1.07111	100 100/1/1
Brittleness temperature		°C	ISO 974
Shore D hardness, 15s	51	J	ISO 48-4 / ISO 868
Shore D hardness, max	55		ISO 868
Tear strength, parallel		kN/m	ISO 34-1
Tear strength, normal		kN/m	ISO 34-1
Abrasion resistance		mm ³	ISO 4649
	120	111111	130 4043
[P]: Partial Break			
Thermal properties			
Melting temperature, 10°C/min	203	°C	ISO 11357-1/-3
Glass transition temperature, 1 Hz		°C	ISO 6721
Temperature of deflection under load, 1.8 MPa		°C	ISO 75-1/-2
Temperature of deflection under load, 1.6 MPa		°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N		°C	ISO 306
Vicat softening temperature, 50° C/h 10N	180		ISO 306
- · · · · · · · · · · · · · · · · · · ·		E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C			
Coefficient of linear thermal expansion	200	E-6/K	ISO 11359-1/-2
(CLTE), parallel	170	F 0/1/	100 11000 1/0
Coeff. of linear therm. expansion, normal, -40-23°C		E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE),	200	E-6/K	ISO 11359-1/-2
normal	0.40	14/// 12)	100 00007 0
Thermal conductivity of melt		W/(m K)	ISO 22007-2
Effective thermal diffusivity, flow		m ² /s	ISO 22007-4
Specific heat capacity of melt		J/(kg K)	ISO 22007-4
RTI, electrical, 1.5mm		°C	UL 746B
RTI, electrical, 3.0mm		°C	UL 746B
RTI, impact, 1.5mm		°C	UL 746B
RTI, impact, 3.0mm		°C	UL 746B
RTI, strength, 1.5mm	_	°C	UL 746B
RTI, strength, 3.0mm	80	°C	UL 746B
Flammability			
Burning Behav. at 1.5mm nom. thickn.	НВ	class	IEC 60695-11-10
Thickness tested		mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	•	class	IEC 60695-11-10
Thickness tested		mm	IEC 60695-11-10
UL recognition	yes		UL 94
Oxygen index	21	%	ISO 4589-1/-2
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FMVSS Class Burning rate, Thickness 1 mm	SE/B 28	mm/min	ISO 3795 (FMVSS 302) ISO 3795 (FMVSS 302)
Electrical properties			
Relative permittivity, 100Hz Relative permittivity, 1MHz Dissipation factor, 100Hz Dissipation factor, 1MHz Volume resistivity Surface resistivity Electric strength Comparative tracking index	375 4E11 >1E15	E-4 E-4 Ohm.m	IEC 62631-2-1 IEC 62631-2-1 IEC 62631-2-1 IEC 62631-3-1 IEC 62631-3-2 IEC 60243-1 IEC 60112
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 Fogging, G-value (condensate)		class mg	VDA 270 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 55	°C h % °C °C	
Characteristics			

Characteristics

Processing Injection Moulding, Thermoforming

Delivery form Pellets

Special characteristics Light stabilised or stable to light

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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 Melt temperature range = 220-250 ° C Mold temperature optimum = 45 ° C Mold temperature range = 45-55 ° C

Natural

Automotive

OEM STANDARD ADDITIONAL INFORMATION

General Motors GMW17327P-TPC-ET-Type 3M1

Hyundai MS220-24 Type D

Mercedes-Benz DBL5562 AA39 TPC

Mercedes-Benz DBL5562.50 TPC-ET

Stellantis - Chrysler MS-DB-448 / CPN-2313

Stellantis - Chrysler MS-DB-448 / CPN-2313 Black
Stellantis - Chrysler MS-DB-448 / CPN-4477 Natural
Stellantis - Chrysler MS-DB-448 / CPN-4843 Natural

