



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® 8238 is the highest modulus grade, with nominal hardness of 82D. It contains non-discoloring stabilizer. It can be processed by many conventional thermoplastic processing techniques like injection molding and extrusion.

Typical applications:

Cubing, wire and cable, gears, sprockets, electrical connectors and oil field parts.

Product information

	TPC-ET PC-ET<	ISO 1043 ISO 11469
Part Marking Code >TF	-G-E1<	150 11469
Rheological properties		
Melt volume-flow rate	12 cm ³ /10min	ISO 1133
Temperature	240 °C	
Load	2.16 kg	
Melt mass-flow rate	12 g/10min	ISO 1133
Melt mass-flow rate, Temperature	240 °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	1200 MPa	ISO 527-1/-2
Tensile stress at yield	38 MPa	ISO 527-1/-2
Tensile strain at yield	19 %	ISO 527-1/-2
Stress at 10% strain	34 MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	28 MPa	ISO 527-1/-2
Tensile stress at 100% strain	26 MPa	ISO 527-1/-2
Tensile stress at break	46 MPa	ISO 527-1/-2
Nominal strain at break	340 %	ISO 527-1/-2
Tensile strain at break	>300 %	ISO 527-1/-2
Flexural modulus	1150 MPa	ISO 178
Flexural strength	35 MPa	ISO 178
Charpy notched impact strength, 23°C	10 kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	5 kJ/m²	ISO 179/1eA

Printed: 2025-05-30 Page: 1 of 11





THERMOPLASTIC POLYESTER ELASTOMER

Charpy notched impact strength, -40°C Tensile notched impact strength, 23°C Izod notched impact strength, 23°C Izod notched impact strength, -40°C Poisson's ratio Brittleness temperature Shore D hardness, 15s Shore D hardness, max Tear strength, parallel Tear strength, normal	57 11 5.5 0.44 -84 70 76 230	kJ/m² kJ/m² kJ/m² kJ/m² °C	ISO 179/1eA ISO 8256/1 ISO 180/1A ISO 180/1A ISO 974 ISO 48-4 / ISO 868 ISO 868 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 50N Vicat softening temperature, 50°C/h 10N Coeff. of linear therm. expansion, parallel, -40-23°C Coefficient of linear thermal expansion (CLTE), parallel	45 105 150 213 90 150	°C °C °C °C °C E-6/K E-6/K	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 75-1/-2 ISO 306 ISO 306 ISO 11359-1/-2 ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C		E-6/K	ISO 11359-1/-2 ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal Thermal conductivity of melt Effective thermal diffusivity, flow Specific heat capacity of melt RTI, electrical, 0.75mm RTI, electrical, 1.5mm RTI, electrical, 3.0mm RTI, impact, 0.75mm RTI, impact, 1.5mm RTI, impact, 3.0mm RTI, strength, 0.75mm RTI, strength, 1.5mm RTI, strength, 3.0mm RTI, strength, 3.0mm TGA curve Flammability	0.15 5.44E-8 2150 50 90 90 50 85 85 50	E-6/K W/(m K) m²/s J/(kg K) ° C ° C ° C ° C ° C ° C ° C °	ISO 11359-1/-2 ISO 22007-2 ISO 22007-4 ISO 22007-4 UL 746B
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		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)

Printed: 2025-05-30 Page: 2 of 11





THERMOPLASTIC POLYESTER ELASTOMER

Electrical properties

Relative permittivity, 100Hz	4		IEC 62631-2-1
Relative permittivity, 1MHz	3.7		IEC 62631-2-1
Dissipation factor, 100Hz	100	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	175	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	21	kV/mm	IEC 60243-1
Comparative tracking index	600		IEC 60112

Physical/Other properties

Humidity absorption, 2mm	0.2 %	Sim. to ISO 62
Water absorption, 2mm	0.6 %	Sim. to ISO 62
Water absorption, Immersion 24h	0.3 %	Sim. to ISO 62
Density	1280 kg/m ³	ISO 1183
Density of melt	1130 kg/m ³	

VDA Properties

Emission of organic compounds	550 μgC/g	VDA 277
Litilogicii di digariic compoundo	330 µq0/q	107211

Injection

Drying Recommended	yes	
Drying Temperature	110	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.08	%
Melt Temperature Optimum	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°C
Mold Temperature Optimum	50	°C
Min. mould temperature	45	°C
Max. mould temperature	55	°C
Hold pressure range	≤70	MPa
Ejection temperature	159	°C

Extrusion

Drying Temperature	100 - 120	°С
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Range	235 - 250	°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

