

# 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 <sup>3</sup> /10min	ISO 1133
Melt mass-flow rate	13 g/10min	ISO 1133
Temperature	240 °C	
Load	2.16 kg	
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
Yield stress	36 MPa	ISO 527-1/-2
Yield strain	19 %	ISO 527-1/-2
Stress at 10% strain	35 MPa	ISO 527-1/-2
Stress at 50% strain	28 MPa	ISO 527-1/-2



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Stress at break	46 MPa	ISO 527-1/-2
Nominal strain at break	340 %	ISO 527-1/-2
Strain at break	>300 %	ISO 527-1/-2
Flexural Modulus	1200 MPa	ISO 178
Charpy notched impact strength, 23°C	15 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	5 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -40°C	5 kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength, 23°C	11 kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength, -40°C	5.5 kJ/m <sup>2</sup>	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
Temp. of deflection under load, 0.45 MPa	100 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	150 °C	ISO 306
Vicat softening temperature, 50°C/h 10N	210 °C	ISO 306
Coeff. of linear therm. expansion, parallel	145 <sup>[DS]</sup> E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	150 <sup>[DS]</sup> E-6/K	ISO 11359-1/-2

[DS]: Derived from similar grade

### Flammability

Burning Behav. at 1.5mm nom. thickn.	HB class	UL 94
Thickness tested	1.5 mm	UL 94

### 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/m <sup>3</sup>	ISO 1183
Density of melt	1130 kg/m <sup>3</sup>	Internal

### 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	Internal
Min. melt temperature	245 °C	



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Max. melt temperature	260 °C
Mold Temperature Optimum	45 °C
Min. mould temperature	45 °C
Max. mould temperature	55 °C

### Extrusion

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

