

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® HTR8332 BK320 is designed for blow molding or processing techniques requiring high melt viscosity. It has nominal hardness of 50D, is pigmented black with fine particle size carbon black, and contains a general purpose stabilizer. It shows excellent mechanical properties at elevated temperatures, superior fatigue, abrasion, and grease resistance.

### Product information

Resin Identification Part Marking Code	TPC-ET >TPC-ET<		ISO 1043 ISO 11469
Rheological properties			
Melt mass-flow rate Temperature Load	10 230 10	g/10min °C kg	ISO 1133
Typical mechanical properties			
Tensile Modulus	110	MPa	ISO 527-1/-2
Stress at 10% elongation	8	MPa	ISO 527-1/-2 or ISO 37
Stress at break	28	MPa	ISO 527-1/-2
Strain at break	300	%	ISO 527-1/-2
Flexural Modulus	100	MPa	ISO 178
Charpy notched impact strength, -30 °C	N	kJ/m²	ISO 179/1eA
Poisson's ratio	0.49		
Shore D hardness, 15s	45		ISO 48-4 / ISO 868
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Tear strength, parallel Tear strength, normal	100 100	kN/m kN/m	ISO 34-1 ISO 34-1
Thermal properties			
Melting temperature, 10°C/min Glass transition temperature, 10°C/min Vicat softening temperature, 50°C/h 10N	199 -40 160	0° °C °C	ISO 11357-1/-3 ISO 11357-1/-3 ISO 306
Flammability			
FMVSS Class Burning rate, Thickness 1 mm	B <80	mm/min	ISO 3795 (FMVSS 302) ISO 3795 (FMVSS 302)
Other properties			
Water absorption, 2mm Density	0.5 1160	% kg/m³	Sim. to ISO 62 ISO 1183
Injection			
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content	yes 100 2 - 4 <0 08	°C h %	
Melt Temperature Optimum Min. melt temperature Max. melt temperature	225 220 250	°C °C °C	Internal
Mold Temperature Optimum Min. mould temperature Max. mould temperature	45 45 55	°C °C °C	
Extrusion			
Processing Moisture Content Melt Temperature Optimum	≤0.06 200	% °C	
Blow Molding			
Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Melt Temperature Range Mold Temperature Range	100 - 110 3 - 4 ≤0.02 225 220 - 240 30 20 - 40	°C h % °C °C °C °C	
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Additional information

Blow molding

POSTPROCESSING

Dynamic Tensile modulus-temperature



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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
- 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
- X Diesel fuel (pref. ISO 1817 Liquid F), >90°C

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#### Salt solutions

- ✓ Sodium Chloride solution (10% by mass), 23°C
- X 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
- X DOT No. 4 Brake fluid, 130°C
- **X** 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).

★ 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).





