

Zytel® 70G25EF NC010 (PRELIMINARY)

NYLON RESIN

Zytel® 70G25EF NC010 is a 25% glass reinforced polyamide 66 developed for electrical and electronics applications.

Product information

Resin Identification	PA66-GF25	ISO 1043
Part Marking Code	>PA66-GF25<	ISO 11469

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.1 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	8500 / 6000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	170 / 110	MPa	ISO 527-1/-2
Strain at break, 5mm/min	3 / 5	%	ISO 527-1/-2
Flexural Modulus	7000 / 5000	MPa	ISO 178
Flexural Strength	260 / 190	MPa	ISO 178
Charpy impact strength, 23°C	60 / 80	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	55 / 55	kJ/m ²	ISO 179/1eU
Charpy impact strength, -40°C	55 / 55	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	10 / 12	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	9 / 8	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -40°C	9 / 8	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.34 / 0.35		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	260 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	80 / 25	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	241 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	28 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	30 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	19 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	73 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	90 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	146 / *	E-6/K	ISO 11359-1/-2
TGA curve	available		ISO 11359-1/-2



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Flammability

Burning Behav. at 1.5mm nom. thickn.	dry/cond.		
Thickness tested	HB / * ^[DS]	class	UL 94
Oxygen index	1.5 / *	mm	UL 94
FMVSS Class	22 / *	%	ISO 4589-1/-2
Burning rate, Thickness 1 mm	B		ISO 3795 (FMVSS 302)
	23	mm/min	ISO 3795 (FMVSS 302)

[DS]: Derived from similar grade

Electrical properties

Volume resistivity	dry/cond.		
Comparative tracking index	>1E13 / 1E11 ^[DS]	Ohm.m	IEC 62631-3-1
	500 / -		IEC 60112

[DS]: Derived from similar grade

Other properties

Humidity absorption, 2mm	dry/cond.		
Water absorption, 2mm	2 / *	%	Sim. to ISO 62
Density	6.4 / *	%	Sim. to ISO 62
	1320 / -	kg/m ³	ISO 1183

Injection

Drying Recommended	yes		
Drying Time, Dehumidified Dryer	2 - 4	h	
Processing Moisture Content	≤0.2	%	
Melt Temperature Optimum	295	°C	Internal
Min. melt temperature	285	°C	
Max. melt temperature	305	°C	
Screw tangential speed	≤0.2	m/s	
Mold Temperature Optimum	100	°C	
Min. mould temperature	70	°C	
Max. mould temperature	120	°C	
Hold pressure range	50 - 100	MPa	
Hold pressure time	3	s/mm	
Ejection temperature	210	°C	Internal

