Crastin® SK609 NC010

THERMOPLASTIC POLYESTER RESIN

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, 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.

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® SK609 NC010 is a 50% glass fiber reinforced, lubricated polybutylene terephthalate resin for injection molding.

Product information

Resin Identification	PBT-GF50	ISO 1043
Part Marking Code	>PBT-GF50<	ISO 11469
Infrared spectrum	available	

Rheological properties

Melt volume-flow rate	2	cm^3/10min	ISO 1133
Temperature	482	°F	
Load	4.76	lb	
Melt mass-flow rate	3	g/10min	ISO 1133
Melt mass-flow rate, Temperature	482	°F	
Melt mass-flow rate, Load	4.76	lb	
Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577
Molding shrinkage, normal	1.1	%	ISO 294-4, 2577
Postmolding shrinkage, normal, 48h at 80°C	0.2	%	ISO 294-4
Postmolding shrinkage, parallel, 48h at 80°C	0.1	%	ISO 294-4

Typical mechanical properties

Tensile modulus	2.47E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	23900	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.8	%	ISO 527-1/-2
Flexural modulus	2.18E6	psi	ISO 178
Flexural strength	33400	psi	ISO 178
Tensile creep modulus, 1h	2.18E6	psi	ISO 899-1
Tensile creep modulus, 1000h	1.68E6	psi	ISO 899-1
Charpy impact strength, 23°C	26.2	$ftlb/in^2$	ISO 179/1eU
Charpy impact strength, -30°C	30.9	$ftlb/in^2$	ISO 179/1eU
Charpy notched impact strength, 23°C	5.47	$ftlb/in^2$	ISO 179/1eA
Charpy notched impact strength, -30°C	5.71	$ftlb/in^2$	ISO 179/1eA
Izod notched impact strength, 23°C	4.76	$ftlb/in^2$	ISO 180/1A
Izod notched impact strength, -30°C	4.76	$ftlb/in^2$	ISO 180/1A
Izod impact strength, 23°C	20.5	$ftlb/in^2$	ISO 180/1U
Izod impact strength, -30°C	20.5	$ftlb/in^2$	ISO 180/1U

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Thermal properties

Melting temperature, 10°C/min	435	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	131	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	410	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	432	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	419	°F	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	0.11	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.444	E-4/°F	ISO 11359-1/-2
Thermal conductivity of melt	0.36	W/(m K)	ISO 22007-2
Specific heat capacity of melt	1470	J/(kg K)	ISO 22007-4
RTI, electrical, 0.75mm	266	°F	UL 746B
RTI, electrical, 1.5mm	266	°F	UL 746B
RTI, electrical, 3.0mm	266	°F	UL 746B
RTI, electrical, 6mm	266	°F	UL 746B
RTI, impact, 0.75mm	257	°F	UL 746B
RTI, impact, 1.5mm	257	°F	UL 746B
RTI, impact, 3.0mm	257	°F	UL 746B
RTI, impact, 6mm	257	°F	UL 746B
RTI, strength, 0.75mm	266	°F	UL 746B
RTI, strength, 1.5mm	266	°F	UL 746B
RTI, strength, 3.0mm	266	°F	UL 746B
RTI, strength, 6mm	266	°F	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	0.0591	in	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.0295	in	IEC 60695-11-10
UL recognition	yes		UL 94
Oxygen index	20	%	ISO 4589-1/-2
Glow Wire Flammability Index, 3.0mm	1380	°F	IEC 60695-2-12
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	1.06	in/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 100Hz	4.1		IEC 62631-2-1
Relative permittivity, 1MHz	3.9		IEC 62631-2-1
Dissipation factor, 100Hz	38	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	130	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm.m	IEC 62631-3-1
Electric strength	838	kV/in	IEC 60243-1
Comparative tracking index	500		IEC 60112
Electric Strength, Short Time, 2mm	356	V/mil	IEC 60243-1

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Physical/Other properties

Humidity absorption, 2mm	0.1	%	Sim. to ISO 62
Water absorption, 2mm	0.2	%	Sim. to ISO 62
Density	0.0621	lb/in³	ISO 1183
Density of melt	99.9	lb/ft³	

Emissions

Fogging, G-value (condensate)	0	mg	ISO 6452

Injection

Drying Recommended	yes	
Drying Temperature	248	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.04	%
Melt Temperature Optimum	500	°F
Min. melt temperature	482	°F
Max. melt temperature	518	°F
Mold Temperature Optimum	176	°F
Min. mold temperature	140	°F
Max. mold temperature	266	°F
Hold pressure range	≥8700	psi
Hold pressure time	0.0762	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s
Back pressure	as low as possible	psi
Ejection temperature	356	°F

