

# DuPont™ Hytrel® HTR8068

## THERMOPLASTIC POLYESTER ELASTOMER

### Product Information

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® HTR8068 is a medium modulus flame retardant and antidrip Hytrel® resin that meets the requirement of UL94 V-0. It has nominal durometer hardness of 44D.**

General information	Value	Unit	Test Standard
Resin Identification	TPC-ET-FR(17)	-	ISO 1043
Part Marking Code	>TPC-ET-FR(17)<	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Melt volume-flow rate	3.6	cm <sup>3</sup> /10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Melt mass-flow rate	4	g/10min	ISO 1133
Melt mass-flow rate, Temperature	190	°C	-
Melt mass-flow rate, Load	2.16	kg	-
Moulding shrinkage, parallel	1.1	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.1	%	ISO 294-4, 2577
Mechanical properties (TPE)	Value	Unit	Test Standard
Tensile Modulus	140	MPa	ISO 527-1/-2
Stress at 10% strain	5.9	MPa	ISO 527-1/-2
Stress at 50% strain	7.3	MPa	ISO 527-1/-2
Stress at break	13	MPa	ISO 527-1/-2
Strain at break	>300	%	ISO 527-1/-2
Nominal strain at break	340	%	ISO 527-1/-2
Tear strength, parallel	70	kN/m	ISO 34-1
Tear strength, normal	70	kN/m	ISO 34-1
Shore D hardness, max	44	-	ISO 868
Shore D hardness, 15s	38	-	ISO 868
Mechanical properties	Value	Unit	Test Standard
Flexural Modulus	155	MPa	ISO 178
Charpy notched impact strength			ISO 179/1eA
23°C	40	kJ/m <sup>2</sup>	
-30°C	7	kJ/m <sup>2</sup>	
-40°C	5	kJ/m <sup>2</sup>	
Brittleness temperature	-48	°C	ISO 974
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	170	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	41	°C	
0.45 MPa	46	°C	

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

#### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

#### Asia Pacific

Tel: +81 3 5521 8600

#### Europe/Middle East/Africa

Tel: +41 22 717 51 11



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Vicat softening temperature, 50°C/h, 10N	107	°C	ISO 306
Coeff. of linear therm. expansion, parallel	150	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	170	E-6/K	ISO 11359-1/-2
Eff. thermal diffusivity	5.44E-8	m²/s	-
RTI, electrical, 1.5mm	50	°C	UL 746B
RTI, impact, 1.5mm	50	°C	UL 746B
RTI, strength, 1.5mm	50	°C	UL 746B
<b>Flammability</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Burning Behav. at 1.5mm nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	UL	-	-
Oxygen index	26	%	ISO 4589-1/-2
<b>Electrical properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
CTI, 23°C, 3.0mm	425	PLC	UL 746A
High Amperage Arc Ignition Resistance, 1.5 mm	200	arcs	UL 746A
<b>Other properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Density	1430	kg/m³	ISO 1183
Density of melt	1300	kg/m³	-
Water Absorption, Immersion 24h	1.9	%	ASTM D 570

Characteristics			
Processing	<ul style="list-style-type: none"> <li>• Injection Moulding</li> <li>• Film Extrusion</li> <li>• Profile Extrusion</li> </ul>	<ul style="list-style-type: none"> <li>• Sheet Extrusion</li> <li>• Other Extrusion</li> <li>• Coatable</li> </ul>	<ul style="list-style-type: none"> <li>• Casting</li> <li>• Thermoforming</li> </ul>
Delivery form	<ul style="list-style-type: none"> <li>• Pellets</li> </ul>		
Special characteristics	<ul style="list-style-type: none"> <li>• Light stabilised or stable to light</li> </ul>		
Regional Availability	<ul style="list-style-type: none"> <li>• North America</li> <li>• Europe</li> </ul>	<ul style="list-style-type: none"> <li>• Asia Pacific</li> <li>• South and Central America</li> </ul>	<ul style="list-style-type: none"> <li>• Near East/Africa</li> <li>• Global</li> </ul>

### Processing Texts

#### Injection molding

##### PREPROCESSING

Drying recommended = Yes  
Drying temperature = 80°C  
Drying time, dehumidified dryer = 2-3 h  
Processing moisture content = <0.08 %

##### PROCESSING

Melt temperature optimum = 200°C  
Mould temperature optimum = 40°C  
Mould temperature range = 30-40°C

#### Profile extrusion

##### PREPROCESSING

Drying recommended = Yes  
Drying temperature = 80°C  
Drying time, dehumidified dryer = 2-3 h  
Processing moisture content = <0.06 %

##### PROCESSING

Melt temperature optimum = 195°C



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### Chemical Media Resistance

#### Acids

- ✓ Acetic Acid (5% by mass) (23°C)
- ✓ Citric Acid solution (10% by mass) (23°C)
- ✓ Lactic Acid (10% by mass) (23°C)
- ✗ Hydrochloric Acid (36% by mass) (23°C)
- ✗ Nitric Acid (40% by mass) (23°C)
- ✗ Sulfuric Acid (38% by mass) (23°C)
- ✓ Sulfuric Acid (5% by mass) (23°C)
- ✗ Chromic Acid solution (40% by mass) (23°C)

#### Bases

- ✓ Sodium Hydroxide solution (35% by mass) (23°C)
- ✓ Sodium Hydroxide solution (1% by mass) (23°C)
- ✓ Ammonium Hydroxide solution (10% by mass) (23°C)

#### Alcohols

- ✓ Isopropyl alcohol (23°C)
- ✓ Methanol (23°C)
- ✓ Ethanol (23°C)

#### Hydrocarbons

- ✓ n-Hexane (23°C)
- ✓ Toluene (23°C)
- ✓ iso-Octane (23°C)

#### Ketones

- ✗ Acetone (23°C)

#### Ethers

- ✗ Diethyl ether (23°C)

#### Mineral oils

- ✓ SAE 10W40 multigrade motor oil (23°C)
- ✗ SAE 10W40 multigrade motor oil (130°C)
- ✗ SAE 80/90 hypoid-gear oil (130°C)
- ✓ Insulating Oil (23°C)

#### Standard Fuels

- ✗ ISO 1817 Liquid 1 (60°C)
- ✗ ISO 1817 Liquid 2 (60°C)
- ✗ ISO 1817 Liquid 3 (60°C)
- ✗ ISO 1817 Liquid 4 (60°C)
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)



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- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (90°C)
- ✗ Diesel fuel (pref. ISO 1817 Liquid F) (>90°C)

### Salt solutions

- ✓ Sodium Chloride solution (10% by mass) (23°C)
- ✗ Sodium Hypochlorite solution (10% by mass) (23°C)
- ✓ Sodium Carbonate solution (20% by mass) (23°C)
- ✓ Sodium Carbonate solution (2% by mass) (23°C)
- ✓ Zinc Chloride solution (50% by mass) (23°C)

### Other

- ✓ Ethyl Acetate (23°C)
- ✗ Hydrogen peroxide (23°C)
- ✗ DOT No. 4 Brake fluid (130°C)
- ✗ Ethylene Glycol (50% by mass) in water (108°C)
- ✓ 1% nonylphenoxy-polyethyleneoxy ethanol in water (23°C)
- ✓ 50% Oleic acid + 50% Olive Oil (23°C)
- ✓ Water (23°C)
- ✗ Water (90°C)
- ✓ Phenol solution (5% by mass) (23°C)

### Symbols used:

- ✓ possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).



- ✗ not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4.0mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2.0mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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