Celanese
The chemistry inside innovation™

Hytrel® 8238HS NCB010 (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® 8238HS NCB010 is the highest modulus grade, with nominal hardness of 82D. It contains non-discoloring stabilizer and a cube blended heat stabilizer. It can be processed by many conventional thermoplastic processing techniques like injection molding and extrusion.

Typical applications:

Cubing, wire and cable, gears, sprockets, electrical connectors and oil field parts.

Product information

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

Rheological properties

Moulding shrinkage, parallel	1.4	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.4	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	1050	MPa	ISO 527-1/-2
Tensile stress at yield	38	MPa	ISO 527-1/-2
Tensile strain at yield	19	%	ISO 527-1/-2
Stress at 10% strain	36	MPa	ISO 527-1/-2
Tensile stress at break	49	MPa	ISO 527-1/-2
Nominal strain at break	250	%	ISO 527-1/-2
Tensile strain at break	290	%	ISO 527-1/-2
Flexural modulus	1040	MPa	ISO 178
Charpy notched impact strength, 23°C	5.5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	3.5	kJ/m²	ISO 179/1eA
Poisson's ratio	0.45		
Shore D hardness, 15s	70		ISO 48-4 / ISO 868
Shore D hardness, max	71		ISO 868

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Thermal properties

Glass transition temperature, 10°C/min	45	°C	ISO 11357-1/-3

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	245	°C
Max. melt temperature	260	°C
Mold Temperature Optimum	45	°C
Min. mould temperature	45	°C
Max. mould temperature	55	°C
Hold pressure range	≥70	MPa

Extrusion

Drying Temperature	100 - 120	°C
Drying Time, Dehumidified Dryer	2 - 3	h
Processing Moisture Content	≤0.06	%
Melt Temperature Range	235 - 250	°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, Heat stabilised or stable to heat