Celanese
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Hytrel® 7246HS NC010

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® 7246HS NC010 is a high modulus, heat stabilized grade with nominal hardness of 72D.

Typical applications:
Tubing, wire and cable jackets, gears and sprockets, oil field parts.

Product information

Resin Identification	TPC-ET	ISO 1043
Part Marking Code	>TPC-ET<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	1.6 %	ISO 294-4, 2577
Moulding shrinkage, normal	1.6 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	480 MPa	ISO 527-1/-2
Tensile stress at yield	30 MPa	ISO 527-1/-2
Tensile strain at yield	22 %	ISO 527-1/-2
Stress at 10% strain	23 MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	24 MPa	ISO 527-1/-2
Tensile stress at break	50 MPa	ISO 527-1/-2
Nominal strain at break	550 %	ISO 527-1/-2
Tensile strain at break	>300 %	ISO 527-1/-2
Flexural modulus	500 MPa	ISO 178
Charpy notched impact strength, 23°C	35 kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	4 kJ/m²	ISO 179/1eA
Poisson's ratio	0.47	
Brittleness temperature	-67 °C	ISO 974
Shore D hardness, 15s	64	ISO 48-4 / ISO 868
Shore D hardness, max	70	ISO 868
Tear strength, parallel	180 kN/m	ISO 34-1
Tear strength, normal	160 kN/m	ISO 34-1

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Thermal properties

Melting temperature, 10°C/min	216	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	25	°C	ISO 11357-1/-3
Vicat softening temperature, 50°C/h 10N	205	°C	ISO 306

Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

Physical/Other properties

Density	1250	kg/m³	ISO 1183

VDA Properties

Emission of organic compounds	280	µgC/g	VDA 277

Injection

Drying Recommended	yes	
Drying Temperature	110	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.08	%
Melt Temperature Optimum	245	°C
Min. melt temperature	235	°C
Max. melt temperature	260	°C
Mold Temperature Optimum	45	°C
Min. mould temperature	45	°C
Max. mould temperature	55	°C
Hold pressure range	≤70	MPa

Extrusion

Drying Temperature	100 - 120	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Range	225 - 245	°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

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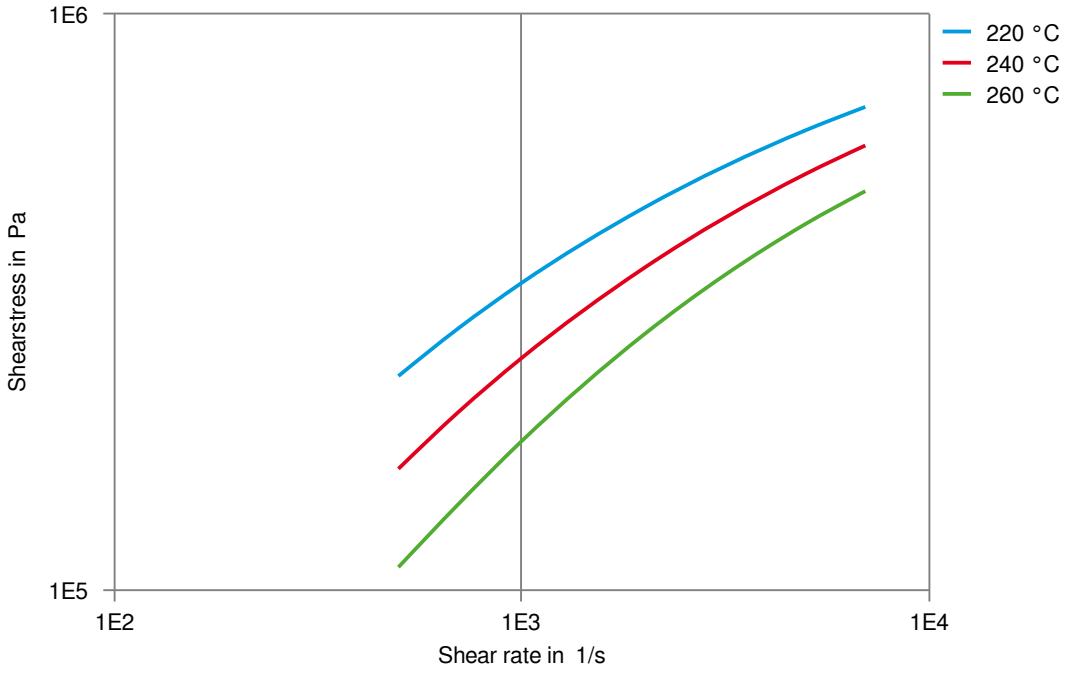
Automotive