VW Group VW 50123

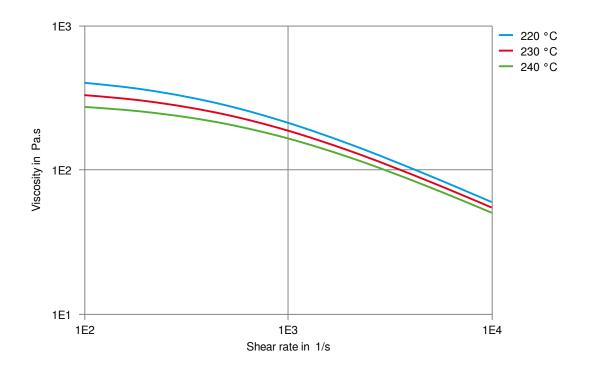
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Viscosity-shear rate



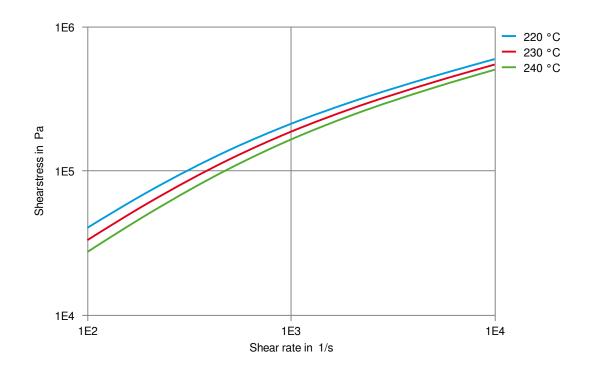
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Hytrel® 5526 THERMOPLASTIC POLYESTER ELASTOMER

Shearstress-shear rate



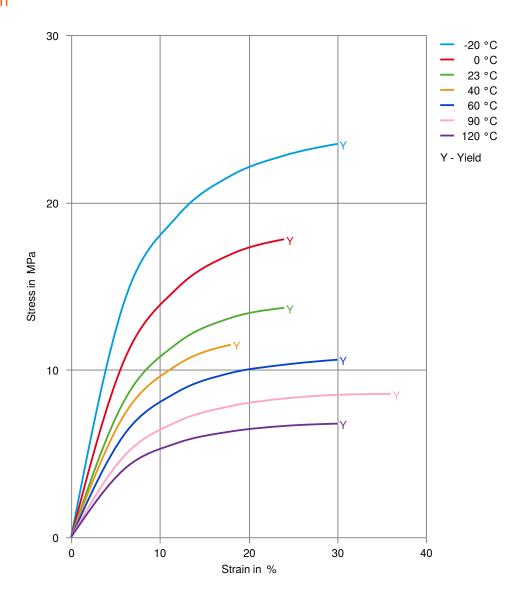
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Stress-strain



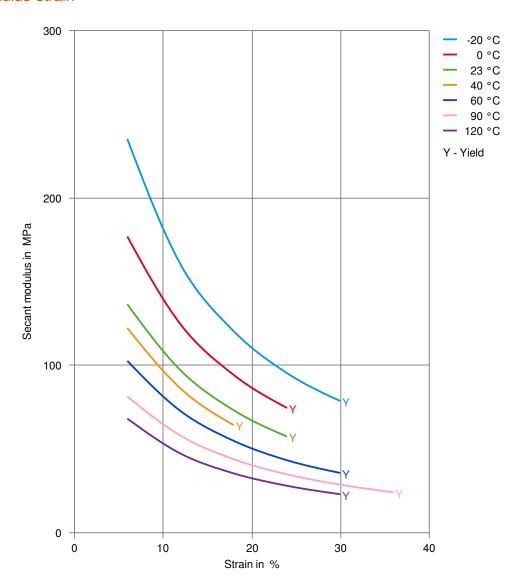
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Secant modulus-strain



