

Crastin® FGS621F50 NC010 is an unreinforced, nucleated, low viscosity polybutylene terephthalate resin for injection molding. It has been developed for fast cycles and high productivity

into applications such as parts for the food and cosmetics industry.

Product information **Resin Identification** PBT ISO 1043 >PBT< Part Marking Code ISO 11469 **Rheological properties** 50 g/10min Melt mass-flow rate ISO 1133 Melt mass-flow rate, Temperature 250 °C 2.16 kg Melt mass-flow rate, Load Moulding shrinkage, parallel 1.8 % ISO 294-4, 2577 Moulding shrinkage, normal 1.8 % ISO 294-4, 2577 Typical mechanical properties Tensile modulus 2700 MPa ISO 527-1/-2 Tensile stress at yield, 50mm/min 60 MPa ISO 527-1/-2 Tensile strain at yield, 50mm/min 13 % ISO 527-1/-2 Tensile strain at break, 50mm/min 15 % ISO 527-1/-2 Charpy impact strength, 23°C 150 kJ/m² ISO 179/1eU Charpy notched impact strength, 23°C 4 kJ/m^2 ISO 179/1eA Poisson's ratio 0.38 Thermal properties 225 °C Melting temperature, 10°C/min ISO 11357-1/-3 55 °C Glass transition temperature, 10°C/min ISO 11357-1/-3 Temperature of deflection under load, 1.8 MPa 60 °C ISO 75-1/-2 160 °C Temperature of deflection under load, 0.45 MPa ISO 75-1/-2 ISO 11359-1/-2 Coefficient of linear thermal expansion (CLTE), 110 E-6/K normal 0.27 W/(m K) ISO 22007-2 Thermal conductivity, flow Specific heat capacity of melt 2290 J/(kg K) ISO 22007-4 Specific heat capacity solid ISO 22007-4 1320 J/(kg K) Flammability HB^[A] class Burning Behav. at 1.5mm nom. thickn. IEC 60695-11-10 **FMVSS Class** ISO 3795 (FMVSS 302) В Burning rate, Thickness 1 mm <80 mm/min ISO 3795 (FMVSS 302)

[A]: Assessed

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ISO 1183

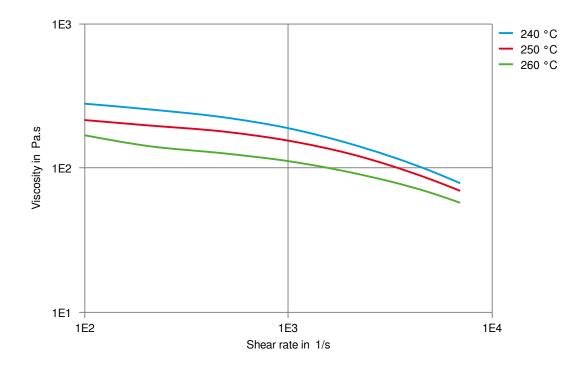
Crastin[®] FGS621F50 NC010 THERMOPLASTIC POLYESTER RESIN

Physical/Other properties

Thysical/Other properties		
Density	1320	kg/m³
Injection		
Drying Recommended	yes	
Drying Temperature	120	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.04	%
Melt Temperature Optimum	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°C
Mold Temperature Optimum	80	°C
Min. mould temperature	30	°C
Max. mould temperature	130	°C
Hold pressure range	≥60	MPa
Hold pressure time	4	s/mm
Back pressure	As low as	MPa
	possible	
Ejection temperature	170	°C

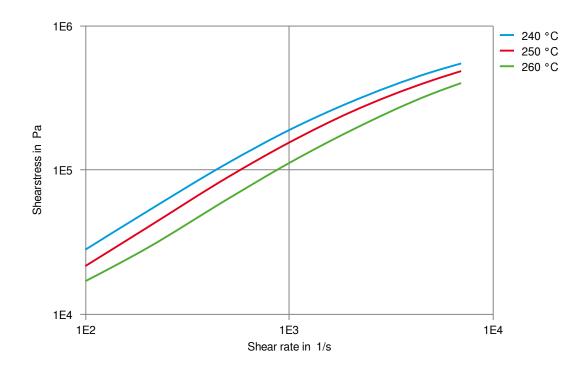


Viscosity-shear rate



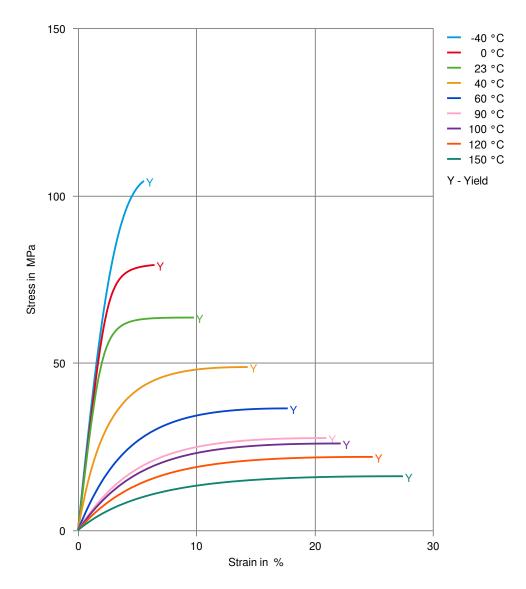


Shearstress-shear rate



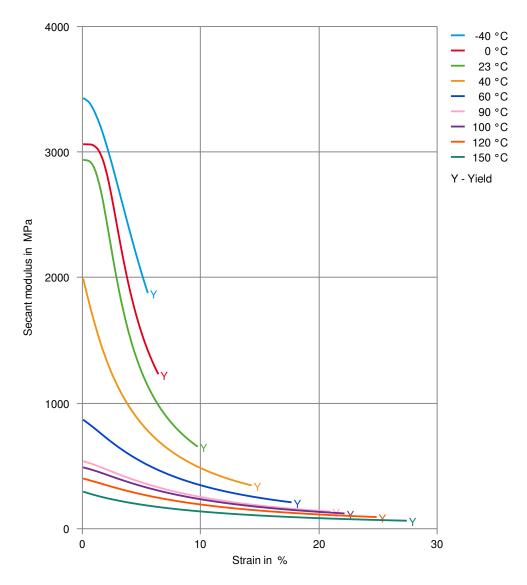


Stress-strain



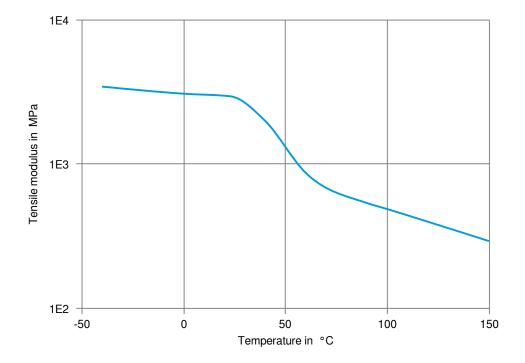


Secant modulus-strain





Tensile modulus-temperature





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THERMOPLASTIC POLYESTER RESIN

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
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23 °C
- X Sulfuric Acid (5% by mass), 23°C

Bases

- X 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
- X SAE 10W40 multigrade motor oil, 130°C
- X SAE 80/90 hypoid-gear oil, 130 °C
- ✓ Insulating Oil, 23°C

Standard Fuels

- X ISO 1817 Liquid 1 E5, 60°C
- X ISO 1817 Liquid 2 M15E4, 60°C
- X ISO 1817 Liquid 3 M3E7, 60°C
- X 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
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- X 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

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- 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
- X 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
- X 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).
- X 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).

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