OEM	STANDARD
VW Group	VW 50123 TPC-ET

Shearstress-shear rate



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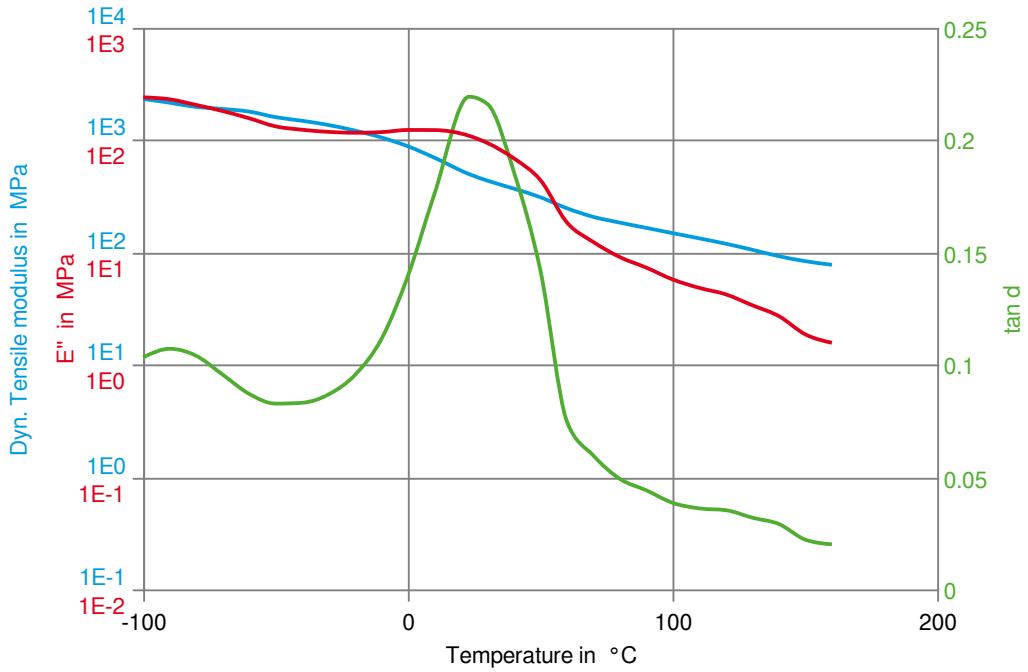
THERMOPLASTIC POLYESTER ELASTOMER

Dynamic Tensile modulus-temperature (measured on Hytrel® 7246)