Characteristics

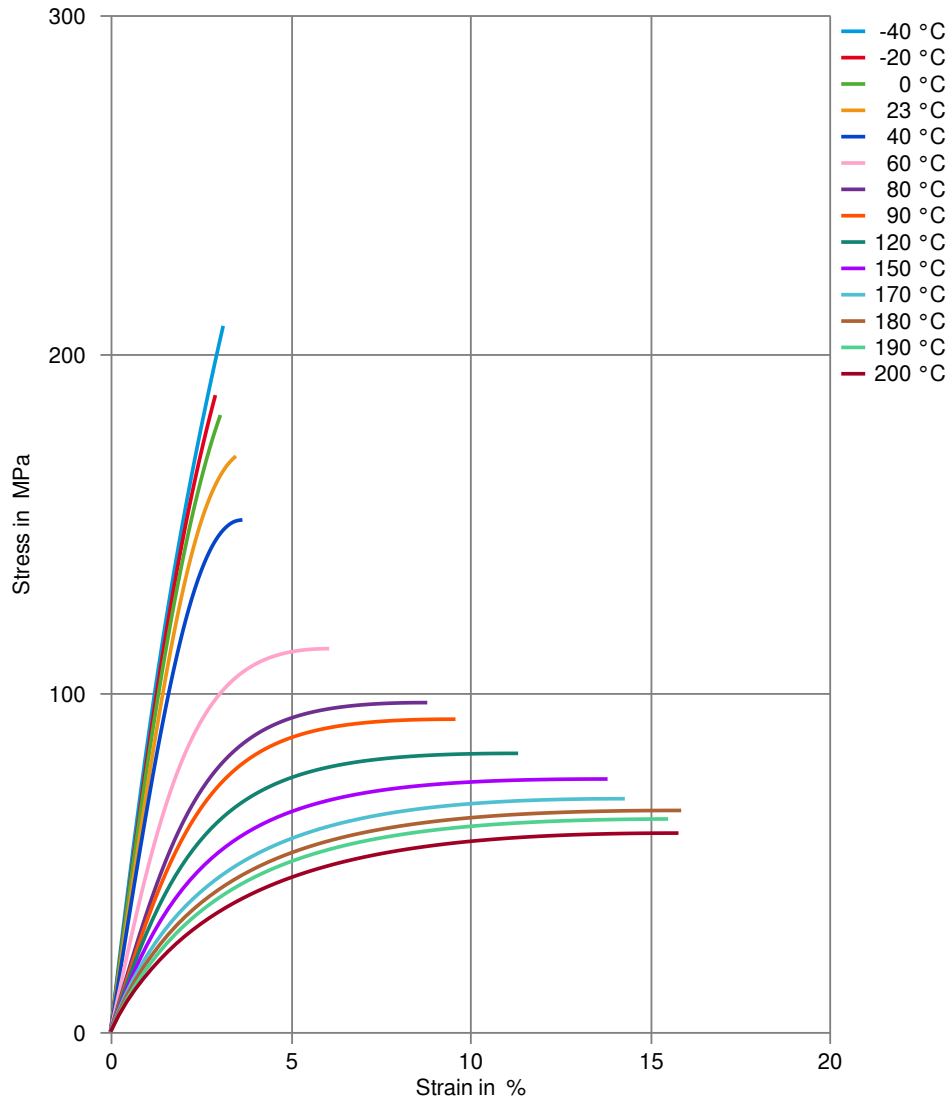
Additives	Release agent, Low halide content
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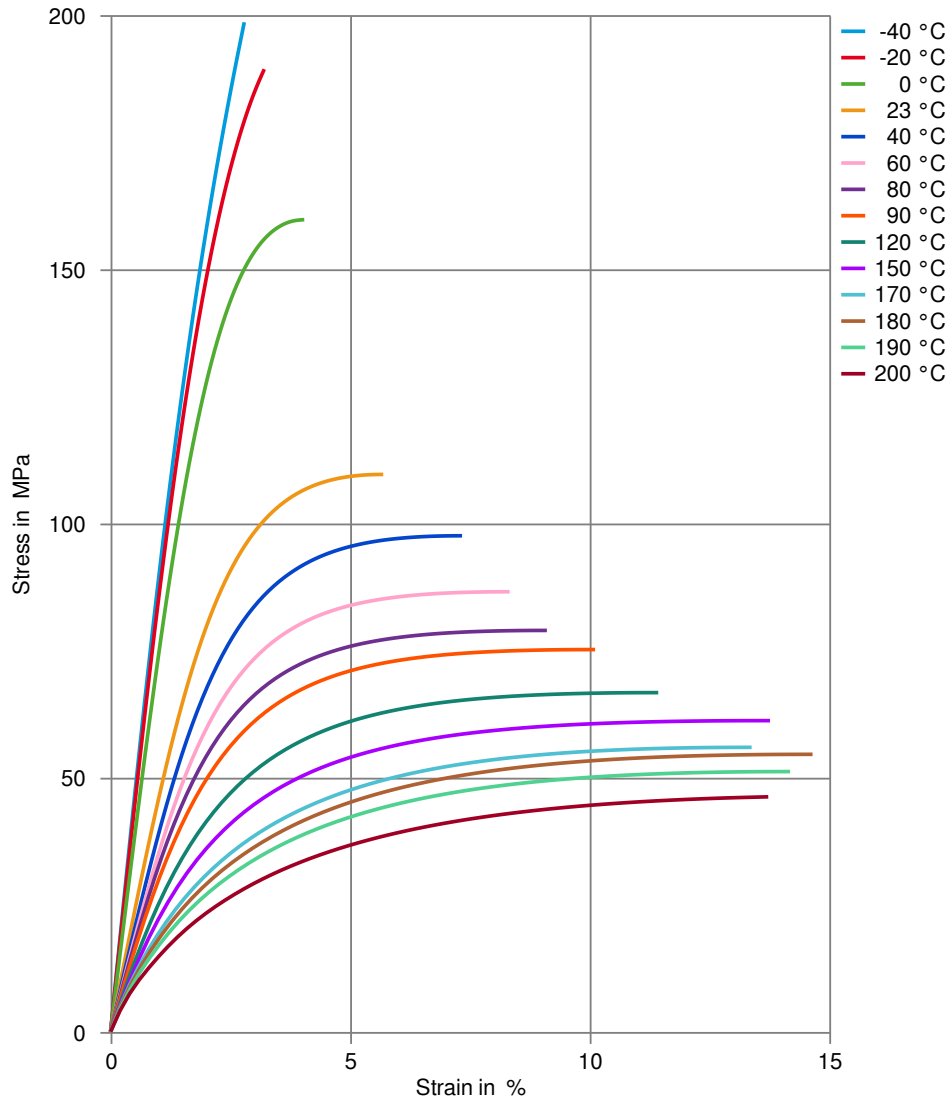
Stress-strain (dry)