Printed: 2025-05-30 Page: 3 of 11





THERMOPLASTIC POLYESTER ELASTOMER

Automotive

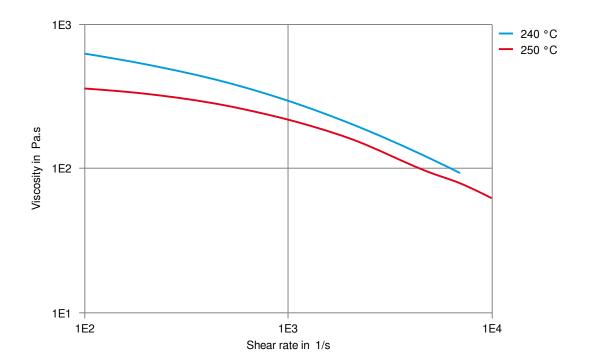
OEM STANDARD ADDITIONAL INFORMATION

General Motors GMW17327P-TPC-ET-Type 6

Mercedes-Benz DBL5562.50 TPC

Stellantis - Chrysler MS-DB-448 / CPN-3831 Natural

Viscosity-shear rate



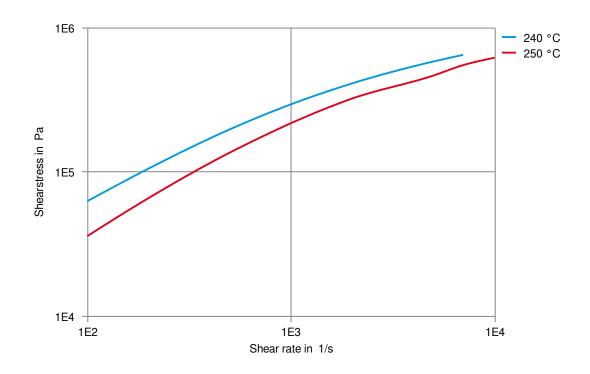
Printed: 2025-05-30 Page: 4 of 11





Hytrel® 8238 THERMOPLASTIC POLYESTER ELASTOMER

Shearstress-shear rate



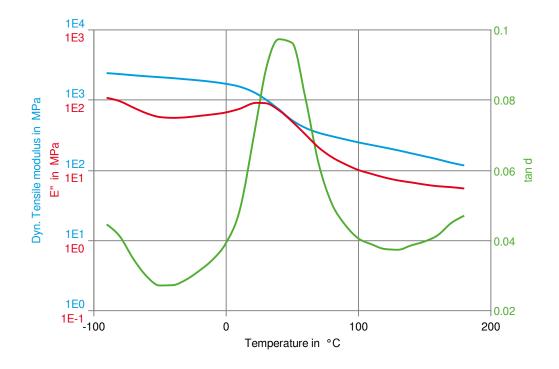
Printed: 2025-05-30 Page: 5 of 11





Hytrel® 8238 THERMOPLASTIC POLYESTER ELASTOMER

Dynamic Tensile modulus-temperature



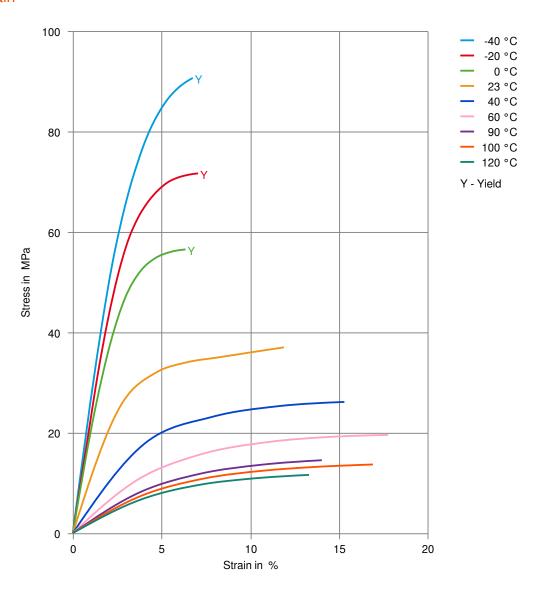
Printed: 2025-05-30 Page: 6 of 11





THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain



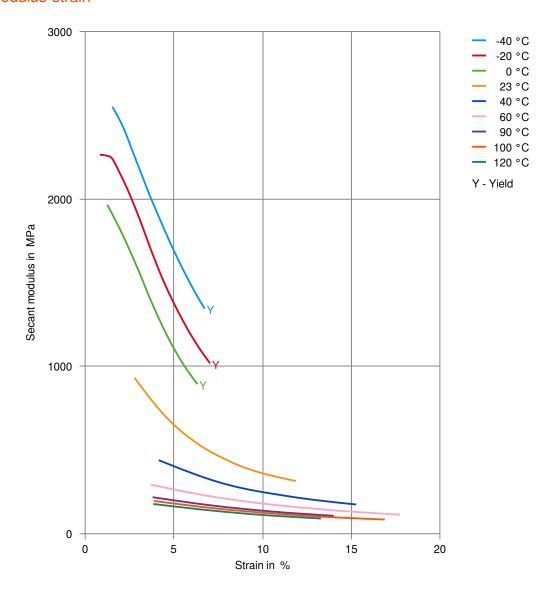
Printed: 2025-05-30 Page: 7 of 11





THERMOPLASTIC POLYESTER ELASTOMER

Secant modulus-strain



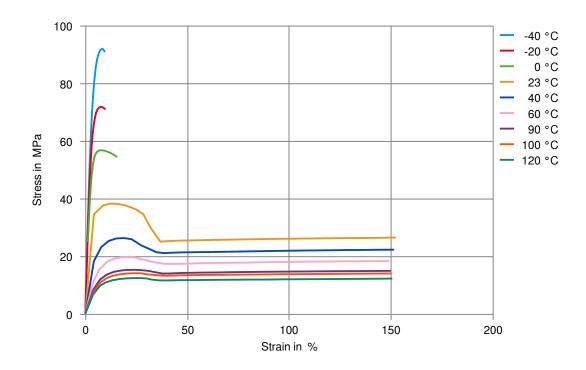
Printed: 2025-05-30 Page: 8 of 11





THERMOPLASTIC POLYESTER ELASTOMER

Stress-Strain (Flexible Materials)



Printed: 2025-05-30 Page: 9 of 11

(+) 18816996168 Ponciplastics.com



Hytrel® 8238

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

- ✓ 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
- 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: 10 of 11





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
- 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
- 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: 11 of 11

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 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

© 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.