

DuPont™ Hytrel®

thermoplastic polyester elastomer

Hytrel® 5555HS

Hytrel® 5555HS is a medium modulus Hytrel® grade, with nominal durometer hardness of 55D. It is a specially stabilized version of Hytrel® 5556 for superior heat and oil resistance properties.

Property	Test Method	Units	Value
Mechanical			
Tensile Stress	ISO 527-1/-2	MPa (kpsi)	
@ 5% Strain			6.9 (1)
@ 10% Strain			11.1 (1.6)
Stress at Break	ISO 527-1/-2	MPa (kpsi)	42 (6.1)
Strain at Break	ISO 527-1/-2	%	520
Tensile Modulus	ISO 527-1/-2	MPa (kpsi)	184 (27)
Flexural Modulus	ISO 178	MPa (kpsi)	
-40°C (-40°F)			760 (110)
23°C (73°F)			195 (28)
100°C (212°F)			110 (16)
Hardness, Durometer D	ISO 868		
15s			52
Maximum			55
Notched Izod Impact Strength	ISO 180/1A	kJ/m ²	
-40°C (-40°F)			110
23°C (73°F)			60
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m ²	84
Brittleness Temperature	ISO 974	°C (°F)	-80 (-112)

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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Product Information

Hytrel® 5555HS

Property	Test Method	Units	Value
Mechanical			
Initial Tear Resist., Die C	ISO 34	kN/m (lb/in)	
Normal			124 (708)
Parallel			134 (766)
Thermal			
Deflection Temperature	ISO 75-1/-2	°C (°F)	
0.45MPa			60 (140)
1.80MPa			40 (104)
Melting Temperature	ISO 11357-1/-3	°C (°F)	
10°C/min			203 (397)
Vicat Softening Temperature	ISO 306	°C (°F)	
10N, 50°C/h			177 (351)
Rheological			
Melt Mass-Flow Rate	ISO 1133	g/10 min	
220°C, 2.16kg			8.5
Flammability			
Flammability Classification	UL94		
1.5mm			HB
3.0mm			HB
Temperature Index			
RTI, Electrical	UL 746B	°C	
0.7mm			90
1.5mm			90
3.0mm			90
RTI, Impact	UL 746B	°C	
1.5mm			85
3.0mm			85

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Hytre[®] 5555HS

Property	Test Method	Units	Value
Temperature Index			
RTI, Strength	UL 746B	°C	
1.5mm			85
3.0mm			85
Other			
Density	ISO 1183	kg/m ³ (g/cm ³)	1190 (1.19)
Water Absorption	ISO 62	%	
Equilibrium 50%RH			0.2
Immersion 24h			0.7
Saturation, immersed			0.6
Processing - Injection Molding			
Melt Temperature Optimum		°C (°F)	230 (446)
Mold Temperature Range		°C (°F)	<55 (<131)
Mold Temperature Optimum		°C (°F)	45 (113)
Drying Time, Dehumidified Dryer		h	2-3
Drying Temperature		°C (°F)	100 (212)
Processing Moisture Content		%	<0.08
Processing - Extrusion			
Melt Temperature Optimum		°C (°F)	225 (437)
Drying Time, Dehumidified Dryer		h	2-3
Drying Temperature		°C (°F)	100 (212)
Processing Moisture Content		%	<0.08

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Hytrel® 5555HS

Description

Hytrel® 5555HS is a 55 nom. Shore D, heat stabilised, plasticiser free specialty resin for injection molding and extrusion; good impact resistance down to -40°C as well as mechanical properties up to 135°C.

Properties

In addition to having the physical properties of Hytrel® 5556, Hytrel® 5555HS resists dry heat aging at temperatures of 150°C and above by a factor of 2X better than Hytrel® 5556. Similar performance improvements are attained hot hydrocarbon oils. The key characteristics of Hytrel® 5555HS are:

- Excellent flexibility, strength, impact resistance and creep resistance at high and low temperatures without the use of plasticisers.
- High flex crack and abrasion resistance.
- Broad service temperature range.
- Excellent resistance to a broad variety of oils, fuels, and aliphatic or aromatic solvents.

Superior weatherability, hydrolytic stability and flame retardancy can be obtained by the incorporation of special additives.

Applications

Hytrel® 5555HS is useful for such products as tubing, hose, wire and cable jacketing, seals, packings and gaskets which require a higher level of heat and/or oil aging resistance than is provided by Hytrel® 5556.

Processing

Hytrel® 5555HS is available in pellet form, and is suitable for processing by conventional thermoplastic methods.

Hytrel® 5555HS must be dry during processing. It is available in moisture proof 25 kg [55 lb] bags. For larger packages, contact your local sales office.

Once exposed to air, Hytrel® 5555HS, 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® 5555HS 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 MSDS, 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 and 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 (-24 kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations must be observed. Recycling code per ISO1043 is TEEE.

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