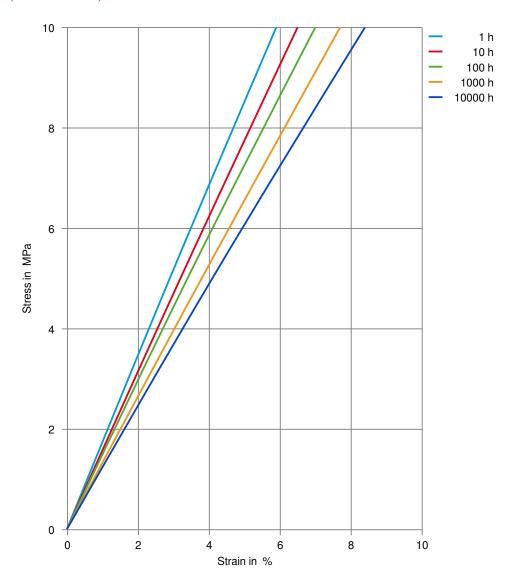
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Stress-strain (isochronous) 23°C



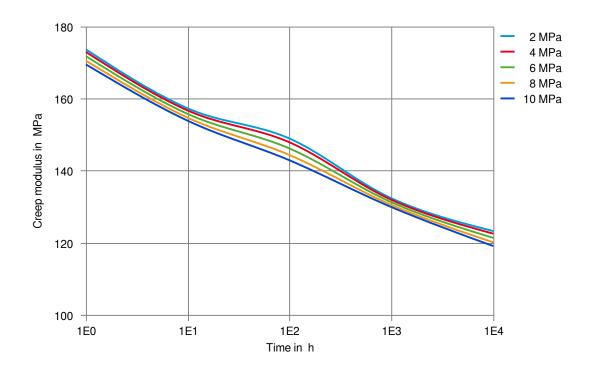
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 23°C



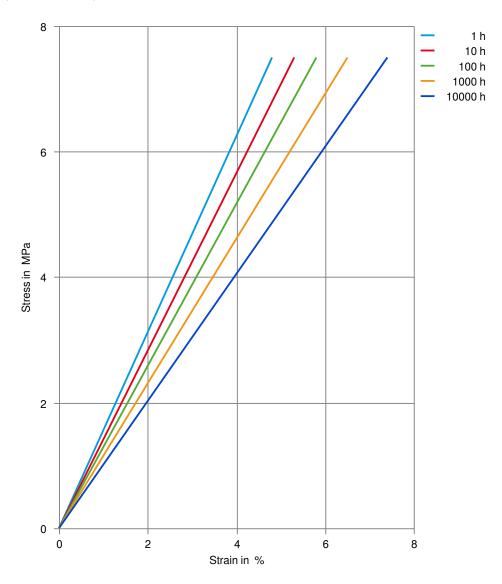
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THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 40°C



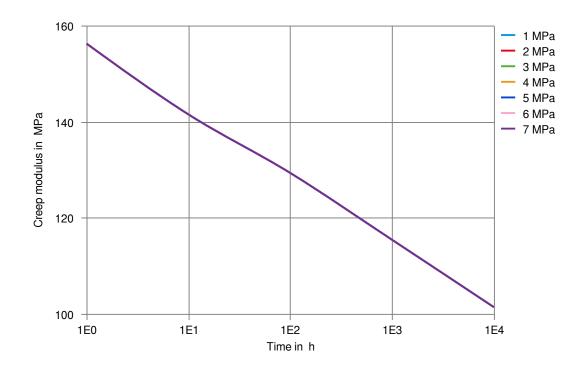
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 40°C



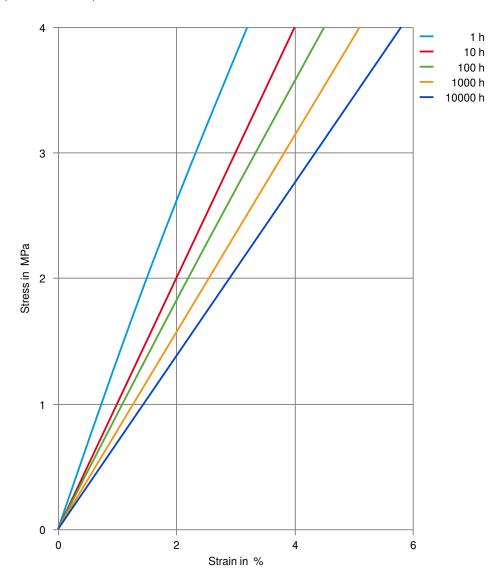
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Stress-strain (isochronous) 90°C



