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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
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 / 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
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	Internal
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

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

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

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- ✔ 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).