



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® G5544 is a medium modulus grade with nominal hardness of 55D. It contains discoloring stabilizer. It can be processed by many conventional thermoplastic processing techniques like injection molding and extrusion.

Typical applications:

Hose and tubing, profiles, moulded and extruded consumer products. 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	10	cm ³ /10min	ISO 1133
Temperature	230	°C	
Load	2.16	kg	
Melt mass-flow rate	10	g/10min	ISO 1133
Melt mass-flow rate, Temperature	230	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage, parallel	1.6	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.6	%	ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus	200	MPa	ISO 527-1/-2
Stress at 5% strain	8.1	MPa	ISO 527-1/-2
Stress at 10% strain	11	MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	9	MPa	ISO 527-1/-2
Tensile stress at break	33	MPa	ISO 527-1/-2
Nominal strain at break	290	%	ISO 527-1/-2
Tensile strain at break	>300	%	ISO 527-1/-2
Flexural modulus	190	MPa	ISO 178
Shear Modulus	65	MPa	ISO 6721
Tensile creep modulus, 1h	110	MPa	ISO 899-1
Tensile creep modulus, 1000h		MPa	ISO 899-1
Charpy impact strength, 23°C	N	kJ/m²	ISO 179/1eU

Printed: 2025-05-30 Page: 1 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Charpy notched impact strength, 23°C Charpy notched impact strength, -30°C Charpy notched impact strength, -40°C Tensile notched impact strength, 23°C Izod notched impact strength, 23°C Izod notched impact strength, -40°C Brittleness temperature Shore D hardness, 15s Shore D hardness, max Tear strength, parallel Tear strength, normal [P]: Partial Break	45 14 285 64 27.0 -61 52 56 120	kJ/m² kJ/m² kJ/m² kJ/m² kJ/m² kJ/m² c kJ/m²	ISO 179/1eA ISO 179/1eA ISO 179/1eA ISO 8256/1 ISO 180/1A ISO 180/1A ISO 974 ISO 48-4 / ISO 868 ISO 34-1 ISO 34-1
Thermal properties			
Melting temperature, 10°C/min	214	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	-35	°C	ISO 11357-1/-3
Temperature of deflection under load, 0.45 MPa	77	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 10N	190		ISO 306
Coeff. of linear therm. expansion, parallel, -40-23°C		E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion	210	E-6/K	ISO 11359-1/-2
(CLTE), parallel			
Coeff. of linear therm. expansion, normal, -40-23°C		E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	180	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.15	W/(m K)	ISO 22007-2
Effective thermal diffusivity, flow	5.44E-8	m²/s	ISO 22007-4
Specific heat capacity of melt		J/(kg K)	ISO 22007-4
RTI, electrical, 0.75mm		°C	UL 746B
RTI, electrical, 1.5mm		°C	UL 746B
RTI, electrical, 3.0mm		°C	UL 746B
RTI, impact, 0.75mm		°C	UL 746B
RTI, impact, 1.5mm		°C	UL 746B
RTI, impact, 3.0mm		°C	UL 746B
RTI, strength, 0.75mm		°C	UL 746B
RTI, strength, 1.5mm		°C	UL 746B
RTI, strength, 3.0mm		°C	UL 746B
TGA curve	available		ISO 11359-1/-2
Flammability			
Burning Behav. at 1.5mm nom. thickn.	НВ	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
III. was a switters			111.04

Burning Behav. at 1.5mm nom. thickn.	НВ	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	3	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Oxygen index	19	%	ISO 4589-1/-2
FMVSS Class	В		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	25	mm/min	ISO 3795 (FMVSS 302)