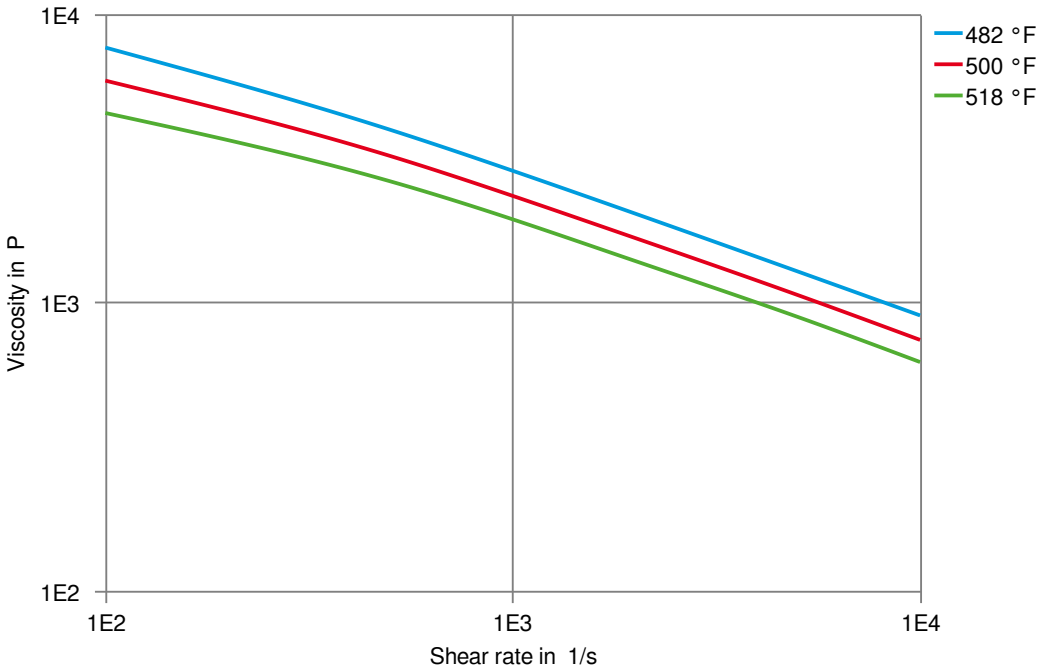
Characteristics

Processing	Injection Molding
Additives	Release agent

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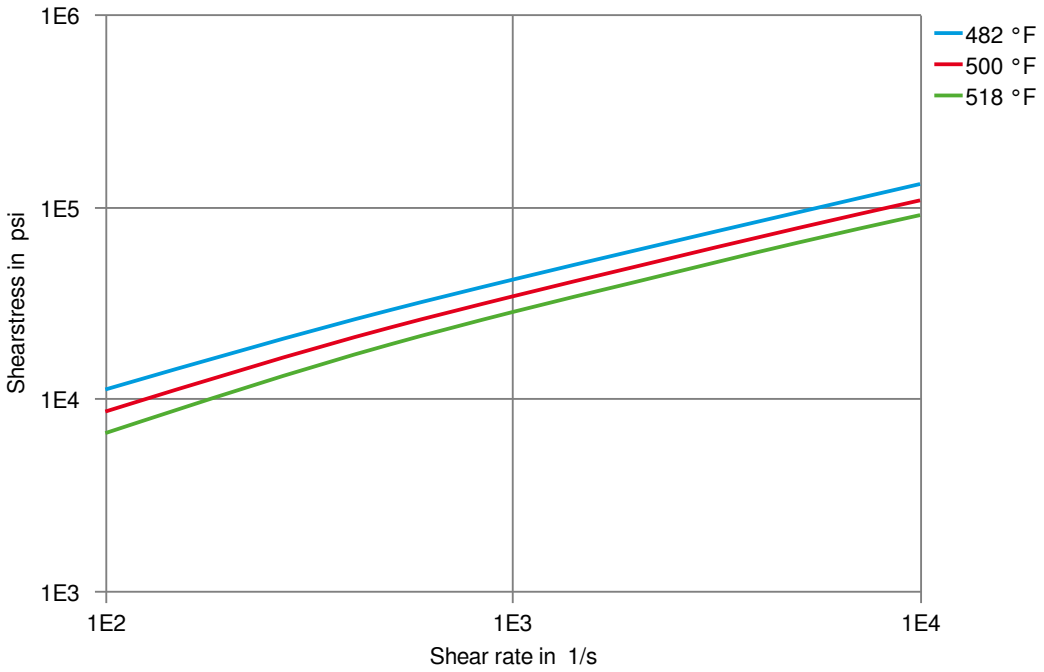
Viscosity-shear rate



