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Hytrel® DYM250S BK472

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® DYM250S BK472 is a medium modulus resin suited for injection molding of Air Bag Deployment Doors. It has a nominal durometer hardness of 49D and contains fine particle size carbon black.

Typical applications:
Air bag deployment door.

Product information

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

Rheological properties

Melt volume-flow rate	13	cm^3/10min	ISO 1133
Temperature	240	°C	
Load	2.16	kg	
Melt mass-flow rate	13	g/10min	ISO 1133
Melt mass-flow rate, Temperature	240	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage, parallel	1.2	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	295	MPa	ISO 527-1/-2
Stress at 5% strain	7.8	MPa	ISO 527-1/-2
Stress at 10% strain	9.7	MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	12.5	MPa	ISO 527-1/-2
Tensile stress at 100% strain	14	MPa	ISO 527-1/-2
Stress at 300% strain	18	MPa	ISO 527-1/-2
Tensile stress at break	30	MPa	ISO 527-1/-2
Nominal strain at break	600	%	ISO 527-1/-2
Tensile strain at break	>300	%	ISO 527-1/-2
Flexural modulus	350	MPa	ISO 178
Charpy notched impact strength, -30 °C	110[P]	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -40 °C	110[P]	kJ/m^2	ISO 179/1eA
Brittleness temperature	-100	°C	ISO 974

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Shore D hardness, 15s	44		ISO 48-4 / ISO 868
Shore D hardness, max	49		ISO 868
Tear strength, parallel	110	kN/m	ISO 34-1
Tear strength, normal	90	kN/m	ISO 34-1

[P]: Partial Break

Thermal properties

Melting temperature, 10°C/min	222	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	41	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	48	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 10N	150	°C	ISO 306

Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	24	mm/min	ISO 3795 (FMVSS 302)

Physical/Other properties

Density	1160	kg/m³	ISO 1183
Density of melt	995	kg/m³	

VDA Properties

Emission of organic compounds	9.5	µgC/g	VDA 277
Odour	4	class	VDA 270
Fogging, F-value (refraction)	100	%	ISO 6452
Fogging, G-value (condensate)	0	mg	ISO 6452

Injection

Drying Recommended	yes	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	3 - 4	h
Processing Moisture Content	≤0.05	%
Melt Temperature Optimum	248	°C
Min. melt temperature	235	°C
Max. melt temperature	260	°C
Mold Temperature Optimum	50	°C
Min. mould temperature	45	°C
Max. mould temperature	55	°C
Ejection temperature	155	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Special characteristics	Light stabilised or stable to light, U.V. stabilised or stable to weather, Heat stabilised or stable to heat

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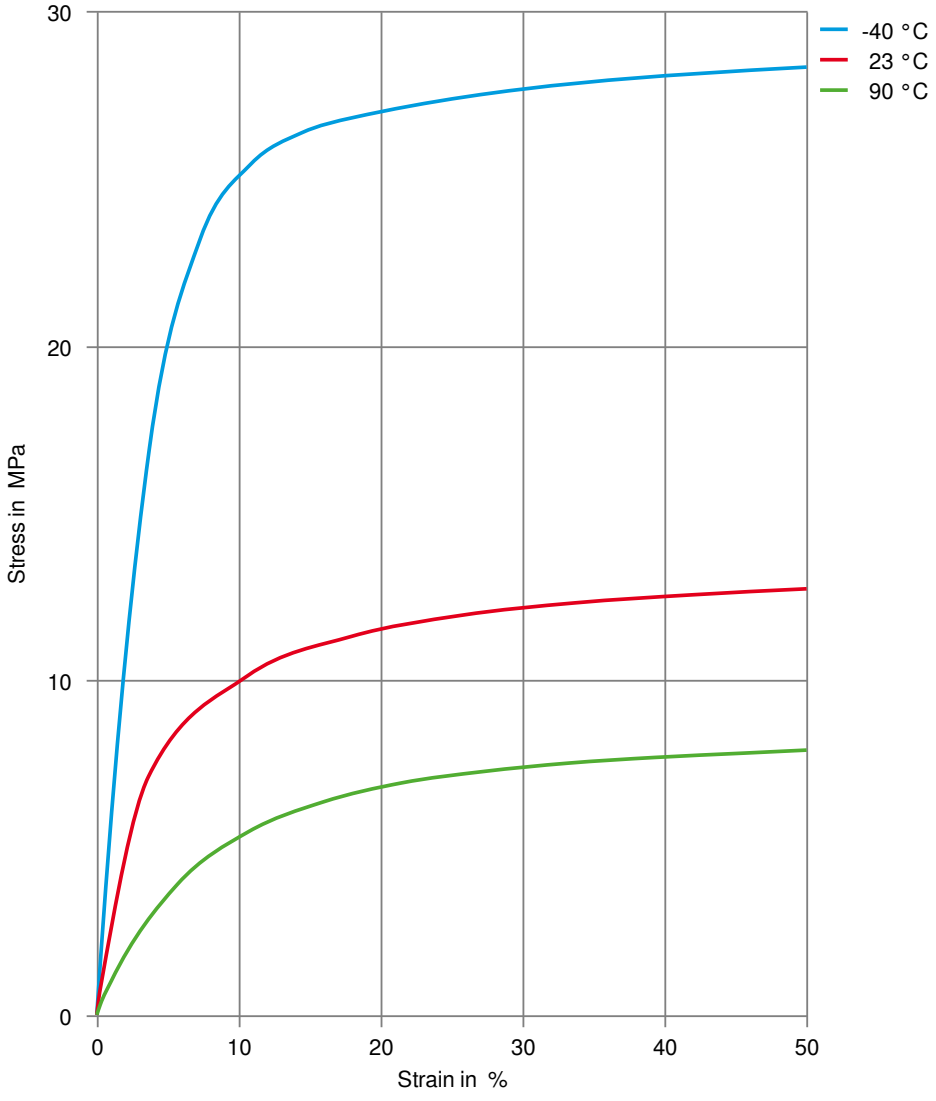
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Mercedes-Benz	DBL5562.50 TPC	
Stellantis - Chrysler	MS-DB-585 / CPN-4154	Black

