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, DuPont recommends, 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 consideration into applications in contact with food.

Rheological properties

Melt mass-flow rate	20	g/10min	ISO 1133
Melt mass-flow rate, Temperature	220	°C	ISO 1133
Melt mass-flow rate, Load	2.16	kg	ISO 1133
Moulding shrinkage, parallel	1.1	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	130	MPa	ISO 527-1/-2
Stress at 10% strain	8	MPa	ISO 527-1/-2
Stress at break	36	MPa	ISO 527-1/-2
Strain at break	>300	%	ISO 527-1/-2
Flexural Modulus	130	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
Tear strength, parallel	100	kN/m	ISO 34-1
Tear strength, normal	104	kN/m	ISO 34-1

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Thermal properties

Melting temperature, 10°C/min	203 °C	ISO 11357-1/-3
Vicat softening temperature, 50°C/h 10N	170 °C	ISO 306

Other properties

Density	1160 kg/m³	ISO 1183