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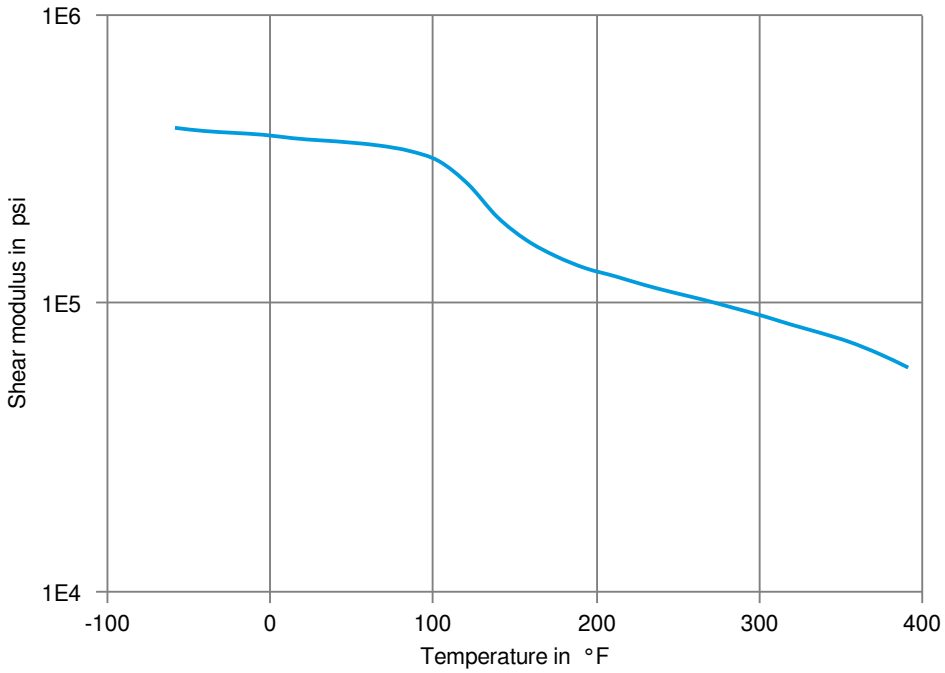
Shearstress-shear rate



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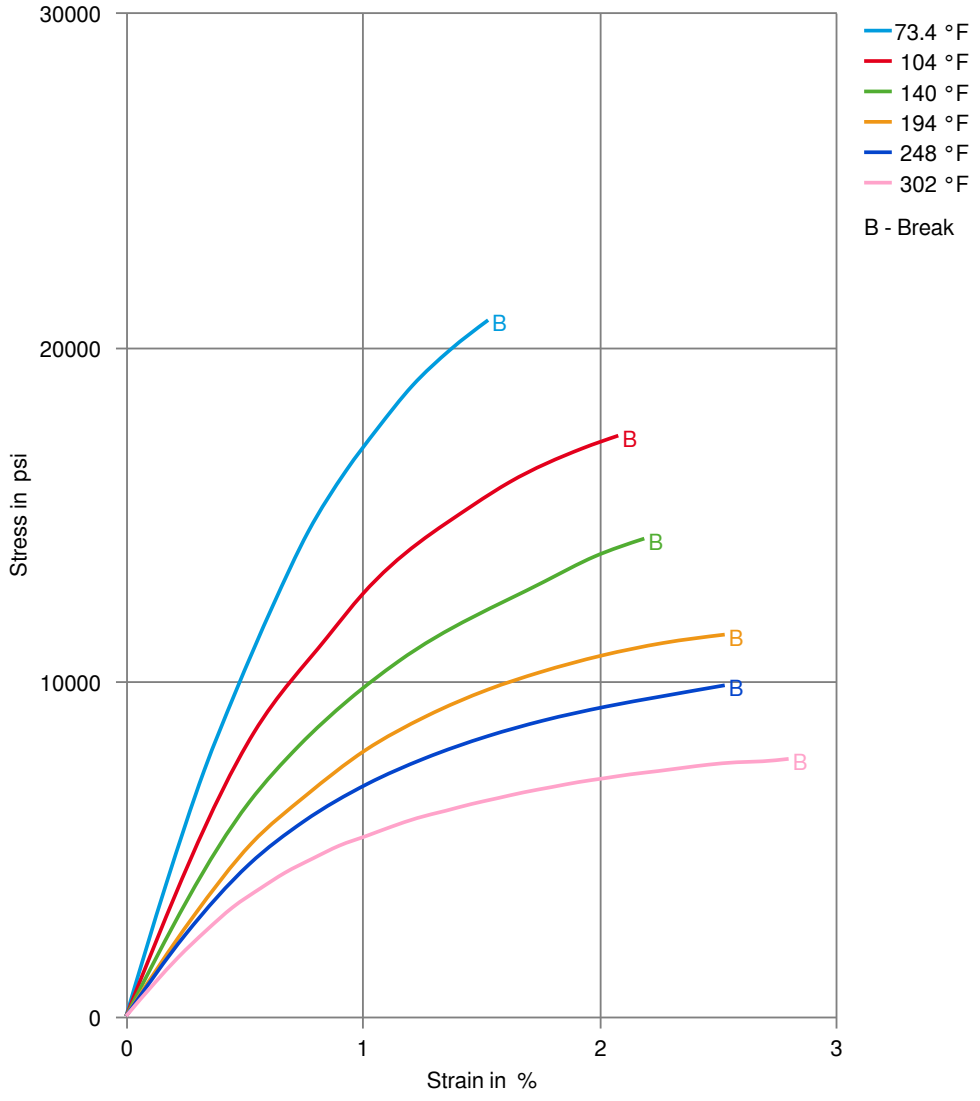
Dynamic Shear modulus-temperature