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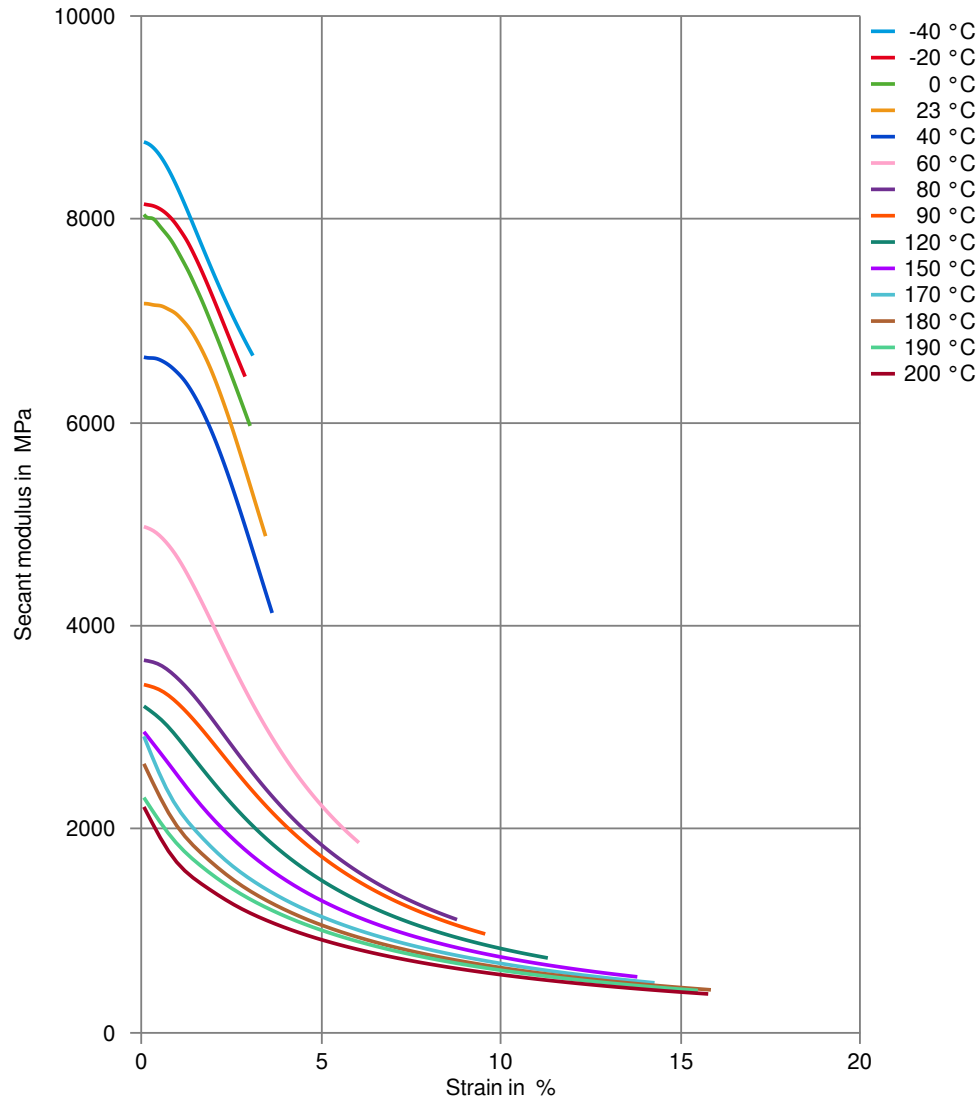
Stress-strain (cond.)



