



ISO 1043

ISO 527-1/-2

ISO 527-1/-2

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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

Stress at 5% strain

Stress at 10% strain

Stress at 300% strain

Tensile stress at 50% strain, 1BA

Tensile stress at 100% strain

| 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 |

TPC-ET+PBT

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/-2 350 MPa ISO 178 Flexural modulus 110^[P] kJ/m² Charpy notched impact strength, -30°C ISO 179/1eA $110^{[P]} kJ/m^2$ Charpy notched impact strength, -40°C ISO 179/1eA -100 °C Brittleness temperature ISO 974

7.8 MPa

9.7 MPa

12.5 MPa

14 MPa

18 MPa

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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 | В | ISO 3795 (FMVSS 302) |
|------------------------------|-----------|----------------------|
| Burning rate, Thickness 1 mm | 24 mm/min | ISO 3795 (FMVSS 302) |

Physical/Other properties

| Density | 1160 kg/m ³ | ISO 1183 |
|-----------------|------------------------|----------|
| Density of melt | 995 kg/m ³ | |

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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THERMOPLASTIC POLYESTER ELASTOMER

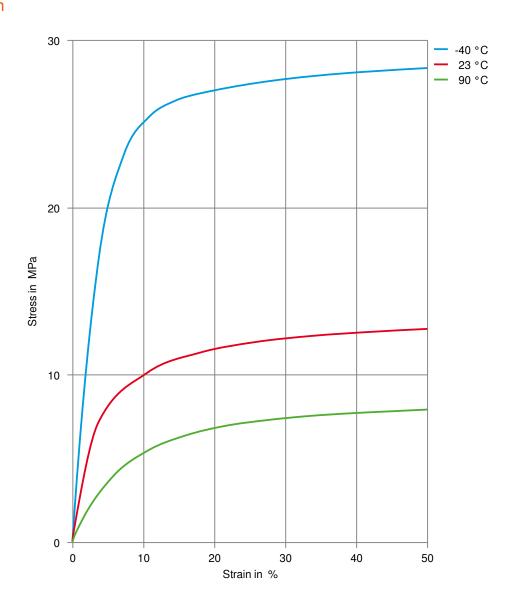
Automotive

OEM STANDARD ADDITIONAL INFORMATION

Mercedes-Benz DBL5562.50 TPC

Stellantis - Chrysler MS-DB-585 / CPN-4154 Black

Stress-strain



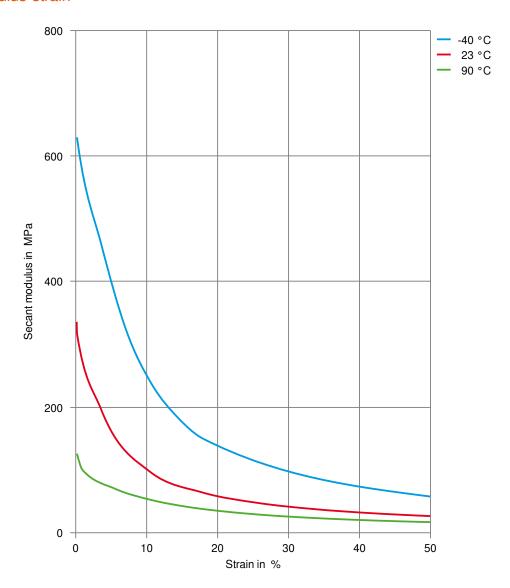
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Secant modulus-strain



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Hytrel® DYM250S BK472

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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
- 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

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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
- 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).

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