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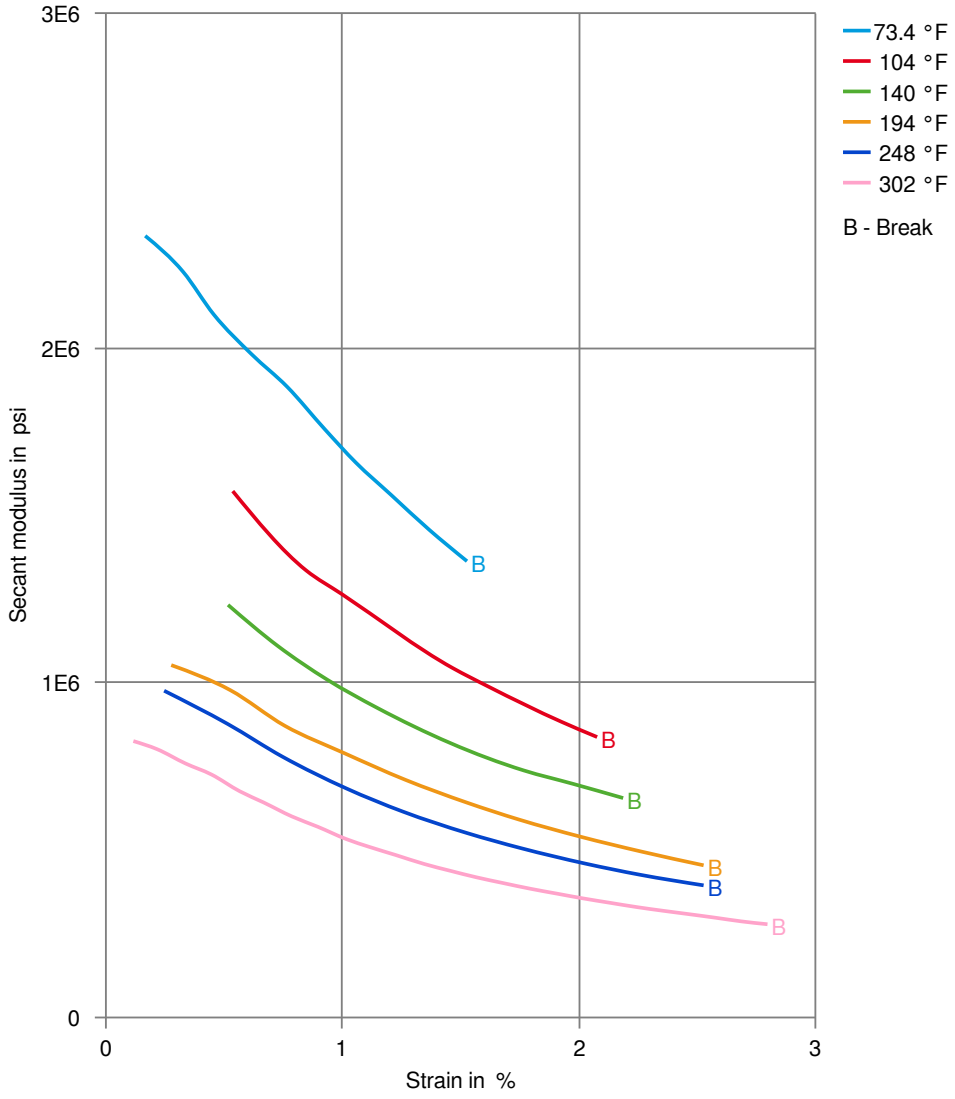
Stress-strain



