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 volume-flow rate	5.2	cm³/10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
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
Stress at break	32	MPa	ISO 527-1/-2
Strain at break	290	%	ISO 527-1/-2
Flexural Modulus	170	MPa	ISO 178
Charpy notched impact strength, -30°C	4.5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	3.5	kJ/m²	ISO 179/1eA
Izod notched impact strength, -40°C	4	kJ/m²	ISO 180/1A
Poisson's ratio	0.48	-	
Brittleness temperature	-65	°C	ISO 974
Shore D hardness, 15s	55	-	ISO 48-4
Shore D hardness, max	61	-	ISO 48-4
Tear strength, parallel	170	kN/m	ISO 34-1
Tear strength, normal	175	kN/m	ISO 34-1

Thermal properties

Melting temperature, 10°C/min	165	°C	ISO 11357-1/-3
Temp. 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)

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Other properties

Density	1250	kg/m³	ISO 1183

Film Properties

WVTR, 23°C/85%r.h.	120	g/(m²*d)	DIS 15106-1/-2
Oxygen transmission rate, 23°C/85%r.h.	1000	cm³/(m²*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

Extrusion

Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	230	°C

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

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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

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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).