Printed: 2025-05-30 Page: 2 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Е	lectr	ical	pro	pper	ties
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Relative permittivity, 100Hz	5		IEC 62631-2-1
Relative permittivity, 1MHz	4.5		IEC 62631-2-1
Dissipation factor, 100Hz	200	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	400	E-4	IEC 62631-2-1
Volume resistivity	3E10	Ohm.m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	19	kV/mm	IEC 60243-1
Comparative tracking index	600 ^[1]		IEC 60112
Comparative tracking index, 3.0mm	0	PLC	UL 746A
[1]: Thickness = 3.0mm			

[1]. Triiotatioco = 6.611iiii

Physical/Other properties

Humidity absorption, 2mm	0.4 %	Sim. to ISO 62
Water absorption, 2mm	2.2 %	Sim. to ISO 62
Water absorption, Immersion 24h	1.6 %	Sim. to ISO 62
Density	1220 kg/m ³	ISO 1183
Density of melt	1050 kg/m ³	

VDA Properties

Emission of organic compounds	26 μgC/g	VDA 277
Odour	3 class	VDA 270
Fogging, G-value (condensate)	0.1 mg	ISO 6452

Injection

Drying Recommended	yes
Drying Temperature	100 °C
Drying Time, Dehumidified Dryer	2-3 h
Processing Moisture Content	≤0.08 %
Melt Temperature Optimum	240 °C
Min. melt temperature	235 °C
Max. melt temperature	260 °C
Mold Temperature Optimum	45 °C
Min. mould temperature	25 °C
Max. mould temperature	50 °C
Ejection temperature	144 °C

Extrusion

Drying Temperature	100	$^{\circ}\text{C}$
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	230	°C
Melt Temperature Range	230 - 245	°C

Printed: 2025-05-30 Page: 3 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Characteristics

Processing Injection Moulding, Film Extrusion, Extrusion, Sheet Extrusion, Other Extrusion,

Casting, Thermoforming

Delivery form Pellets

Special characteristics Heat stabilised or stable to heat

Automotive

OEM STANDARD ADDITIONAL INFORMATION

Renault-Nissan EP04, No Spec, Special Part Approval, See

Your CE Account Manager.

Stellantis - Chrysler MS-DB-448 / CPN-3041 Natural Stellantis - Chrysler MS-DB-448 / CPN-3356 Black

Stellantis - Chrysler MS-DB-448 / CPN-4038 Blended with DX9 Color Match Concentrate

VW Group VW 50123

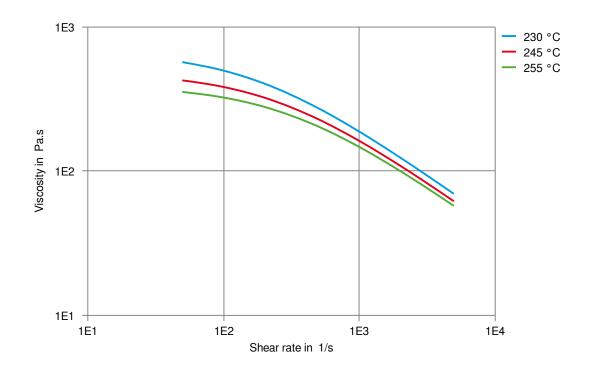
Printed: 2025-05-30 Page: 4 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Viscosity-shear rate