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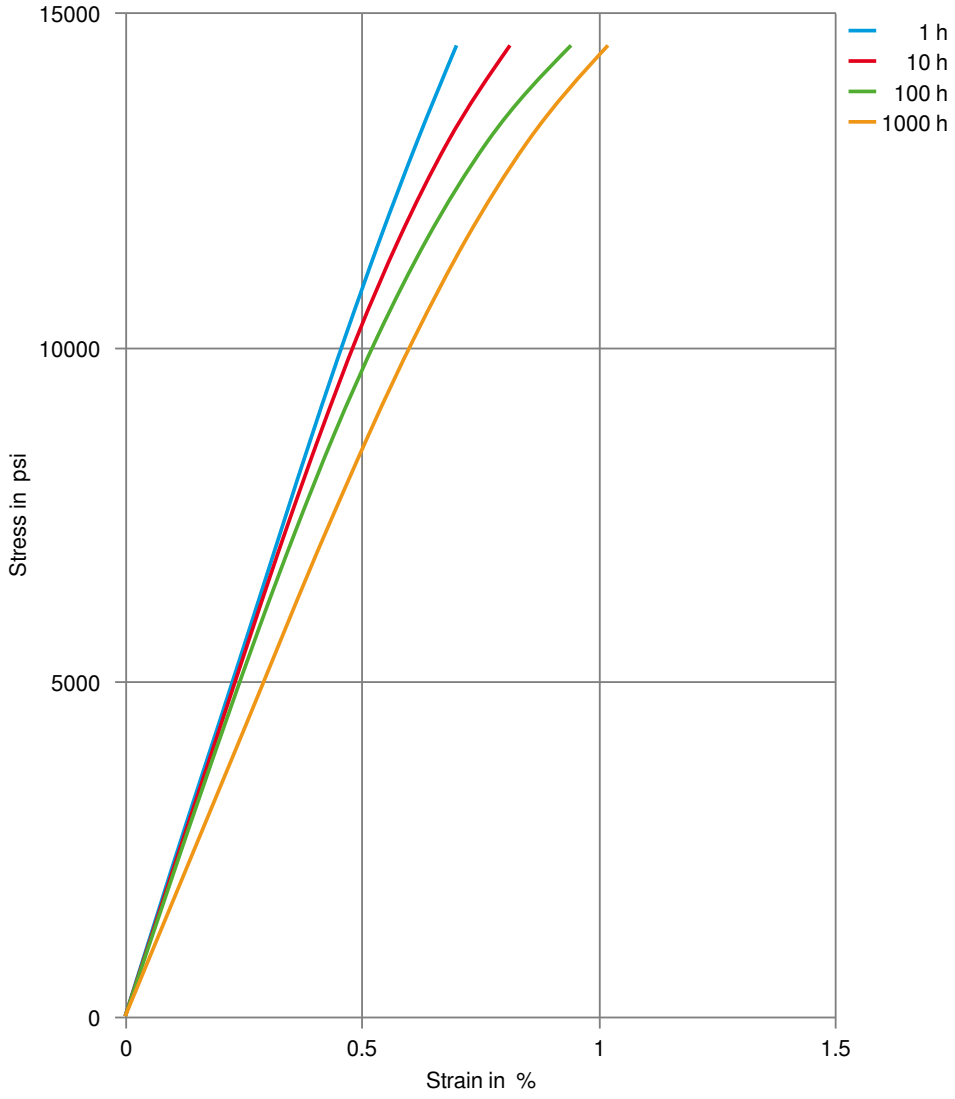
Secant modulus-strain



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THERMOPLASTIC POLYESTER RESIN

