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Hytrel® SC988 NC010

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® SC988 NC010 is the highest modulus grade, with nominal hardness of 82D, contains a non-discoloring stabilizer. Can be processed by various thermoplastic processing techniques. Developed for applications such as parts for the healthcare industry.

SPECIAL CONTROL for HEALTHCARE APPLICATIONS

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in the USA when meeting applicable use conditions. This product is also tested against ISO 10993-5 and -11 and selected parts of USP Class VI. For details, individual compliance statements are available from our representative.

Product information

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

Rheological properties

Melt volume-flow rate	12	cm^3/10min	ISO 1133
Temperature	240	°C	
Load	2.16	kg	
Melt mass-flow rate	13	g/10min	ISO 1133
Moulding shrinkage, parallel	1.6	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.6	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	1200	MPa	ISO 527-1/-2
Tensile stress at yield	36	MPa	ISO 527-1/-2
Tensile strain at yield	19	%	ISO 527-1/-2
Stress at 10% strain	35	MPa	ISO 527-1/-2
Tensile stress at 50% strain, 1BA	28	MPa	ISO 527-1/-2
Tensile stress at break	46	MPa	ISO 527-1/-2
Nominal strain at break	340	%	ISO 527-1/-2
Tensile strain at break	>300	%	ISO 527-1/-2
Flexural modulus	1200	MPa	ISO 178
Charpy notched impact strength, 23°C	15	kJ/m^2	ISO 179/1eA

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Charpy notched impact strength, -30 °C	5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40 °C	5	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23 °C	11	kJ/m²	ISO 180/1A
Izod notched impact strength, -40 °C	5.5	kJ/m²	ISO 180/1A
Poisson's ratio	0.44		
Brittleness temperature	-84	°C	ISO 974
Shore D hardness, 15s	70		ISO 48-4 / ISO 868
Shore D hardness, max	76		ISO 868
Tear strength, parallel	230	kN/m	ISO 34-1

Thermal properties

Melting temperature, 10 °C/min	221	°C	ISO 11357-1/-3
Glass transition temperature, 10 °C/min	50	°C	ISO 11357-1/-3
Temperature of deflection under load, 0.45 MPa	105	°C	ISO 75-1/-2
Vicat softening temperature, 50 °C/h 50N	150	°C	ISO 306
Vicat softening temperature, 50 °C/h 10N	213	°C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	145[DS]	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	150[DS]	E-6/K	ISO 11359-1/-2

[DS]: Derived from similar grade

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10

Physical/Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.6	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.3	%	Sim. to ISO 62
Density	1280	kg/m³	ISO 1183
Density of melt	1130	kg/m³	

Injection

Drying Recommended	yes	
Drying Temperature	110	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.08	%
Melt Temperature Optimum	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°C
Mold Temperature Optimum	50	°C
Min. mould temperature	45	°C
Max. mould temperature	55	°C
Ejection temperature	159	°C

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Extrusion

Drying Temperature	100 - 120	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	240	°C

Characteristics

Processing	Injection Moulding, Film Extrusion, Extrusion, Sheet Extrusion, Other Extrusion, Casting, Thermoforming
Delivery form	Pellets
Special characteristics	Light stabilised or stable to light

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