Stress-strain



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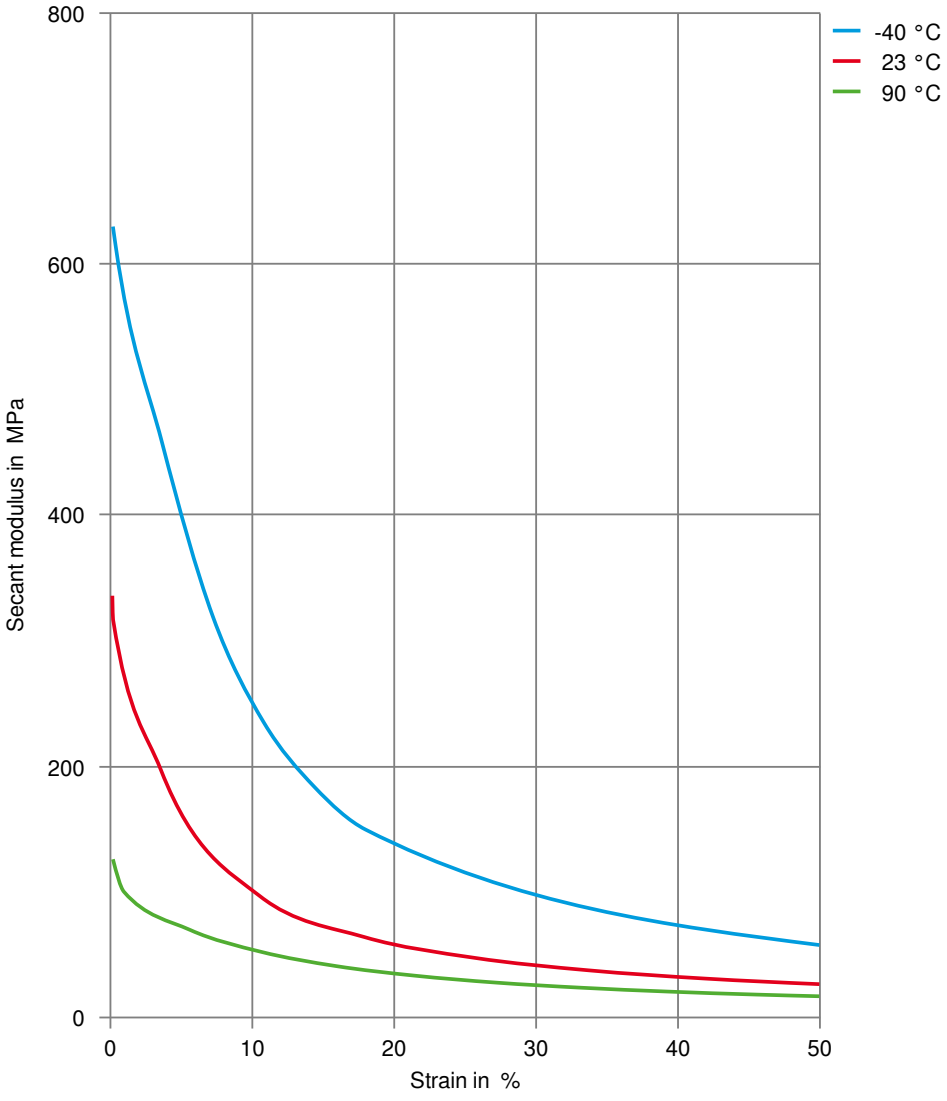
Secant modulus-strain



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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 10W40 multigrade motor oil, 130°C
- ✘ SAE 80/90 hypoid-gear oil, 130°C
- ✔ Insulating Oil, 23°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

Salt solutions

- ✔ Sodium Chloride solution (10% by mass), 23°C
- ✘ Sodium Hypochlorite solution (10% by mass), 23°C

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- ✔ 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: 2025-04-17 Source: Celanese Materials Database