Printed: 2025-05-30 Page: 5 of 15

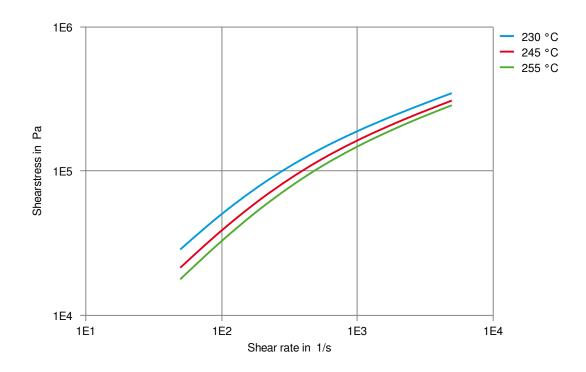




Hytrel[®] G5544

THERMOPLASTIC POLYESTER ELASTOMER

Shearstress-shear rate



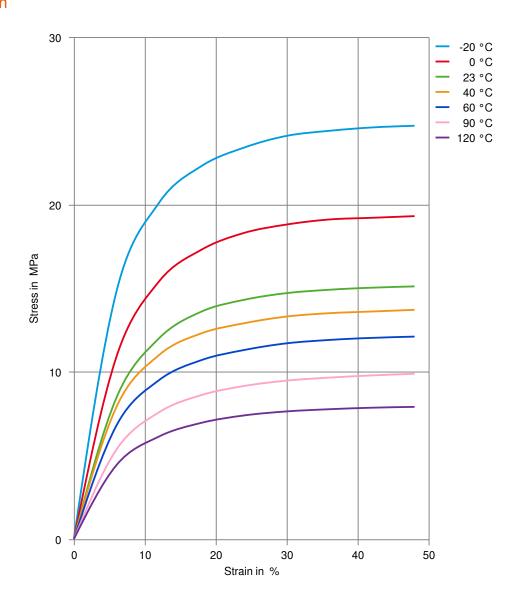
Printed: 2025-05-30 Page: 6 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain



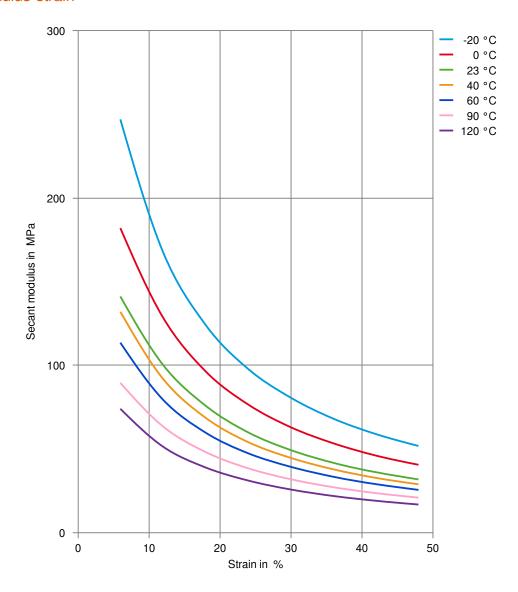
Printed: 2025-05-30 Page: 7 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Secant modulus-strain



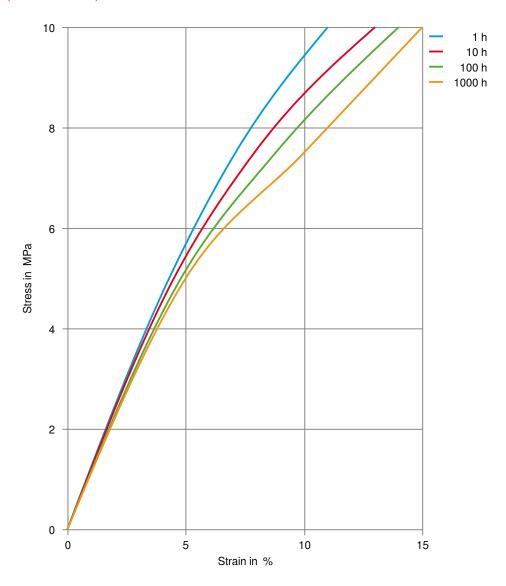
Printed: 2025-05-30 Page: 8 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 23°C



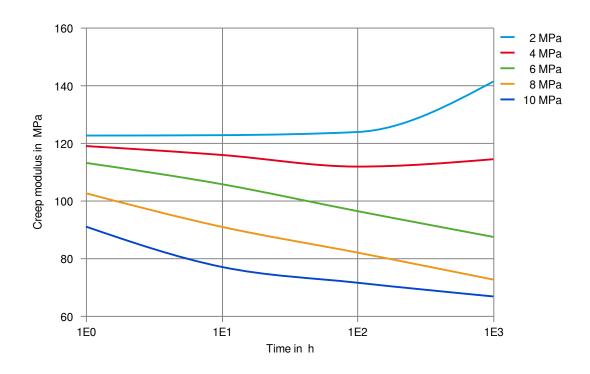
Printed: 2025-05-30 Page: 9 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 23°C



