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Hytrel® SC969 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® SC969 NC010 is a medium modulus grade with nominal hardness of 63D, contains a non-discoloring stabilizer and 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	8.5	cm^3/10min	ISO 1133
Melt mass-flow rate	9	g/10min	ISO 1133
Temperature	230	°C	
Load	2.16	kg	
Moulding shrinkage, parallel	1.5	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.5	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	260	MPa	ISO 527-1/-2
Stress at 5% strain	12	MPa	ISO 527-1/-2
Stress at 10% strain	15	MPa	ISO 527-1/-2
Stress at break	41	MPa	ISO 527-1/-2

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Strain at break	>300	%	ISO 527-1/-2
Charpy impact strength, 23°C	N	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	120[P]	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	25	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	15	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	81	kJ/m²	ISO 180/1A
Izod notched impact strength, -40°C	19	kJ/m²	ISO 180/1A
Poisson's ratio	0.48		
Brittleness temperature	-100	°C	ISO 974
Shore D hardness, 15s	58		ISO 48-4 / ISO 868
Shore D hardness, max	63		ISO 868
Tear strength, parallel	180	kN/m	ISO 34-1

[P]: Partial Break

Thermal properties

Melting temperature, 10°C/min	211	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	45	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	85	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	100	°C	ISO 306
Vicat softening temperature, 50°C/h 10N	200	°C	ISO 306
Thermal conductivity of melt	0.14	W/(m K)	Internal
Eff. thermal diffusivity	5.44E-8	m²/s	Internal
Spec. heat capacity of melt	2160	J/(kg K)	Internal

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
Density	1220	kg/m³	ISO 1183
Density of melt	1040	kg/m³	Internal

Injection

Drying Recommended	yes		
Drying Temperature	100	°C	
Drying Time, Dehumidified Dryer	2 - 3	h	
Processing Moisture Content	≤0.08	%	
Melt Temperature Optimum	240	°C	Internal
Min. melt temperature	235	°C	
Max. melt temperature	260	°C	
Mold Temperature Optimum	45	°C	

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Min. mould temperature	45	°C
Max. mould temperature	55	°C

Extrusion

Drying Temperature	90 - 110	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	230	°C
Melt Temperature Range	225 - 240	°C

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