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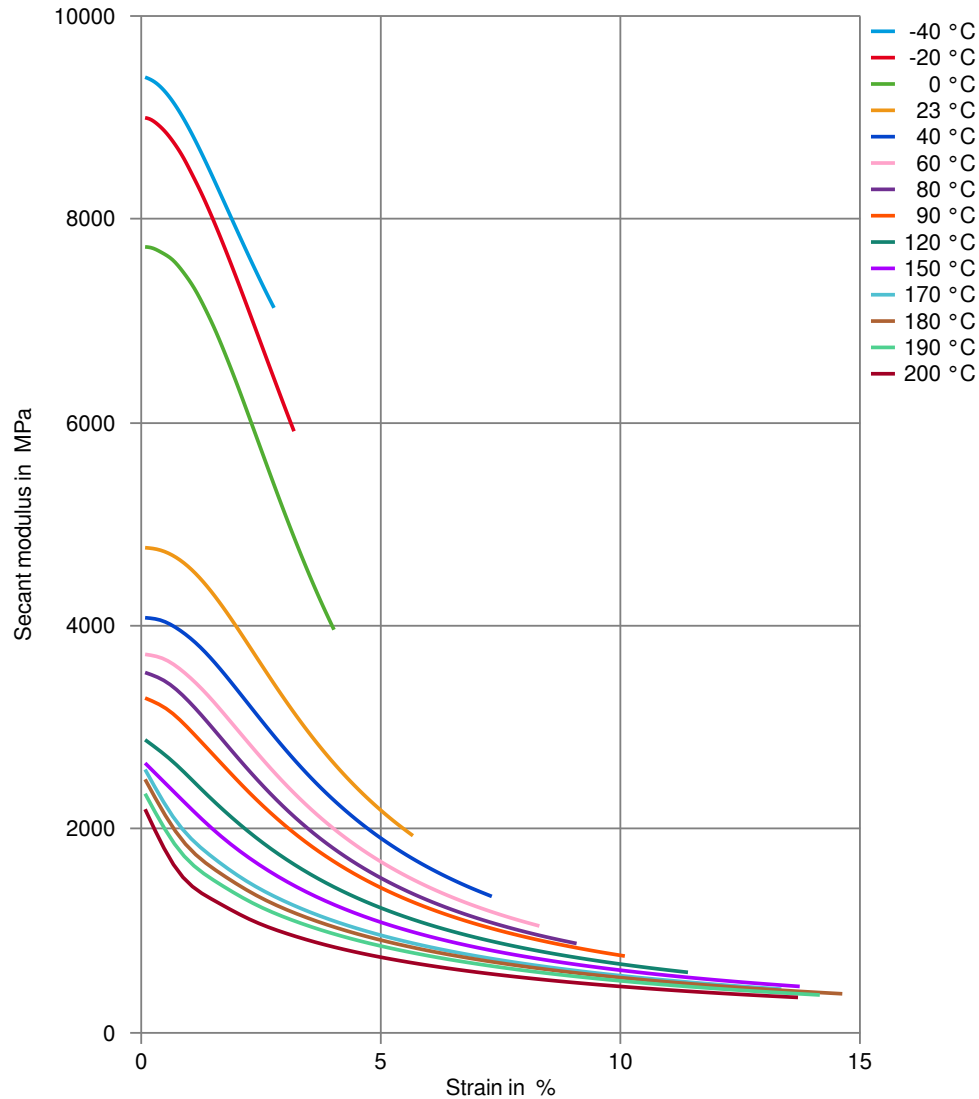
Secant modulus-strain (dry)