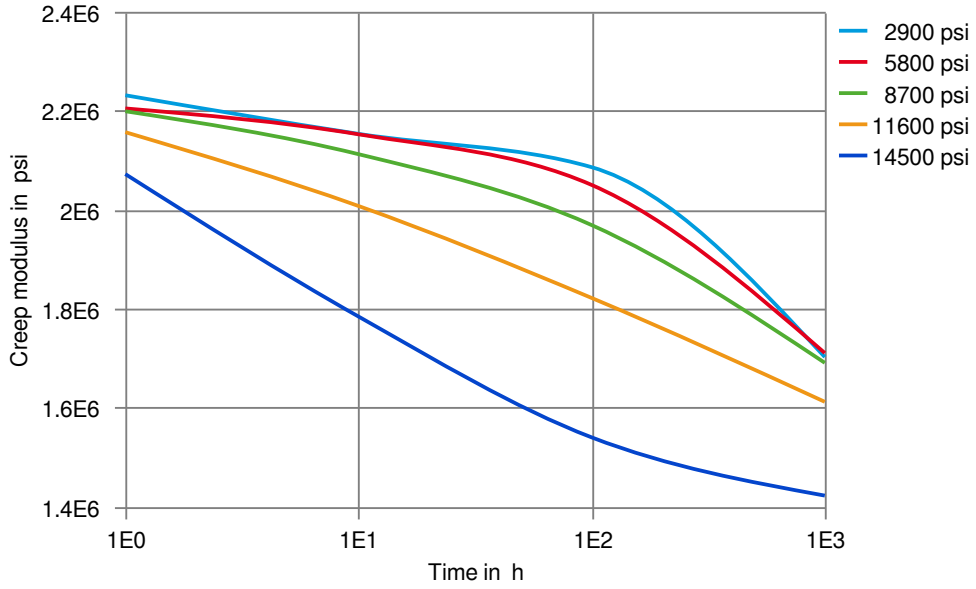
Stress-strain (isochronous) 73.4 °F



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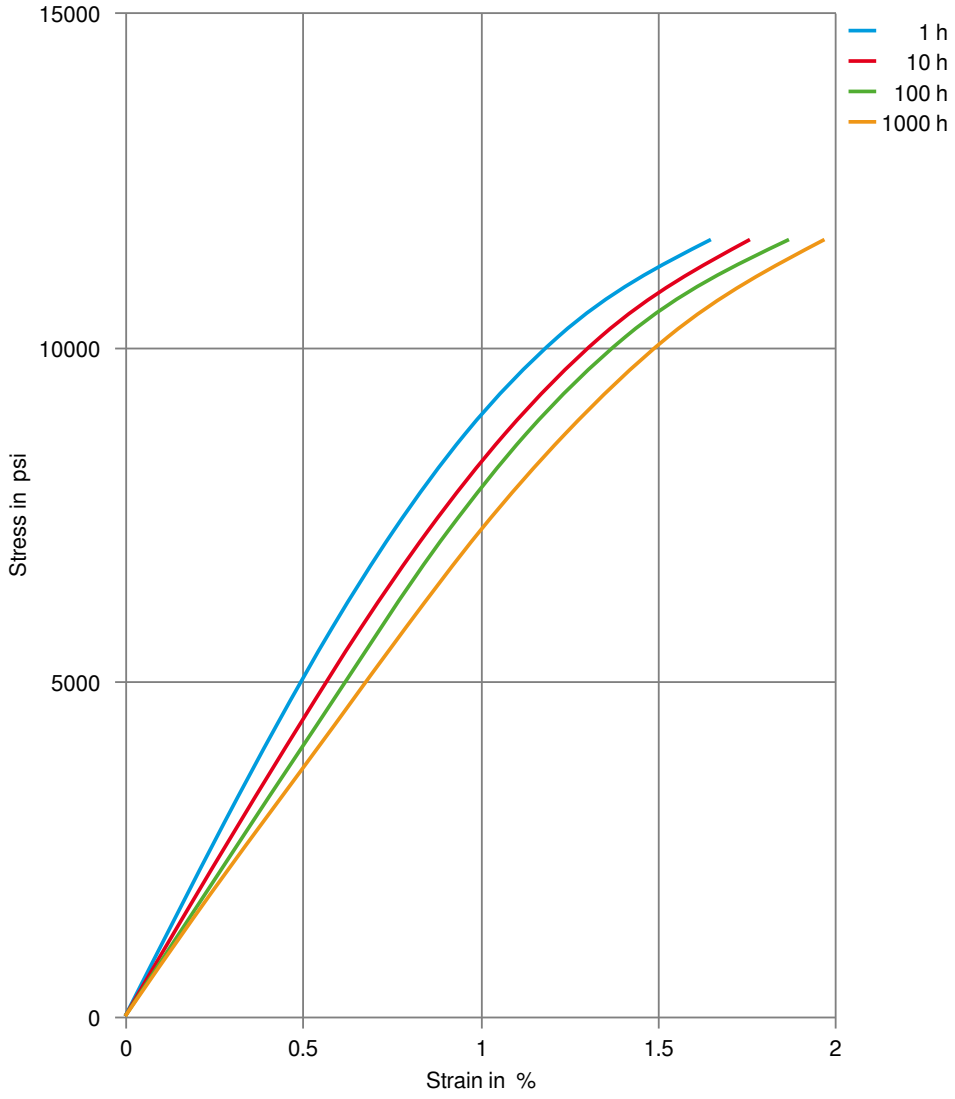
Creep modulus-time 73.4 °F