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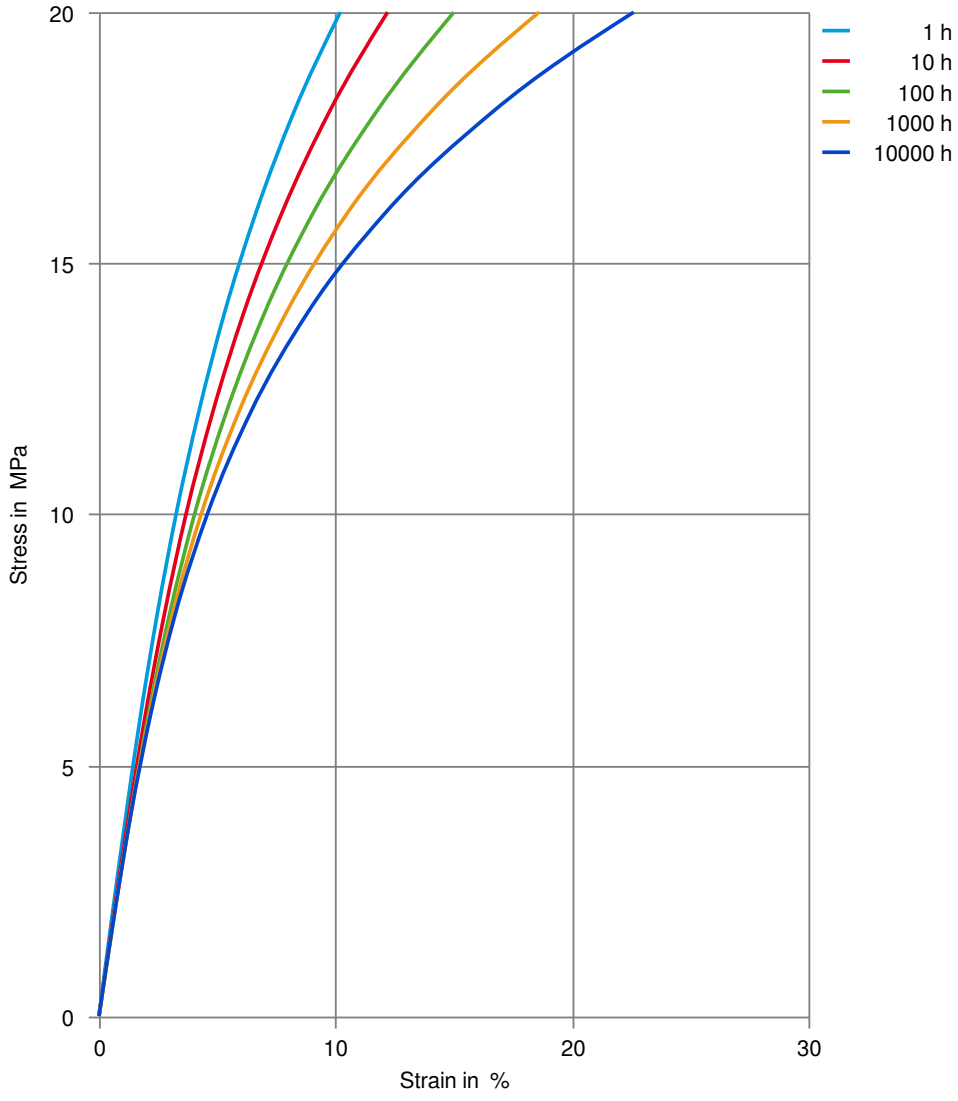
THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 23 °C



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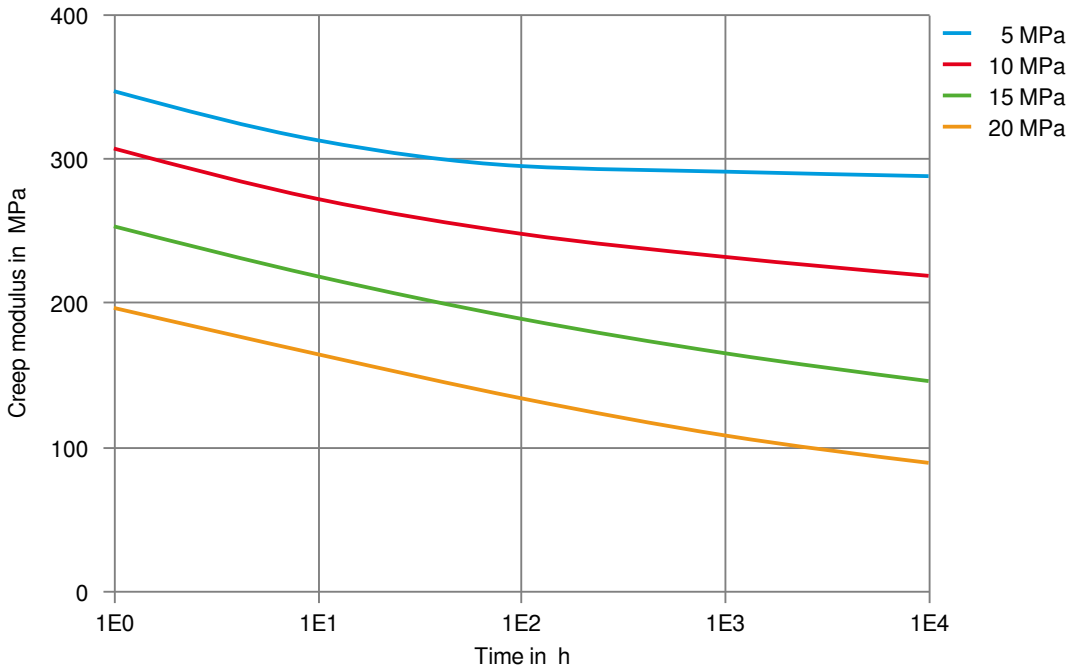
THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 23 °C



