

# Hytel® HTR8745LV BK320 (PRELIMINARY)

## THERMOPLASTIC POLYESTER ELASTOMER

Common features of Hytel® 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 moulding and extrusion grades. Concentrates offered include black pigments, UV protection additives, heat stabilisers, and flame retardants. Hytel® thermoplastic polyester elastomer is plasticiser free.

The good melt stability of Hytel® 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.

Hytel® 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.

Hytel® HTR8745LV BK320 is a 43 Shore D, Heat Stabilized, Black, High Performance High Flow Polyester Elastomer with Excellent Fatigue Resistance Developed for Injection Moulding

### Product information

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

### Rheological properties

|                                  |                       |                 |
|----------------------------------|-----------------------|-----------------|
| Melt mass-flow rate              | 15 g/10min            | ISO 1133        |
| Melt mass-flow rate, Temperature | 230 °C                |                 |
| Melt mass-flow rate, Load        | 10 kg                 |                 |
| Moulding shrinkage, parallel     | 1.5 %                 | ISO 294-4, 2577 |
| Moulding shrinkage, normal       | 1.5 %                 | ISO 294-4, 2577 |
| Flow length                      | 160 <sup>[1]</sup> mm |                 |
| Flow length - pressure           | 180 MPa               |                 |
| Flow length - width/thickness    | 1 mm                  |                 |

[1]: spiral flow

### Typical mechanical properties

|  |                         |                        |
|--|-------------------------|------------------------|
| Tensile modulus                        | 111 <sup>[2]</sup> MPa  | ISO 527-1/-2           |
| Stress at 5% elongation                | 4.7 <sup>[3]</sup> MPa  | ISO 527-1/-2 or ISO 37 |
| Stress at 10% elongation               | 8 <sup>[3]</sup> MPa    | ISO 527-1/-2 or ISO 37 |
| Tensile stress at 50% elongation       | 12.8 <sup>[3]</sup> MPa | ISO 527-1/-2 or ISO 37 |
| Tensile stress at break                | 27 <sup>[3]</sup> MPa   | ISO 527-1/-2           |
| Tensile strain at break                | >300 <sup>[3]</sup> %   | ISO 527-1/-2           |
| Flexural modulus                       | 109 MPa                 | ISO 178                |
| Charpy notched impact strength, -30 °C | 102 kJ/m <sup>2</sup>   | ISO 179/1eA            |
| Charpy notched impact strength, -40 °C | 126 kJ/m <sup>2</sup>   | ISO 179/1eA            |
| Izod notched impact strength, -40 °C   | 88.0 kJ/m <sup>2</sup>  | ISO 180/1A             |
| Shore D hardness, 15s                  | 41                      | ISO 48-4 / ISO 868     |
| Shore D hardness, max                  | 43                      | ISO 868                |
| Tear strength, parallel                | 120 kN/m                | ISO 34-1               |
| Tear strength, normal                  | 140 kN/m                | ISO 34-1               |

[2]: Measured with injected 1BA bars at 1 mm/min

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[3]: Measured with injected 1BA bars at 50 mm/min

### Thermal properties

|   |        |                |
|---|--------|----------------|
| Melting temperature, 10°C/min           | 206 °C | ISO 11357-1/-3 |
| Glass transition temperature, 10°C/min  | -45 °C | ISO 11357-1/-3 |
| Freezing temperature, 10°C/min          | 167 °C | ISO 11357-1/-2 |
| Vicat softening temperature, 50°C/h 10N | 173 °C | ISO 306        |

### Flammability

|                              |            |                      |
|------------------------------|------------|----------------------|
| FMVSS Class                  | B          | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm | <80 mm/min | ISO 3795 (FMVSS 302) |

### Physical/Other properties

|         |                        |          |
|---------|------------------------|----------|
| Density | 1150 kg/m <sup>3</sup> | ISO 1183 |
|---------|------------------------|----------|

### Injection

|                                 |                        |
|---------------------------------|------------------------|
| Drying Recommended              | yes                    |
| Drying Temperature              | 110 °C                 |
| Drying Time, Dehumidified Dryer | 2 - 4 <sup>[4]</sup> h |
| Processing Moisture Content     | ≤0.08 %                |
| Melt Temperature Optimum        | 240 °C                 |
| Min. melt temperature           | 230 °C                 |
| Max. melt temperature           | 250 °C                 |
| Screw tangential speed          | Medium m/s             |
| Mold Temperature Optimum        | 45 °C                  |
| Min. mould temperature          | 45 °C                  |
| Max. mould temperature          | 55 °C                  |
| Ejection temperature            | 171 °C                 |

[4]: Prolonged drying and multiple drying are not recommended

### Extrusion

|                             |         |
|-----------------------------|---------|
| Processing Moisture Content | ≤0.06 % |
| Melt Temperature Optimum    | 240 °C  |