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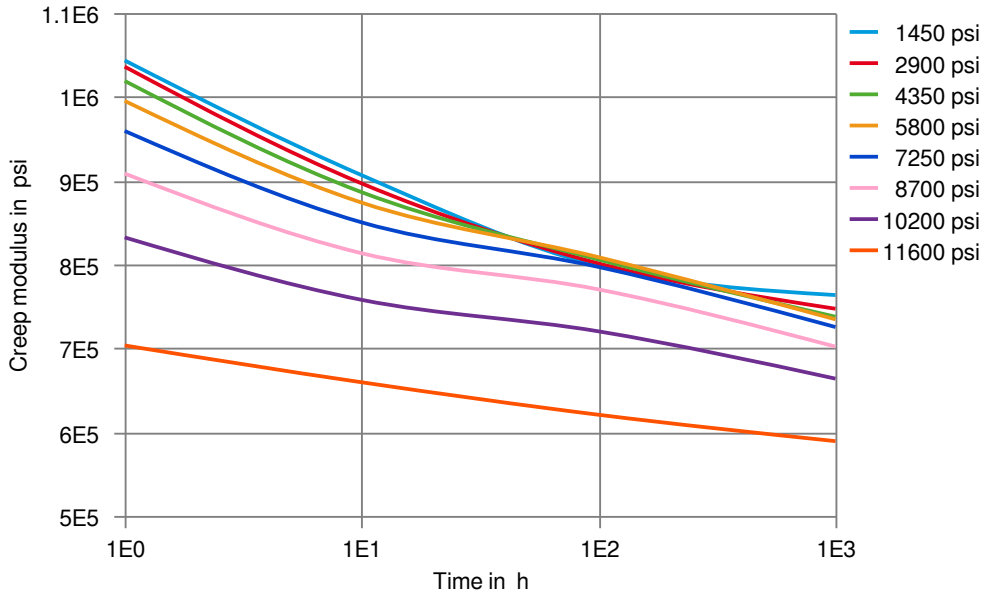
Stress-strain (isochronous) 140 °F