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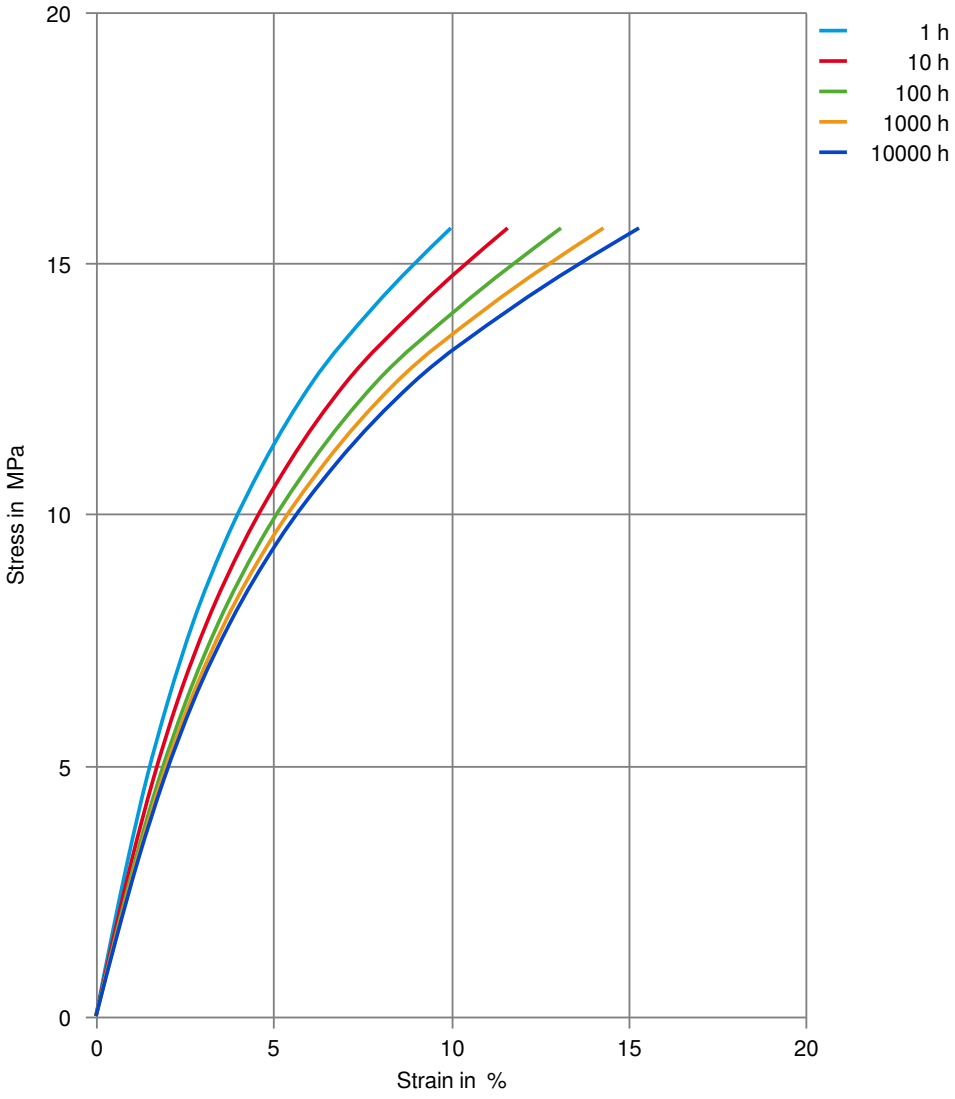
THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 40 °C



