Rynite® 408 NC010

THERMOPLASTIC POLYESTER RESIN

Rynite® 408 NC010 is a 30% Glass Reinforced, Toughened, Polyethylene Terephthalate with Excellent Impact Resistance

Product information

Resin Identification	PET-IGF30	ISO 1043
Part Marking Code	>PET-IGF30<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.8	%	ISO 294-4, 2577
Postmoulding shrinkage, normal, 48h at 80°C	0.25	%	ISO 294-4
Postmoulding shrinkage, parallel, 48h at 80°C	0.1	%	ISO 294-4

Typical mechanical properties

Tensile Modulus	9300	MPa	ISO 527-1/-2
Stress at break	125	MPa	ISO 527-1/-2
Strain at break	3.3	%	ISO 527-1/-2
Flexural Modulus	8300	MPa	ISO 178
Compressive strength	150	MPa	ISO 604
Charpy impact strength, 23°C	70	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	86	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	14	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	12	kJ/m²	ISO 179/1eA
Hardness, Rockwell, M-scale	70	-	ISO 2039-2
Hardness, Rockwell, R-scale	115	-	ISO 2039-2
Poisson's ratio	0.34	-	

Thermal properties

Melting temperature, 10°C/min	250	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	220	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	237	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	15	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	85	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm	140	°C	UL 746B
RTI, electrical, 1.5mm	140	°C	UL 746B
RTI, electrical, 3mm	140	°C	UL 746B
RTI, impact, 0.75mm	140	°C	UL 746B
RTI, impact, 1.5mm	140	°C	UL 746B
RTI, impact, 3mm	140	°C	UL 746B
RTI, strength, 0.75mm	140	°C	UL 746B
RTI, strength, 1.5mm	140	°C	UL 746B

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RTI, strength, 3mm	140	°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.75	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Oxygen index	22	%	ISO 4589-1/-2
Glow Wire Flammability Index, 0.4mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 0.75mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3mm	800	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	700	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 0.4mm	700	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1mm	700	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	700	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3mm	800	°C	IEC 60695-2-13
Glow Wire Temperature, No Flame, 0.75mm	700	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 1mm	700	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 1.5mm	700	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 3mm	800	°C	IEC 60335-1
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	24	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 1MHz	3.3	-	IEC 62631-2-1
Dissipation factor, 1MHz	150	E-4	IEC 62631-2-1
Volume resistivity	1E13	Ohm.m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	43	kV/mm	IEC 60243-1

Other properties

Density	1490	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	120	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.02[1]	%
Melt Temperature Optimum	285	°C
Min. melt temperature	270	°C

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Max. melt temperature	290	°C
Max. screw tangential speed	0.2	m/s
Mold Temperature Optimum	95	°C
Min. mould temperature	75	°C
Max. mould temperature	95	°C
Hold pressure range	≥80	MPa
Hold pressure time	4	s/mm
Back pressure	As low as possible	MPa
Ejection temperature	170	°C

[1]: At levels above 0.02%, strength and toughness will decrease, even though parts may not exhibit surface defects.

Characteristics

Additives	Release agent

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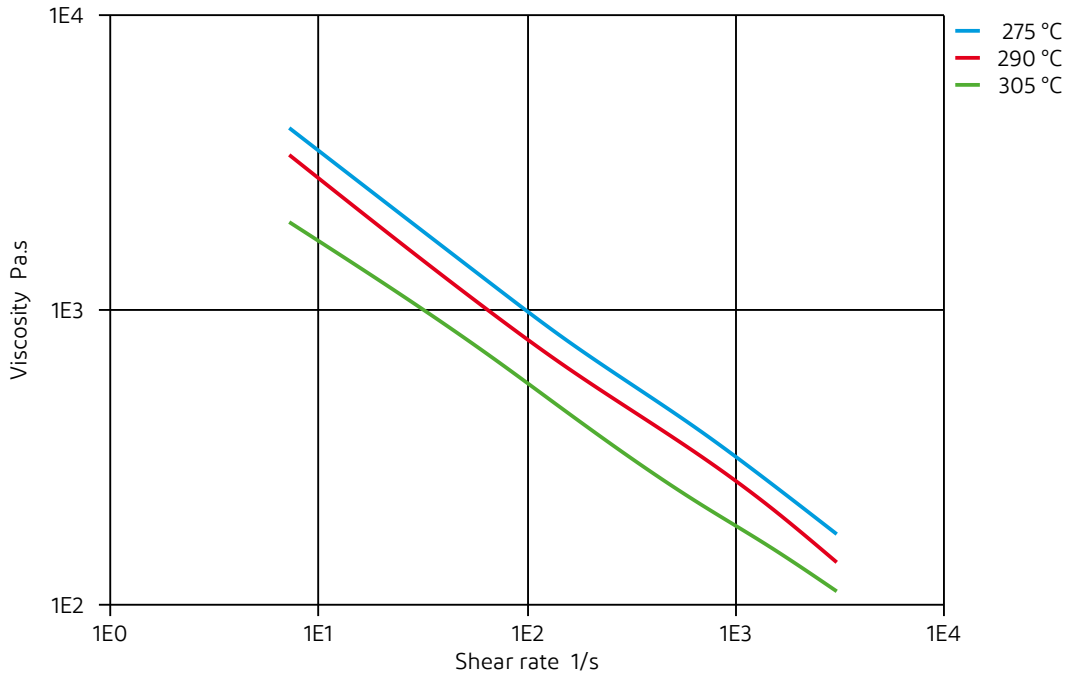
Viscosity-shear rate



