Zytel® 79G13L NC010

NYLON RESIN

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon 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 (-31kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

Zytel® 79G13L NC010 is a 13% glass fiber reinforced, toughened polyamide 66 resin for injection molding.

Product information

Resin Identification	PA66-I-GF13	ISO 1043
Part Marking Code	>PA66-I-GF13<	ISO 11469
ISO designation	ISO 16396-PA66-I,GF13,M1GNR,S14-050	
Infrared spectrum	available	

Rheological properties

	dry/cond.		
Viscosity number	4430 / *	in³/lb	ISO 307, 1628
Molding shrinkage, parallel	0.4 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	740000 / 537000	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	17100 / 9720	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	4 / 10	%	ISO 527-1/-2
Flexural modulus	682000 / -	psi	ISO 178
Flexural strength	23200 / -	psi	ISO 178
Tensile creep modulus, 1h	* / 585000	psi	ISO 899-1
Tensile creep modulus, 1000h	* / 461000	psi	ISO 899-1
Charpy impact strength, 23 °C	31.9 / 28.1	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30 °C	28.1 / 25.7	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23 °C	3.81 / 6.66	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30 °C	2.38 / 2.85	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23 °C	3.81 / 4.28	ftlb/in²	ISO 180/1A
Izod notched impact strength, -30 °C	2.85 / 1.9	ftlb/in²	ISO 180/1A
Hardness, Rockwell, M-scale	90 / 74		ISO 2039-2
Hardness, Rockwell, R-scale	120 / 110		ISO 2039-2
Ball indentation hardness, H 961/30	26100 / 14500	psi	ISO 2039-1

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Thermal properties

	dry/cond.		
Melting temperature, 10 °C/min	505 / *	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	468 / *	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	500 / *	°F	ISO 75-1/-2
Vicat softening temperature, 50 °C/h 50N	464 / *	°F	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	0.28 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.722 / *	E-4/°F	ISO 11359-1/-2
Thermal conductivity of melt	0.18	W/(m K)	ISO 22007-2
Effective thermal diffusivity, flow	7E-8	m²/s	ISO 22007-4
Specific heat capacity of melt	2140	J/(kg K)	ISO 22007-4
RTI, electrical, 1.5mm	194	°F	UL 746B
RTI, electrical, 3.0mm	194	°F	UL 746B
RTI, impact, 1.5mm	149	°F	UL 746B
RTI, impact, 3.0mm	149	°F	UL 746B
RTI, strength, 1.5mm	194 / *	°F	UL 746B
RTI, strength, 3.0mm	194	°F	UL 746B

Flammability

	dry/cond.		
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
Glow Wire Flammability Index, 1.0mm	1200 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 2.0mm	1200 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	1200 / -	°F	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.0mm	1200 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 2.0mm	1200 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	1200 / -	°F	IEC 60695-2-13
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	0.748	in/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	3.9 / 9.8		IEC 62631-2-1
Relative permittivity, 1MHz	3.7 / 4.5		IEC 62631-2-1
Dissipation factor, 100Hz	65 / 2500	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	130 / 660	E-4	IEC 62631-2-1
Volume resistivity	- / 1E12	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 1E14	Ohm	IEC 62631-3-2
Electric strength	940 / 889	kV/in	IEC 60243-1
Comparative tracking index	475 / -		IEC 60112

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Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	2.2 / *	%	Sim. to ISO 62
Water absorption, 2mm	6.5 / *	%	Sim. to ISO 62
Density	0.0437 / -	lb/in³	ISO 1183
Density of melt	64.3	lb/ft³	

Emissions

	dry/cond.		
Emission of organic compounds	13	µgC/g	VDA 277
Odor test	4	class	VDA 270
Fogging, G-value (condensate)	0.3 / *	mg	ISO 6452

Injection

Drying Recommended	yes	
Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	563	°F
Min. melt temperature	545	°F
Max. melt temperature	581	°F
Max. screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	176	°F
Min. mold temperature	122	°F
Max. mold temperature	212	°F
Hold pressure range	7250 - 14500	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
Ejection temperature	410	°F

Automotive

OEM	STANDARD
BMW	GS93016-PA66-GF15
Mercedes-Benz	DBL5410.00 PA66 GF15
VW Group	VW 50127 PA66-4

