DuPont™ Hytrel®

thermoplastic polyester elastomer

Hytrel® 4068

Hytrel® 4068 is a low modulus Hytrel® grade with nominal durometer hardness of 40D. It contains non-discoloring stabilizer. It can be processed by many conventional thermoplastic processing techniques like injection molding and extrusion.

Property	Test Method	Units	Value
Mechanical			
Tensile Stress	ISO 527-1/-2	MPa (kpsi)	
@ 5% Strain			2.4 (0.4)
@ 10% Strain			3.5 (0.5)
Stress at Break	ISO 527-1/-2	MPa (kpsi)	22
Strain at Break	ISO 527-1/-2	%	620
Tensile Modulus	ISO 527-1/-2	MPa (kpsi)	30 (4.3)
Flexural Modulus	ISO 178	MPa (kpsi)	
-40°C (-40°F)			172 (25)
23°C (73°F)			45 (6.5)
100°C (212°F)			28 (4)
Hardness, Durometer D	ISO 868		40
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m^2	NB
Initial Tear Resist., Die C	ISO 34	kN/m (lb/in)	
Parallel			95 (543)
Thermal			
Vicat Softening Temperature	ISO 306	°C (°F)	
10N, 50°C/h			135 (273)

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.
Test specimen for ISO 527-1/-2 is 1BA (2mm) at 50mm/min; all other ISO & ASTM mechanical properties measured at 4mm; ISO electrical properties measured at 2mm.
All mechanical & electrical properties measured on injection molded specimens.
Test temperatures are 23°C unless otherwise stated.

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Property	Test Method	Units	Value
Rheological			
Melt Mass-Flow Rate	ISO 1133	g/10 min	
220°C, 2.16kg			8.5
Other			
Density	ISO 1183	kg/m^3 (g/cm^3)	1100 (1.10)
Water Absorption	ISO 62	%	
Equilibrium 50%RH			0.3
Immersion 24h			0.7
Saturation, immersed			0.7
Processing - Injection Molding			
Melt Temperature Optimum		°C (°F)	225 (435)
Mold Temperature Range		°C (°F)	30-40 (85-100)
Mold Temperature Optimum		°C (°F)	40 (105)
Drying Time, Dehumidified Dryer		h	2-3
Drying Temperature		°C (°F)	100 (210)
Processing Moisture Content		%	<0.08
Processing - Extrusion			
Melt Temperature Optimum		°C (°F)	215 (419)
Drying Time, Dehumidified Dryer		h	2-3
Drying Temperature		°C (°F)	100 (210)
Processing Moisture Content		%	<0.08

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Description

Hytrel® 4068 is a 40 nom. Shore D, containing non-discoloring stabilizer, plasticiser free, high performance resin for injection molding and extrusion; with outstanding impact resistance down to -40°C.

Properties

The flexibility of Hytrel® polyester elastomer is intermediate between that of rubber and engineering plastics. The key characteristics of Hytrel® 4068 include:

- Excellent flexibility and toughness at both high and low temperatures without the use of plasticisers.
- Good resistance to oil and aliphatic solvents.
- Excellent flex cut growth resistance.
- Good tear strength.

Improvements in flame retardancy, hydrolytic stability and dry heat aging can be achieved with additives. For outdoor service or for exposure to ultraviolet radiation, Hytrel® 4068 must be properly protected. Recommendations for pigmentation and other additives are covered in the Hytrel® Design Guide Module V.

Applications

Hytrel® 4068 can be used for molded goods, as well as for extruded products such as hose, tubing, profiles, film and sheet. Hytrel® 4068 can be used in applications requiring light colors.

Processing

Hytrel® 4068 is available in pellet form, and is suitable for processing by standard thermoplastic methods.

Hytrel® 4068 must be dry during processing. It is packaged in moisture proof 25 kg [55 lb] bags. For larger packages, contact your local sales office.

Once exposed to air, Hytrel® 4068, like other types of Hytrel®, may absorb excessive moisture within an hour depending upon the temperature and humidity. All regrind and all virgin polymer must be dried at least 2 hours at 100°C [212°F] in desiccant type dryers.

For additional processing information, see the Hytrel® Injection Molding Guide and the Hytrel® Extrusion Guide. All literature is available either at the website shown below or from your local sales office.

Handling Precautions

The DuPont Company is not aware of any health hazards with Hytrel® 4068 polyester elastomer as shipped in pellet form. However, there are certain hazards that may be encountered during processing. Before processing this material, please refer to the Material Safety Data Sheet, bulletin "Rheology and Handling", and bulletin "Proper Use of Local Exhaust Ventilation During Processing", and observe the precautions recommended therein. Compounding ingredients, or additives, may present hazards in handling or use. *Before proceeding with any compounding or processing work, consult and follow MSDS, label directions, and handling precautions from suppliers of all ingredients.*

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 (-24kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations must be observed. The part marking code (according to ISO 11469) is >TEEE<.

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