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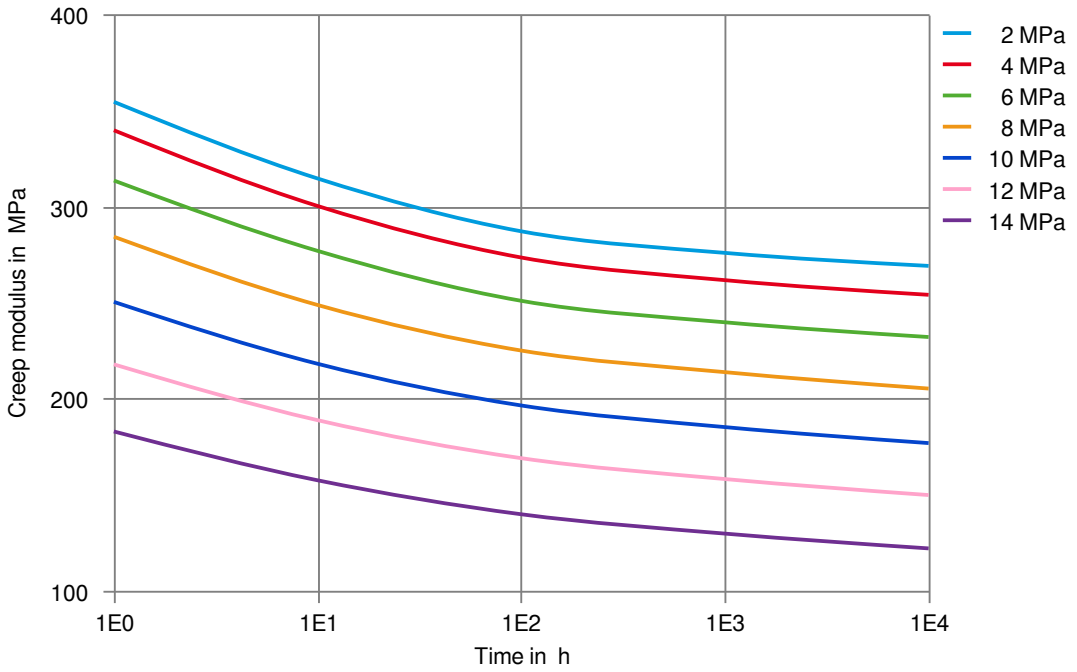
THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 40 °C