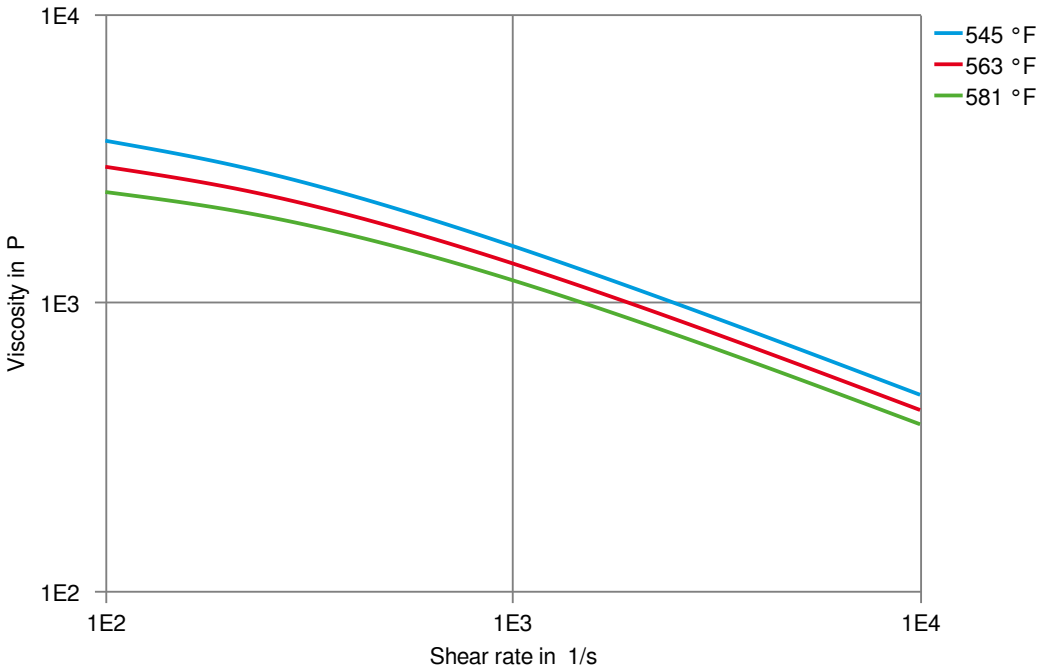
Characteristics

Processing	Injection Molding
Additives	Release agent
Special characteristics	High impact or impact modified

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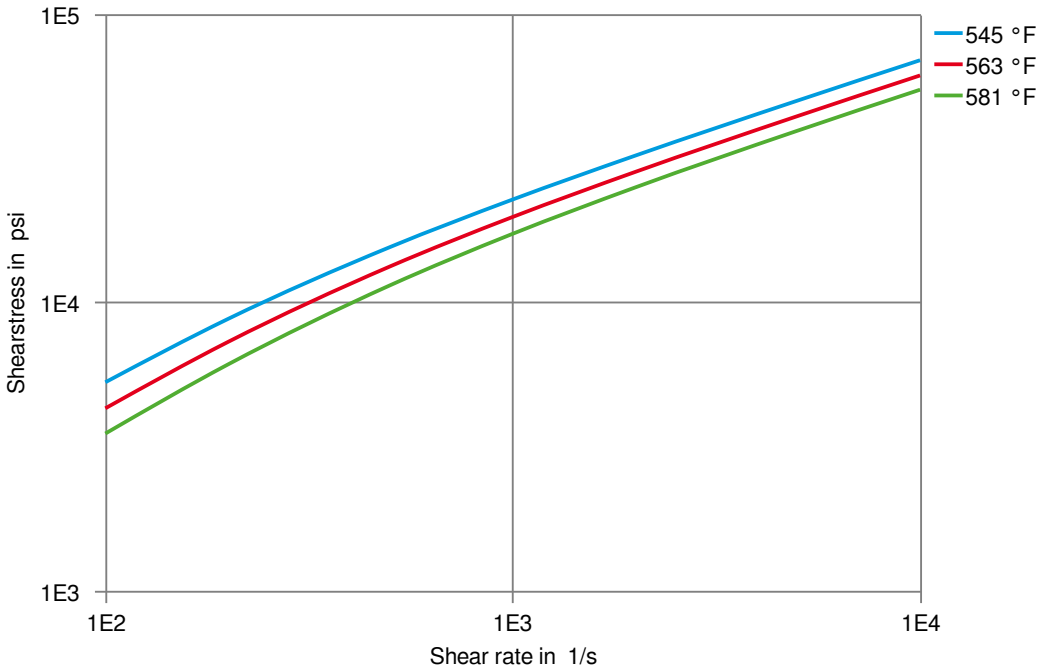
Viscosity-shear rate



