

# Hytrel® HTR6108

## THERMOPLASTIC POLYESTER ELASTOMER

Hytrel® HTR6108 is a 61 Shore D High Performance Polyester Elastomer with Low Permeability to Fuels and Oils

### Product information

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

### Rheological properties

Melt mass-flow rate	5.1 g/10min	ISO 1133
Melt mass-flow rate, Temperature	190 °C	
Melt mass-flow rate, Load	2.16 kg	
Moulding shrinkage, parallel	0.3 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.7 %	ISO 294-4, 2577

### Typical mechanical properties

Tensile modulus	190 MPa	ISO 527-1/-2
Stress at 10% strain	11 MPa	ISO 527-1/-2
Tensile stress at break	32 MPa	ISO 527-1/-2
Tensile strain at break	290 %	ISO 527-1/-2
Flexural modulus	170 MPa	ISO 178
Charpy notched impact strength, -30 °C	4.5 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -40 °C	3.5 kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength, -40 °C	4.0 kJ/m <sup>2</sup>	ISO 180/1A
Poisson's ratio	0.48	
Brittleness temperature	-65 °C	ISO 974
Shore D hardness, 15s	55	ISO 48-4 / ISO 868
Shore D hardness, max	61	ISO 868
Tear strength, parallel	180 kN/m	ISO 34-1
Tear strength, normal	180 kN/m	ISO 34-1

### Thermal properties

Melting temperature, 10 °C/min	165 °C	ISO 11357-1/-3
Temperature of deflection under load, 0.45 MPa	47 °C	ISO 75-1/-2
Vicat softening temperature, 50 °C/h 10N	130 °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/m <sup>3</sup>	ISO 1183
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### Film Properties

WVTR, 23°C/85%r.h.	120 g/(m <sup>2</sup> *d)	DIS 15106-1/-2
Oxygen transmission rate, 23°C/85%r.h.	1000 cm <sup>3</sup> /(m <sup>2</sup> *d*bar)	DIS 15105-1/-2
Thickness of specimen	0.025 mm	

### Injection

Drying Recommended	yes
Drying Temperature	90 °C
Drying Time, Dehumidified Dryer	2 - 3 h
Processing Moisture Content	≤0.08 %
Melt Temperature Optimum	200 °C
Min. melt temperature	185 °C
Max. melt temperature	215 °C
Mold Temperature Optimum	45 °C
Min. mould temperature	40 °C
Max. mould temperature	55 °C
Ejection temperature	45 °C

### Extrusion

Drying Temperature	100 °C
Drying Time, Dehumidified Dryer	2 - 3 h
Processing Moisture Content	≤0.06 %
Melt Temperature Optimum	230 °C
Melt Temperature Range	175 - 190 °C

### Characteristics

Processing	Injection Moulding, Film Extrusion, Extrusion, Sheet Extrusion, Other Extrusion, Coatable, Thermoforming
Delivery form	Pellets

### 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

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### 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
- ✓ 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

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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).