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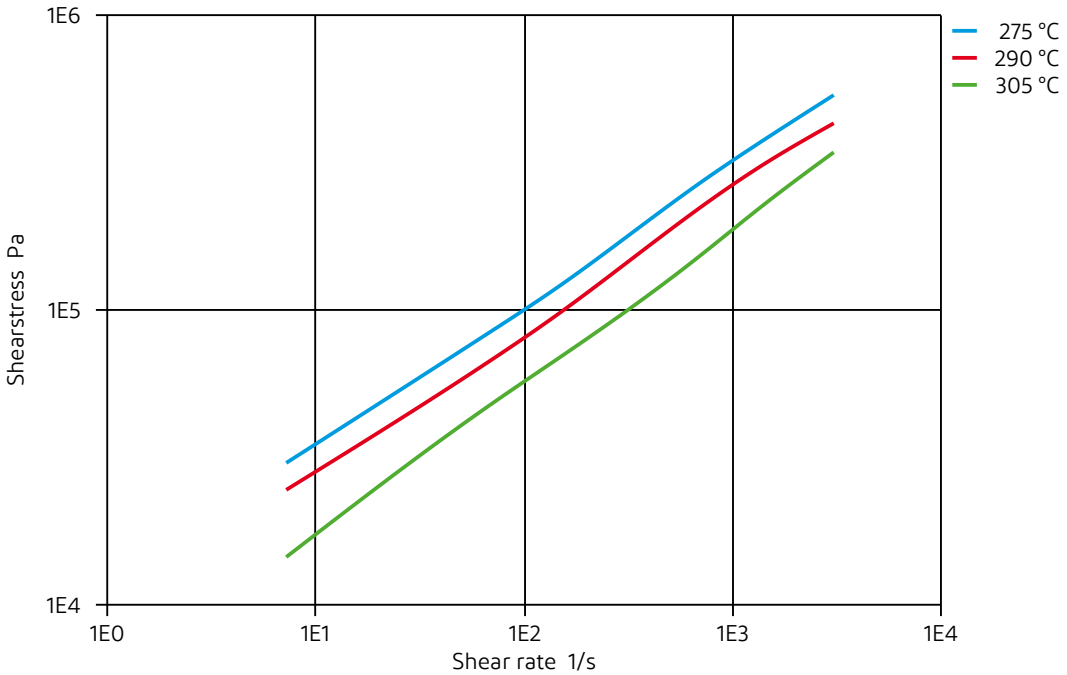
Shearstress-shear rate



