DuPont™ Crastin® BM6450XD BK560

THERMOPLASTIC POLYESTER RESIN

Product Information

Common features of Crastin® thermoplastic polyester resin include mechanical and physical properties such as stiffness and toughness, heat resistance, friction and wear resistance, excellent surface finishes and good colourability. Crastin® thermoplastic polyester resin has excellent electrical insulation characteristics and high arc-resistant grades are available. Many flame retardant grades have UL recognition (class V-0). Crastin® thermoplastic polyester resin typically has high chemical and heat ageing resistance.

The good melt stability of Crastin® thermoplastic polyester resin 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.

Crastin® thermoplastic polyester resin typically is used in demanding applications in the electronics, electrical, automotive, mechanical engineering, chemical, domestic appliances and sporting goods industry.

Crastin® BM6450XD BK560 is an unreinforced supertough polybutylene terephthalate resin with very high viscosity for extrusion and blow moulding applications.

General information	Value	Unit	Test Standard
Resin Identification	PBT-F	-	ISO 1043
Part Marking Code	PBT-F	-	ISO 11469
Rheological properties	**Value**	**Unit**	**Test Standard**
Moulding shrinkage, parallel	1.5	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.7	%	ISO 294-4, 2577
Postmoulding shrinkage, normal, 48h at 80°C	0.15	%	ISO 294-4
Postmoulding shrinkage, parallel, 48h at 80°C	0.1	%	ISO 294-4
Mechanical properties	**Value**	**Unit**	**Test Standard**
Tensile Modulus	1600	MPa	ISO 527-1/-2
Yield stress	34	MPa	ISO 527-1/-2
Yield strain	9	%	ISO 527-1/-2
Nominal strain at break	>50	%	ISO 527-1/-2
Stress at Break, 23°C, 50mm/min	30	MPa	ISO 527-1/-2
Strain at Break, 23°C, 50mm/min	30	%	ISO 527-1/-2
Flexural Modulus	1600	MPa	ISO 178
Flexural Strength	50	MPa	ISO 178
Poisson's ratio	0.42	-	ISO 527-1/-2
Charpy impact strength			ISO 179/1eU
23°C	N	kJ/m²	
-30°C	N	kJ/m²	
Charpy notched impact strength			ISO 179/1eA
23°C	120	kJ/m²	
-30°C	10	kJ/m²	
-40°C	8	kJ/m²	
Izod notched impact strength			ISO 180/1A
23°C	90	kJ/m²	
-40°C	10	kJ/m²	
Thermal properties	**Value**	**Unit**	**Test Standard**
Melting temperature, 10°C/min	220	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	50	°C	
0.45 MPa	80	°C	
0.45 MPa, annealed	130	°C	
Thermal conductivity of melt	0.15	W/(m K)	-
Spec. heat capacity of melt	2210	J/(kg K)	-

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
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Europe/Middle East/Africa
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Flammability	Value	Unit	Test Standard
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	40	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	**Value**	**Unit**	**Test Standard**
Dissipation factor			IEC 62631-2-1
100Hz	70	E-4	
1MHz	200	E-4	
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	31	kV/mm	IEC 60243-1
Other properties	**Value**	**Unit**	**Test Standard**
Density	1210	kg/m³	ISO 1183
Density of melt	1030	kg/m³	-
Injection	**Value**	**Unit**	**Test Standard**
Drying Recommended	yes	-	-
Drying Temperature	≥120	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.04	%	-
Back pressure	As low as possible		-

