# Crastin® FG6134 NC010

## THERMOPLASTIC POLYESTER RESIN

Crastin® FG6134 NC010 is an unreinforced, medium high viscosity polybutylene terephthalate resin for extrusion and injection moulding. It has been developed for consideration into applications such as parts for the food industry.

## FOOD CONTACT

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in Europe and the USA when meeting applicable use conditions. For details, individual compliance statements are available from your DuPont representative.

## Product information

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

## Rheological properties

| | | | |
|---|---|---|---|
| Melt mass-flow rate | 32 | g/10min | ISO 1133 |
| Melt mass-flow rate, Temperature | 250 | °C | ISO 1133 |
| Melt mass-flow rate, Load | 2.16 | kg | ISO 1133 |
| Intrinsic viscosity | 0.95 | - | ISO 307, 1157, 1628 |
| Moulding shrinkage, parallel | 1.6 | % | ISO 294-4, 2577 |
| Moulding shrinkage, normal | 1.6 | % | ISO 294-4, 2577 |

## Typical mechanical properties

| | | | |
|---|---|---|---|
| Tensile Modulus | 2600 | MPa | ISO 527-1/-2 |
| Yield stress | 59 | MPa | ISO 527-1/-2 |
| Yield strain | 4 | % | ISO 527-1/-2 |
| Nominal strain at break | 45 | % | ISO 527-1/-2 |
| Strain at break, 50mm/min | 90 | % | ISO 527-1/-2 |
| Flexural Strength | 85 | MPa | ISO 178 |
| Charpy notched impact strength, 23°C | 4 | kJ/m² | ISO 179/1eA |
| Izod notched impact strength, 23°C | 3.5 | kJ/m² | ISO 180/1A |
| Poisson's ratio | 0.38 | - | |

## Thermal properties

| | | | |
|---|---|---|---|
| Melting temperature, 10°C/min | 225 | °C | ISO 11357-1/-3 |
| Temp. of deflection under load, 1.8 MPa | 50 | °C | ISO 75-1/-2 |
| Temp. of deflection under load, 1.8 MPa, annealed | 60 | °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa | 115 | °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa, annealed | 180 | °C | ISO 75-1/-2 |

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## Flammability

| | | | |
|---|---|---|---|
| Burning Behav. at 1.5mm nom. thickn. | HB | class | IEC 60695-11-10 |
| Thickness tested | 1.5 | mm | IEC 60695-11-10 |
| Oxygen index | 22 | % | ISO 4589-1/-2 |
| FMVSS Class | B | - | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm | <80 | mm/min | ISO 3795 (FMVSS 302) |

## Other properties

| | | | |
|---|---|---|---|
| Density | 1300 | kg/m³ | ISO 1183 |

## 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 possible | MPa |
| Ejection temperature | 170 | °C |

## Extrusion

| | | |
|---|---|---|
| Drying Temperature | 110 - 130 | °C |
| Drying Time, Dehumidified Dryer | 2 - 4 | h |
| Processing Moisture Content | ≤0.04 | % |
| Melt Temperature Optimum | 250 | °C |
| Melt Temperature Range | 240 - 260 | °C |

## 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

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- ✗ 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
- ✓ 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

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- ✗ 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).