Celanese
The chemistry inside innovation™

Hytrel® 5033FG NC010 (PRELIMINARY)

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® 5033FG NC010 is a medium modulus Hytrel® grade with nominal durometer hardness of 50D. It contains non-discoloring stabilizer. It is specially recommended for injection molding applications requiring high flow properties and developed for applications in contact with food.

Rheological properties

Melt mass-flow rate	20	g/10min	ISO 1133
Melt mass-flow rate, Temperature	220	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage, parallel	1.5	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.4	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	124	MPa	ISO 527-1/-2
Stress at 10% strain	7	MPa	ISO 527-1/-2
Tensile stress at break	32	MPa	ISO 527-1/-2
Tensile strain at break	>300	%	ISO 527-1/-2
Flexural modulus	121	MPa	ISO 178
Charpy notched impact strength, -40°C	N	kJ/m²	ISO 179/1eA
Poisson's ratio	0.49		
Shore D hardness, 15s	43		ISO 48-4 / ISO 868
Tear strength, parallel	110	kN/m	ISO 34-1
Tear strength, normal	110	kN/m	ISO 34-1

Thermal properties

Melting temperature, 10°C/min	202	°C	ISO 11357-1/-3
Vicat softening temperature, 50°C/h 10N	171	°C	ISO 306

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Physical/Other properties

Density	1160	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.08	%
Melt Temperature Optimum	230	°C
Min. melt temperature	220	°C
Max. melt temperature	250	°C
Mold Temperature Optimum	45	°C
Min. mould temperature	45	°C
Max. mould temperature	55	°C

Characteristics

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