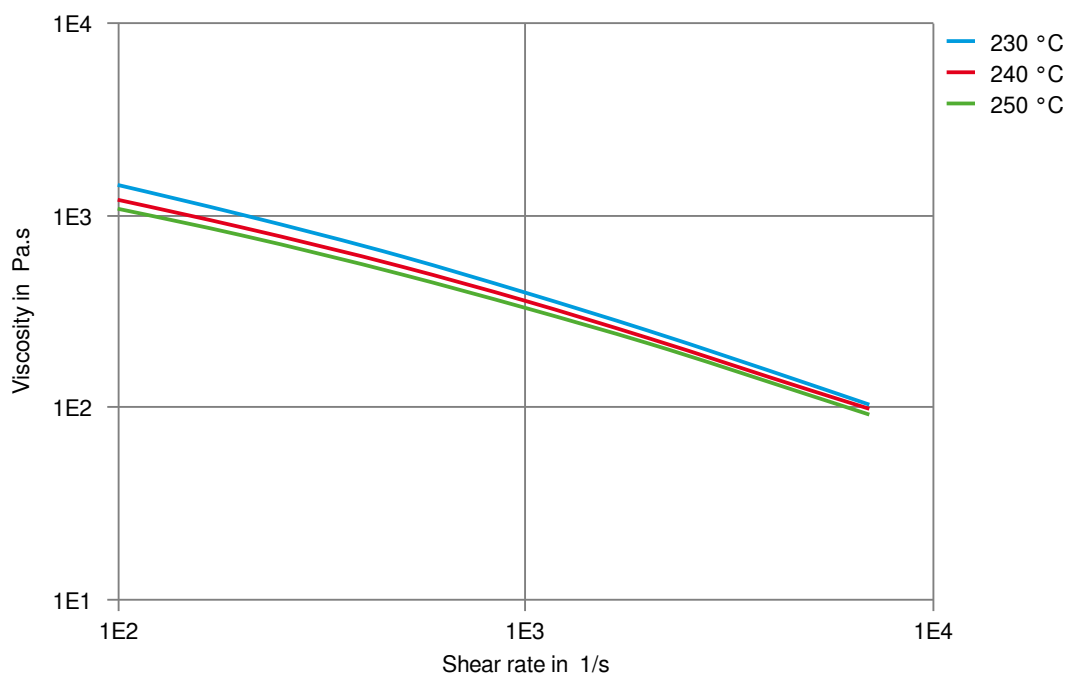
### Characteristics

|                         |   |
|-------------------------|---|
| Processing              | Injection Moulding, Extrusion, Sheet Extrusion, Other Extrusion, Coatable         |
| Delivery form           | Pellets   |
| Special characteristics | Light stabilised or stable to light, Heat stabilised or stable to heat, High Flow |

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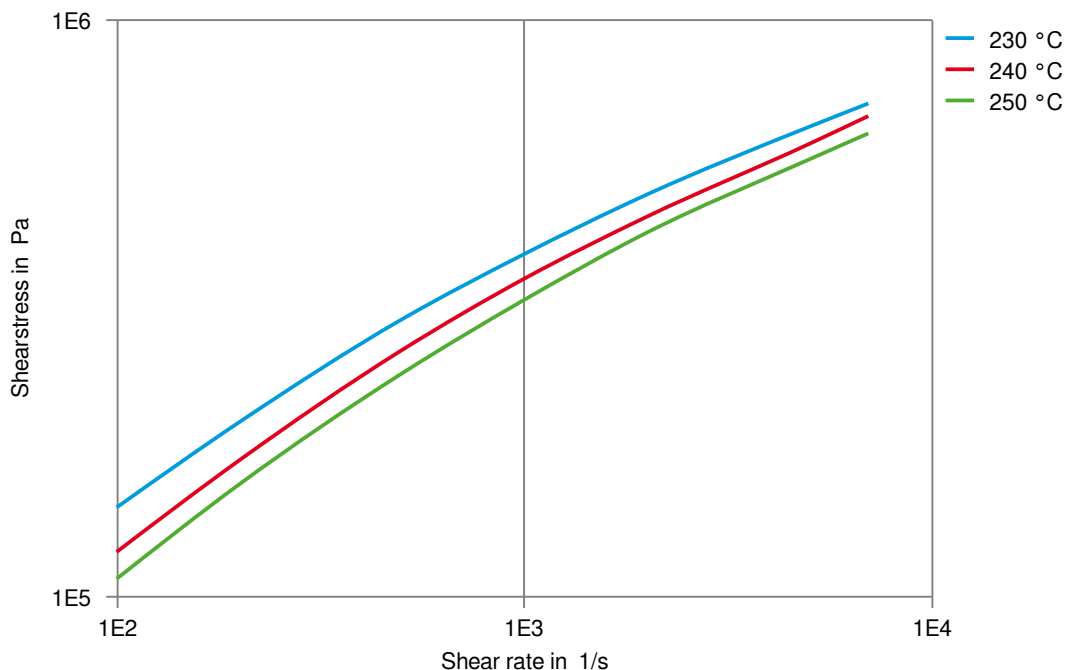
### Viscosity-shear rate



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### Shearstress-shear rate



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The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

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