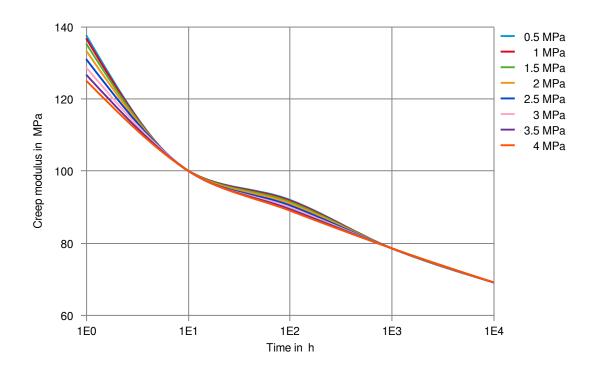
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 90°C



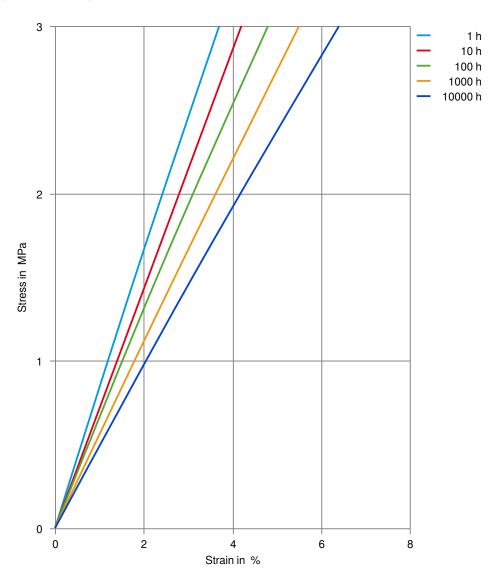
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Stress-strain (isochronous) 110°C



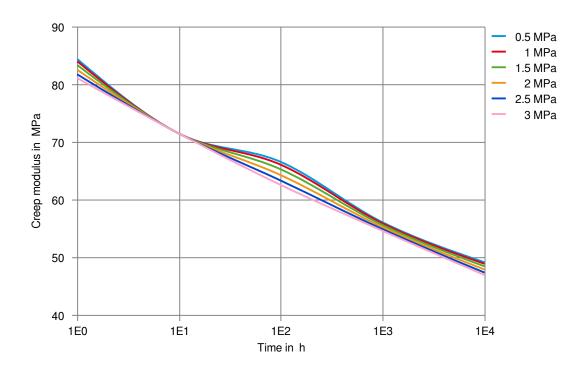
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THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 110°C



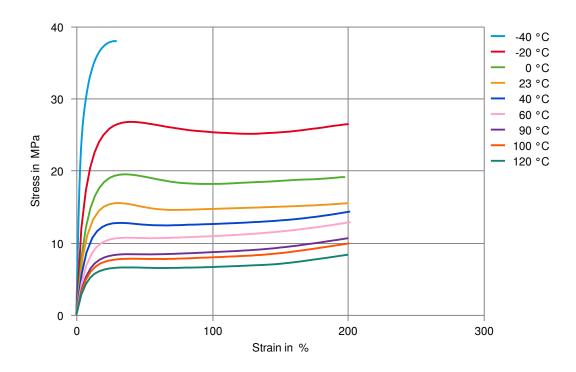
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Stress-Strain (Flexible Materials)



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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
- X 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
- ➤ 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).

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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