Characteristics			
Processing	• Film Extrusion • Profile Extrusion • Sheet Extrusion	• Other Extrusion • Coatable • Blow Moulding	• Casting
Delivery form	• Pellets		
Additives	• Release agent		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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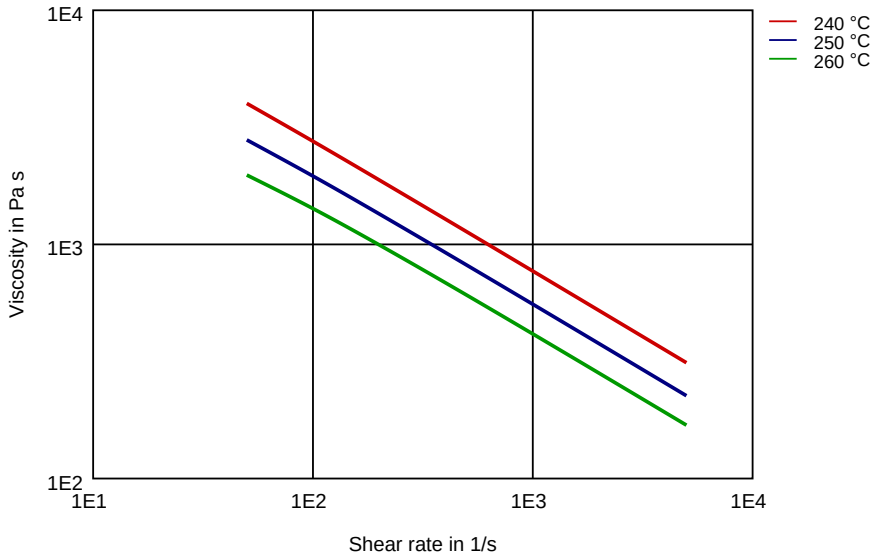
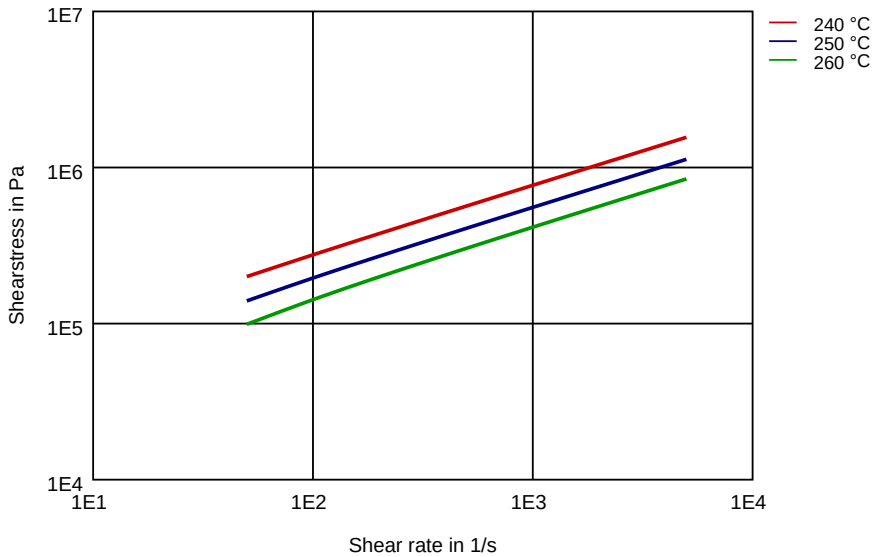
Diagrams

Viscosity-shear rate



Shearstress-shear rate



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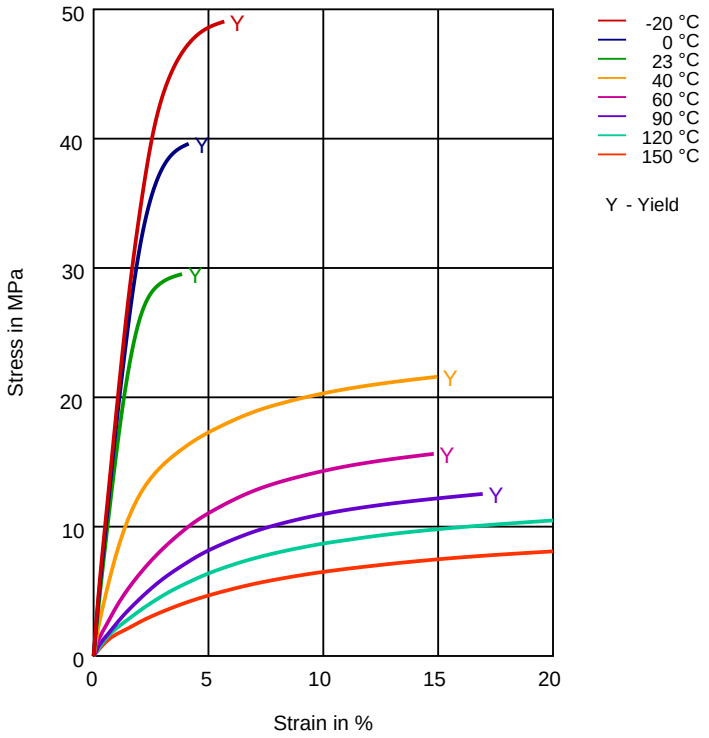
Stress-strain