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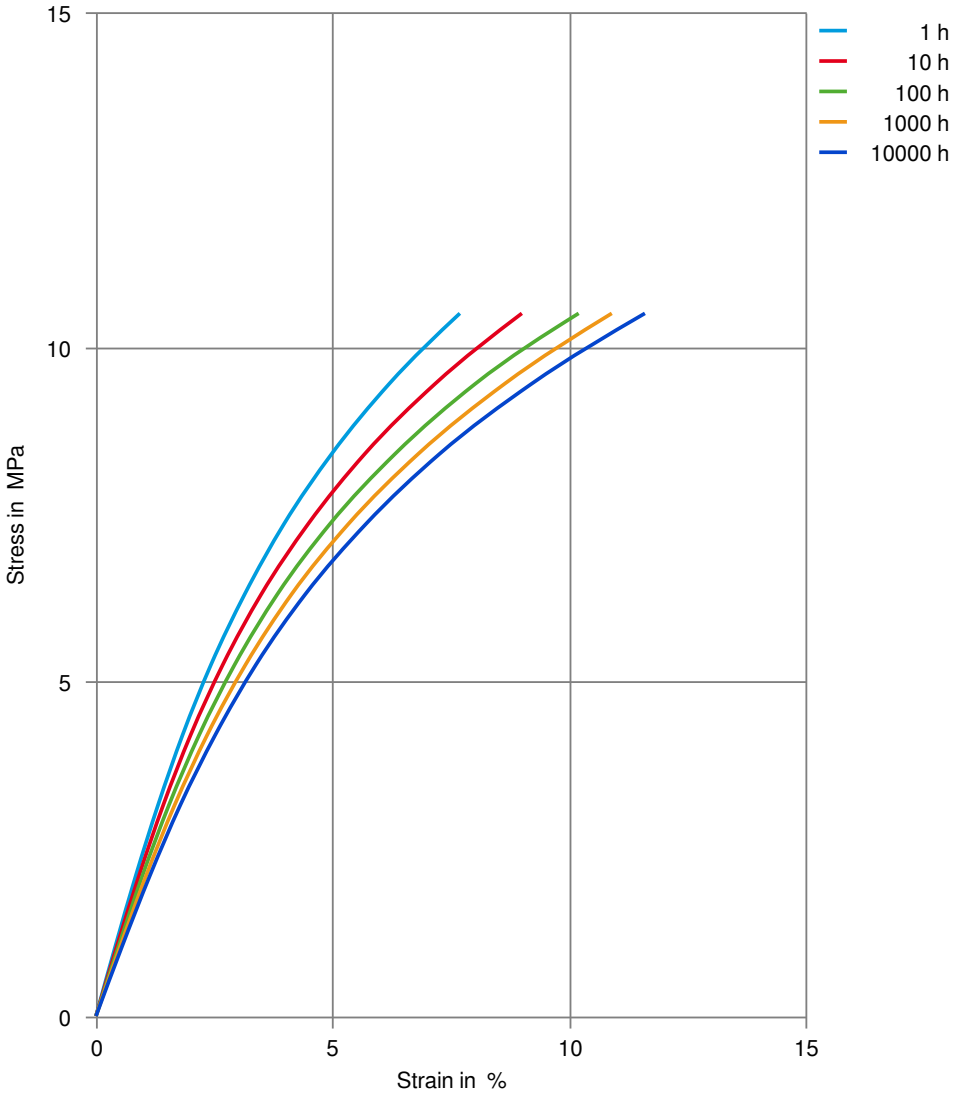
THERMOPLASTIC POLYESTER ELASTOMER

Stress-strain (isochronous) 80 °C



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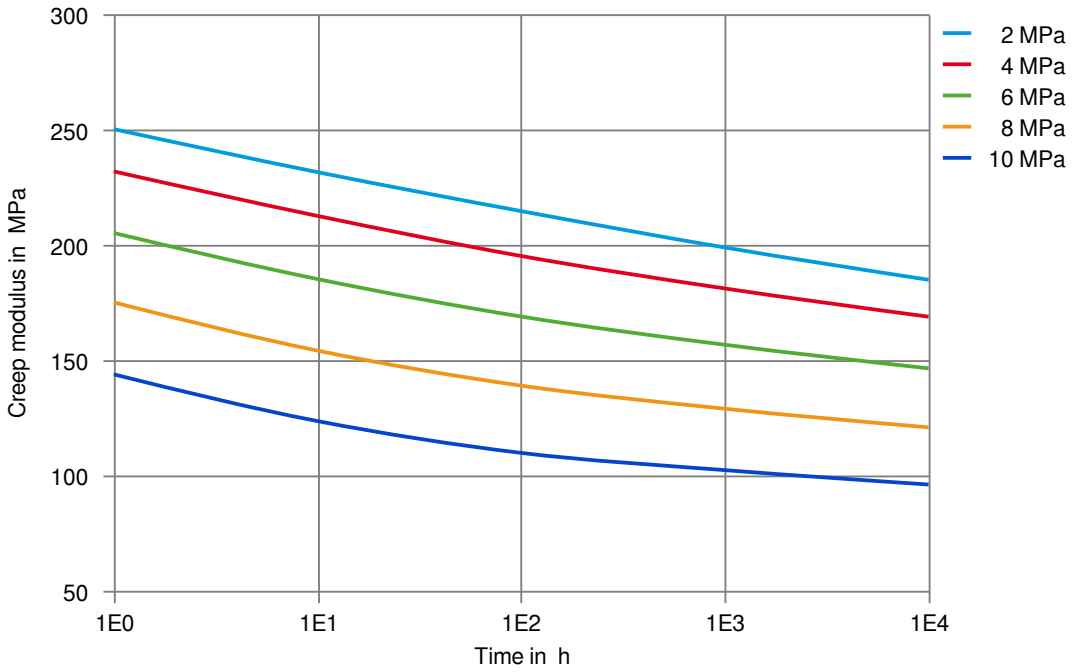
THERMOPLASTIC POLYESTER ELASTOMER