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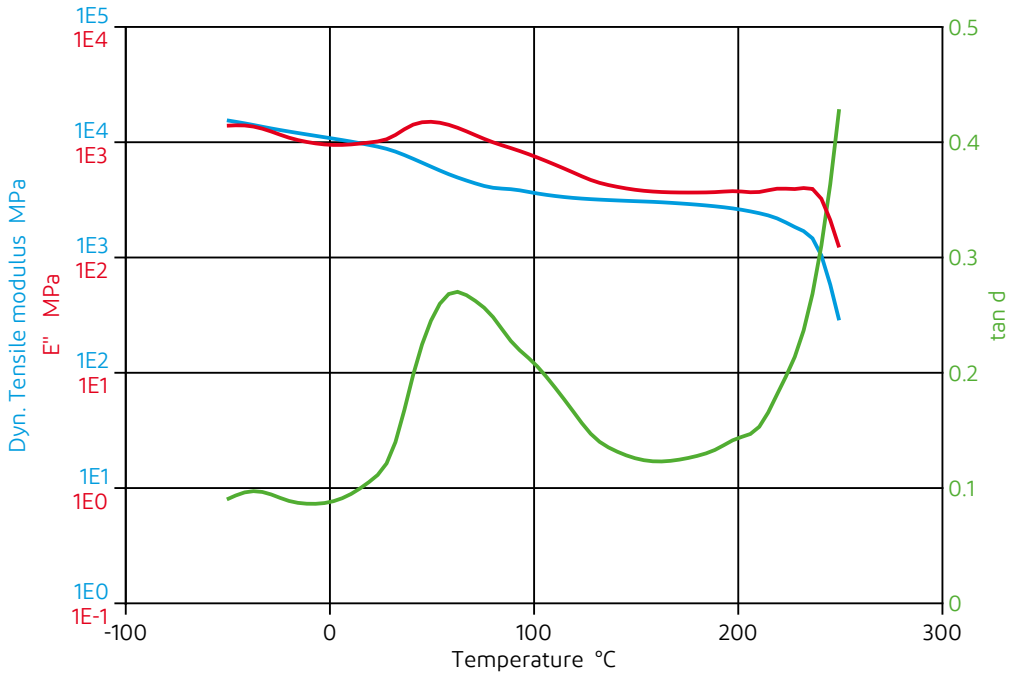
Dynamic Tensile modulus-temperature



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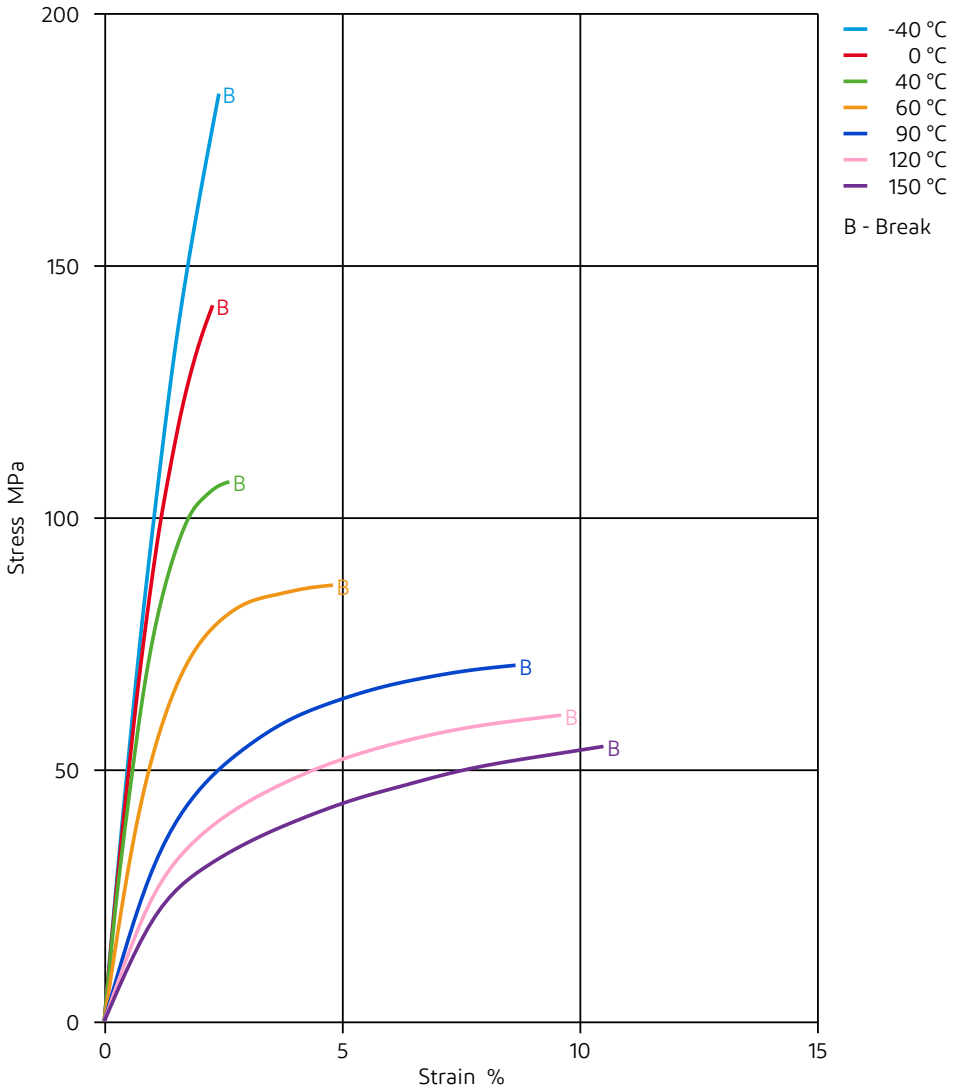
Stress-strain