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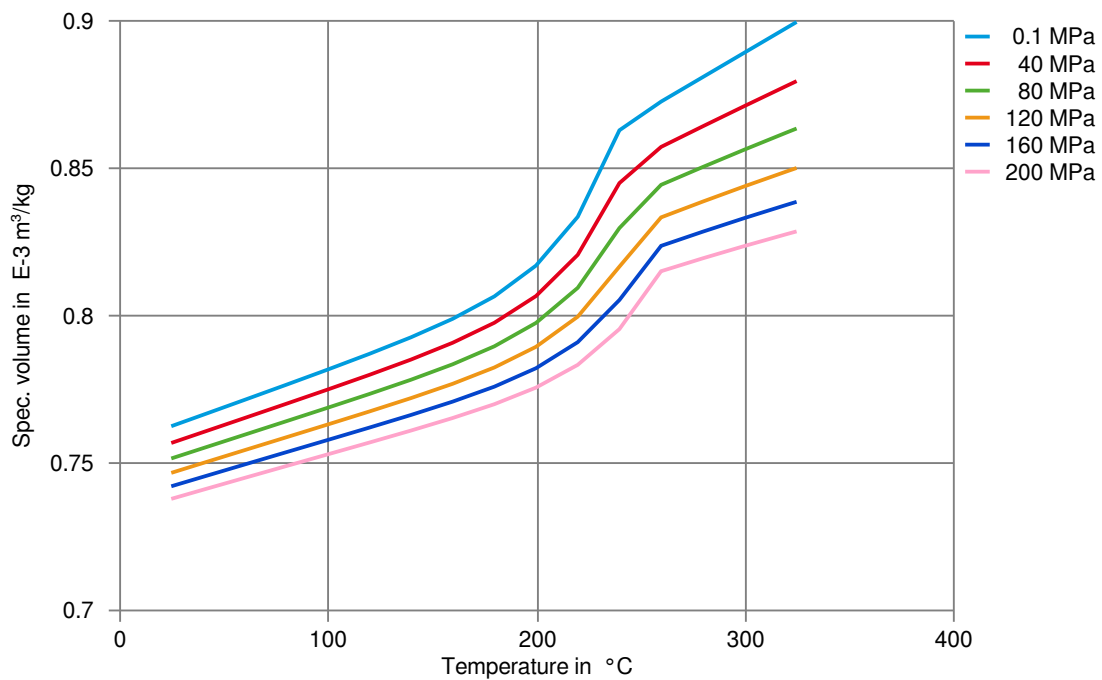
Secant modulus-strain (cond.)