Creep modulus-time 80 °C



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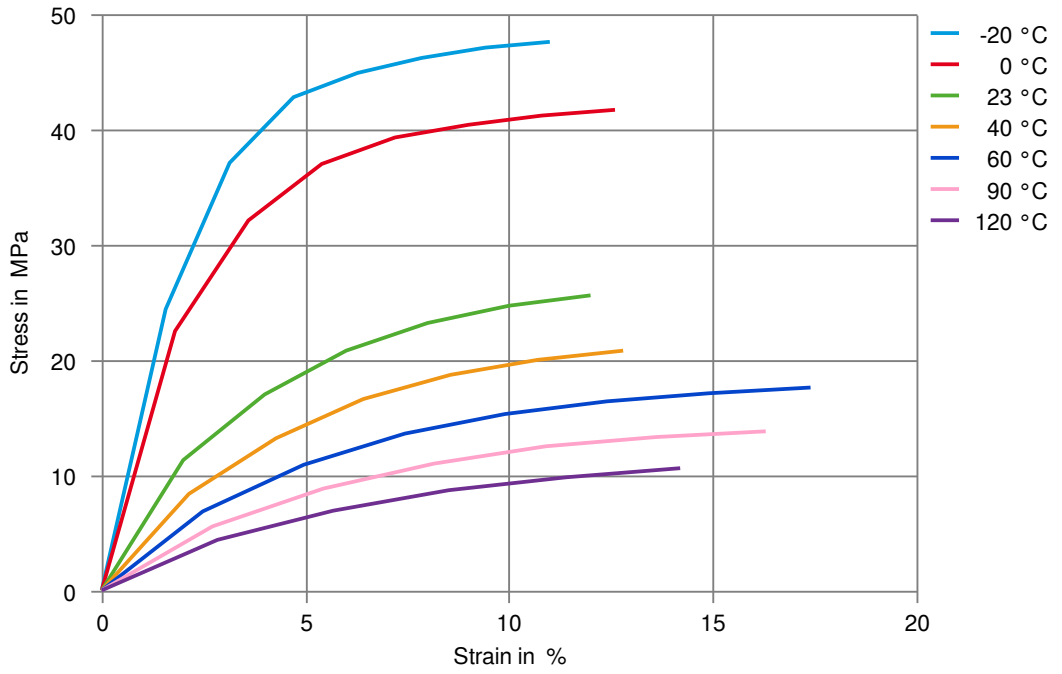
THERMOPLASTIC POLYESTER ELASTOMER

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
- ✘ Hydrochloric Acid (36% by mass), 23°C
- ✘ Nitric Acid (40% by mass), 23°C
- ✘ 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

- ✘ Acetone, 23°C

Ethers

- ✘ Diethyl ether, 23°C

Mineral oils

- ✔ SAE 10W40 multigrade motor oil, 23°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

Standard Fuels

- ✘ ISO 1817 Liquid 1 - E5, 60°C
- ✘ ISO 1817 Liquid 2 - M15E4, 60°C
- ✘ 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

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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
- ✘ 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
- ✘ 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).

Revised: 2025-04-22 Source: Celanese Materials Database