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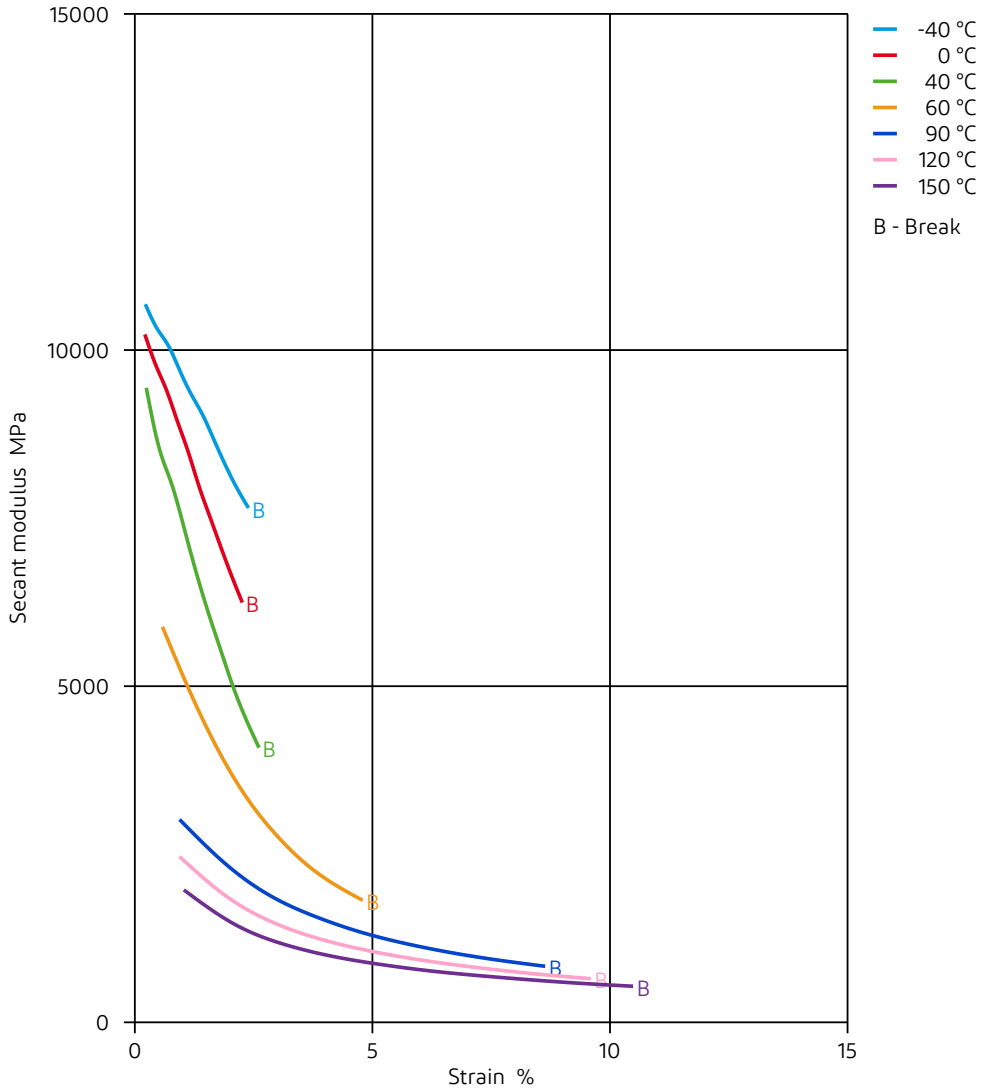
Secant modulus-strain



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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
- ✔ 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

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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).