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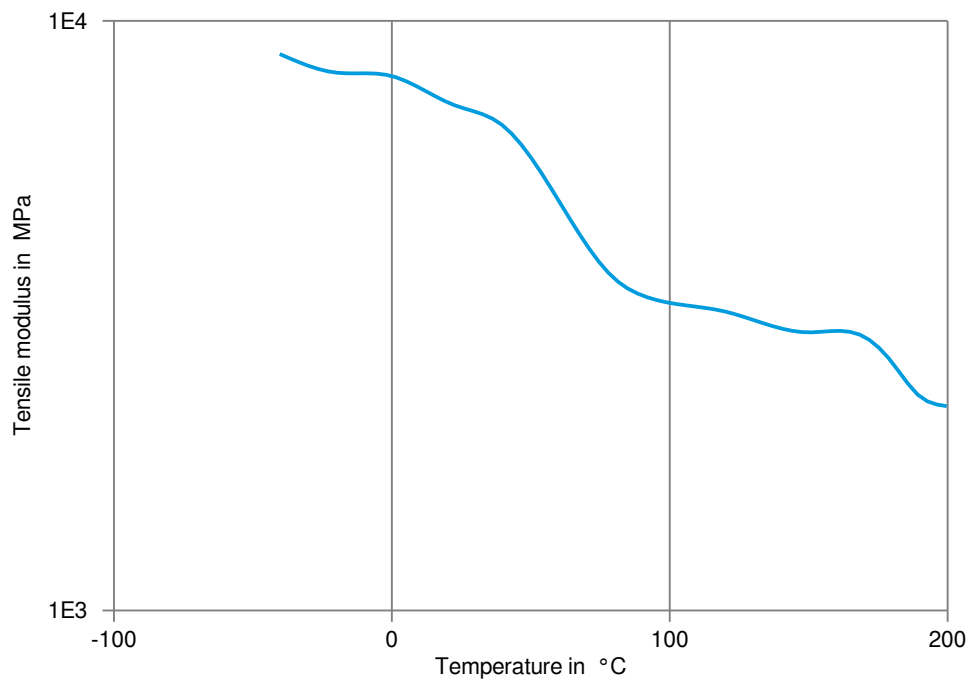
Specific volume-temperature (pvT)



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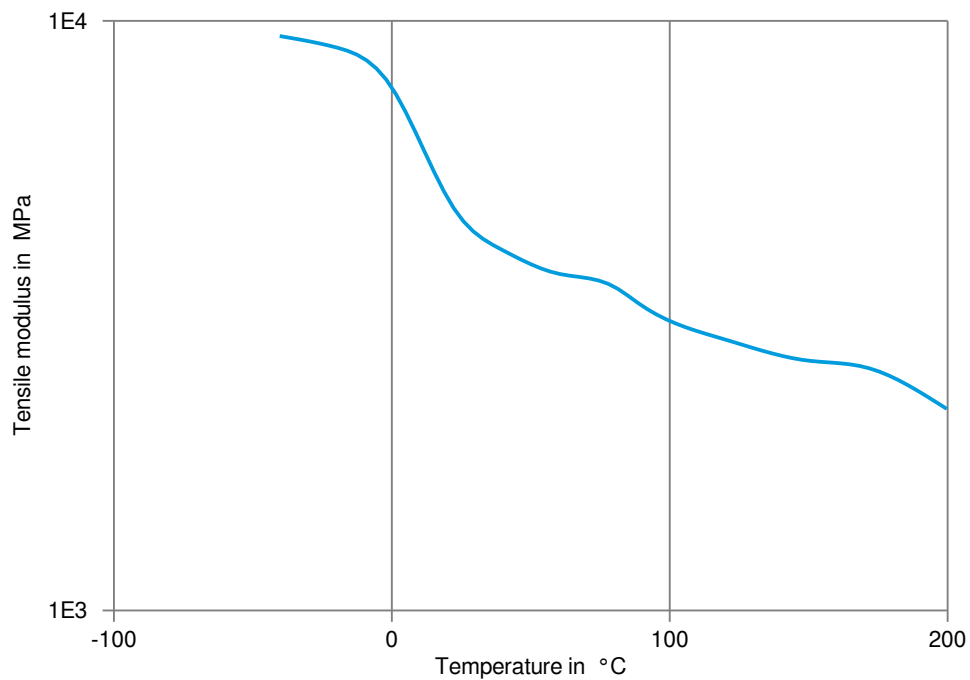
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)



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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
- ✓ Hydraulic oil Pentosin CHF 202, 125°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



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- ✗ Diesel fuel (pref. ISO 1817 Liquid F), >90°C
- ✗ Diesel EN 590, 100°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
- ✓ DOT No. 4 Brake fluid, 120°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).