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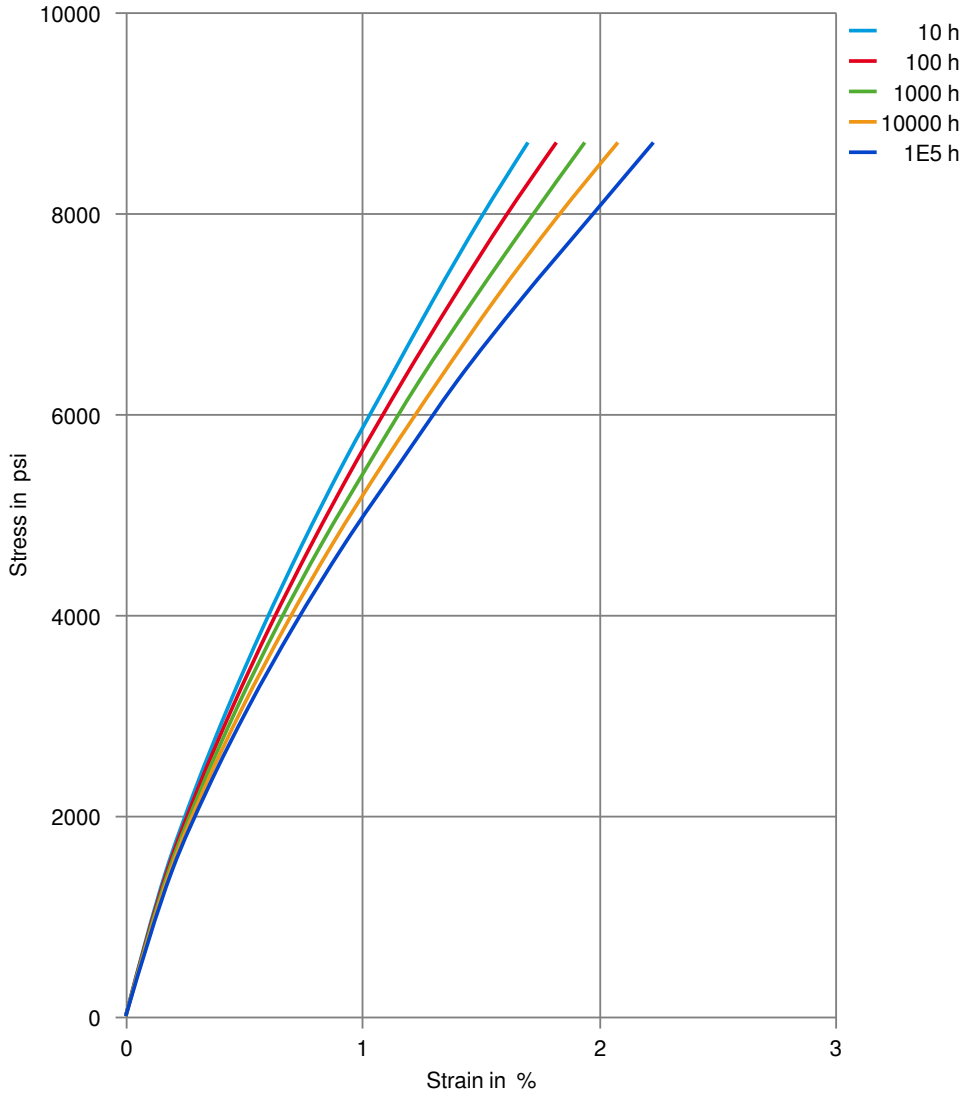
Creep modulus-time 140 °F



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THERMOPLASTIC POLYESTER RESIN

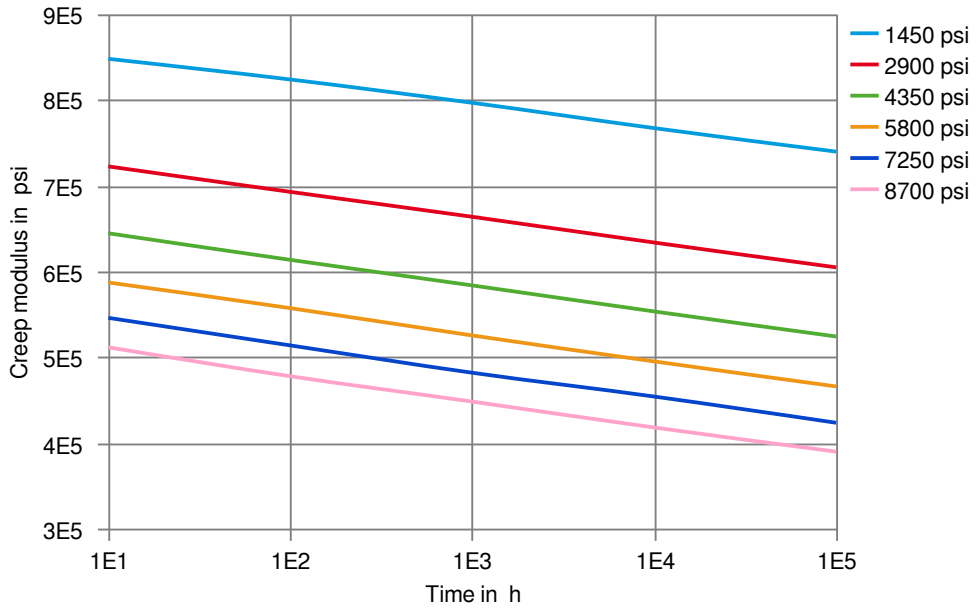
Stress-strain (isochronous) 194 °F



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Creep modulus-time 194 °F



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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

Salt solutions

- ✔ Sodium Chloride solution (10% by mass), 23°C
- ✔ Sodium Hypochlorite solution (10% by mass), 23°C

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- ✔ 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).

Revised: 2026-08-12 Source: Celanese Materials Database

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