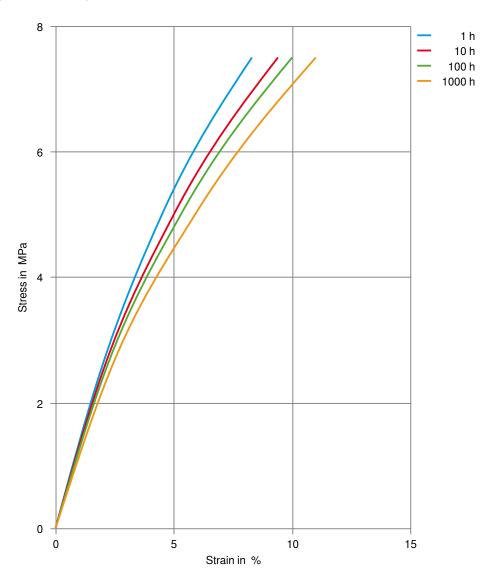
Printed: 2025-05-30 Page: 10 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 40°C



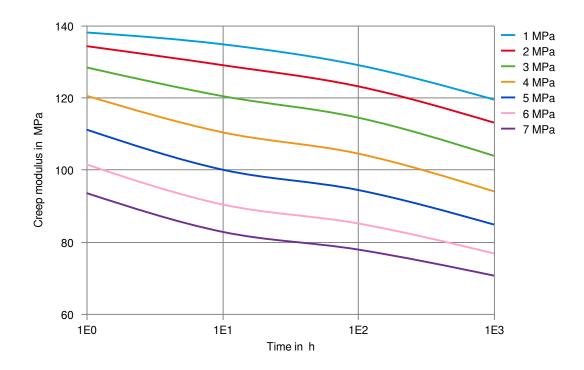
Printed: 2025-05-30 Page: 11 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 40°C



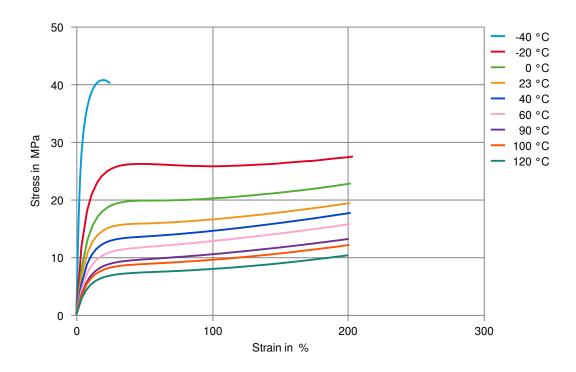
Printed: 2025-05-30 Page: 12 of 15





THERMOPLASTIC POLYESTER ELASTOMER

Stress-Strain (Flexible Materials)



Printed: 2025-05-30 Page: 13 of 15

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Hytrel® G5544

THERMOPLASTIC POLYESTER ELASTOMER

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

- X 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
- X 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
- X SAE 80/90 hypoid-gear oil, 130 °C
- ✓ Insulating Oil, 23°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

Salt solutions

- ✓ Sodium Chloride solution (10% by mass), 23°C
- ★ Sodium Hypochlorite solution (10% by mass), 23°C

Printed: 2025-05-30 Page: 14 of 15





THERMOPLASTIC POLYESTER ELASTOMER

- ✓ 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
- √ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23°C
- ✓ 50% Oleic acid + 50% Olive Oil, 23°C
- ✓ Water. 23°C
- X 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).

Printed: 2025-05-30 Page: 15 of 15

Revised: 2025-04-30 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 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 e

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