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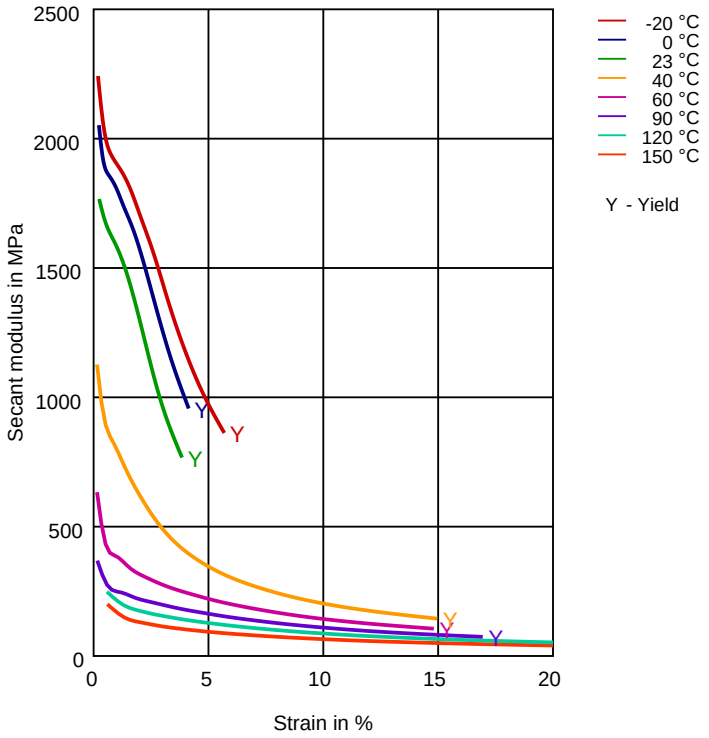
Secant modulus-strain



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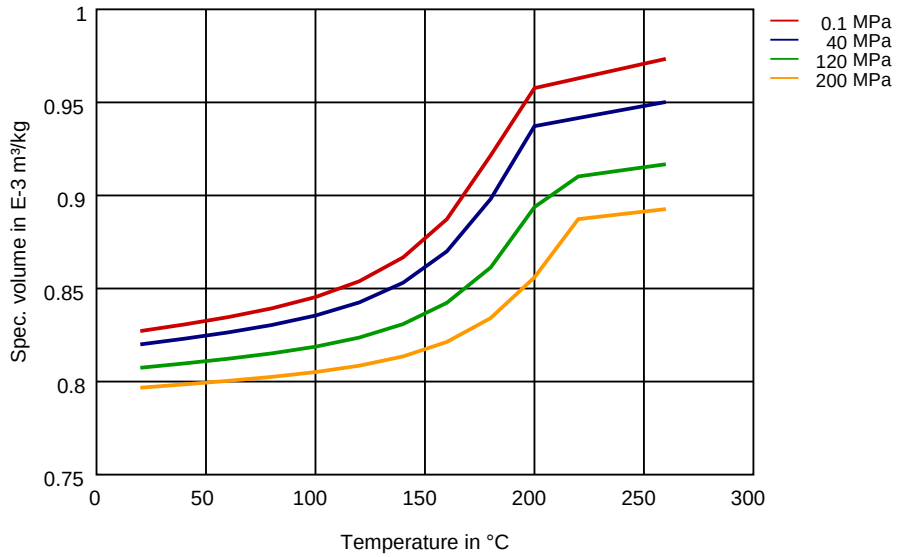
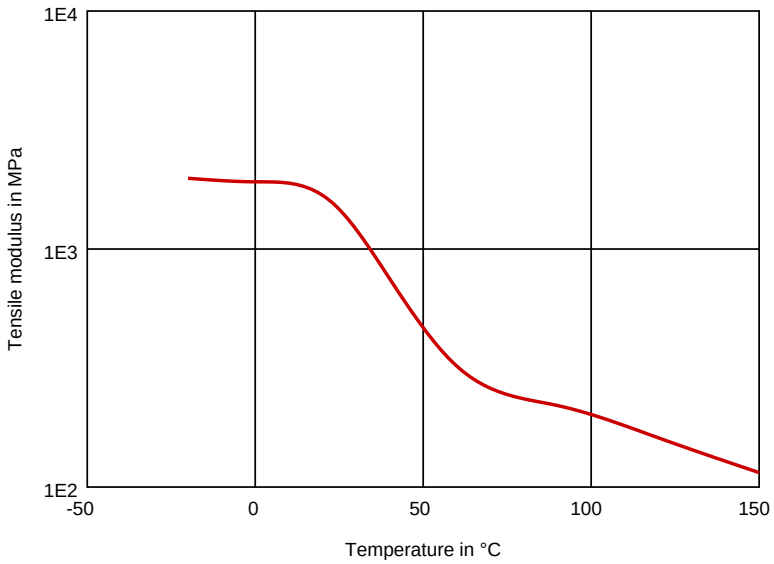
Specific volume-temperature (pvT)



Tensile modulus-temperature



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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 - E5 (60°C)
- ✗ ISO 1817 Liquid 2 - M15E4 (60°C)
- ✗ ISO 1817 Liquid 3 - M3E7 (60°C)
- ✗ ISO 1817 Liquid 4 - M15 (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 4mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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