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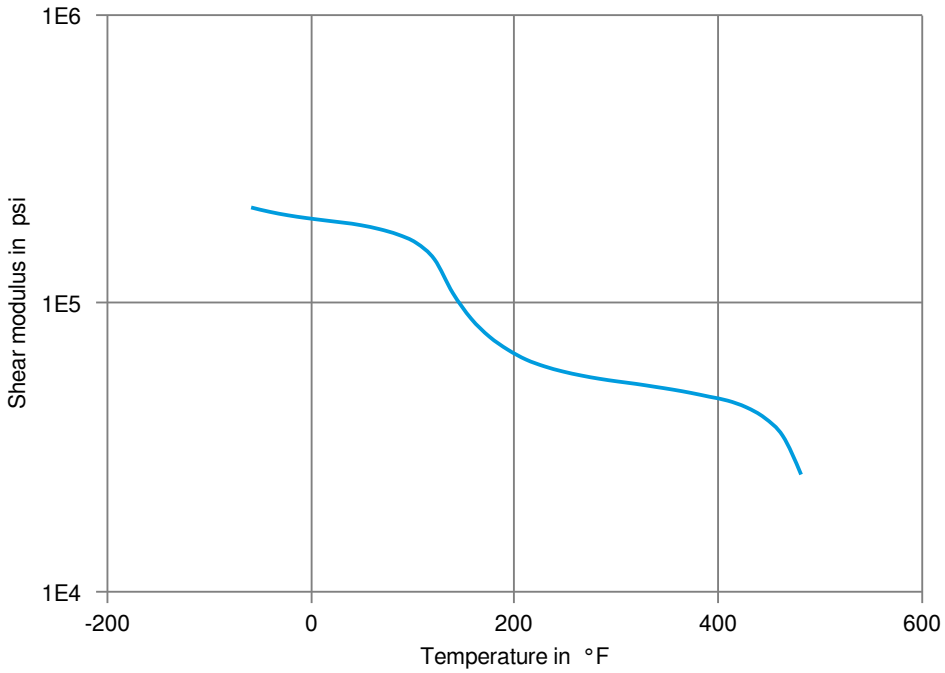
Shearstress-shear rate



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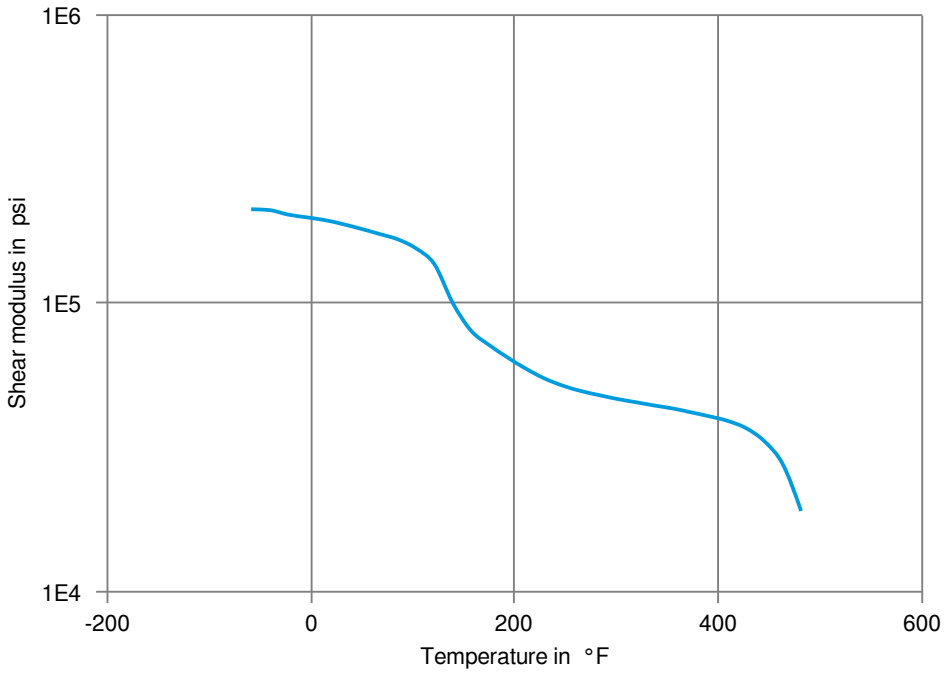
Dynamic Shear modulus-temperature (dry)



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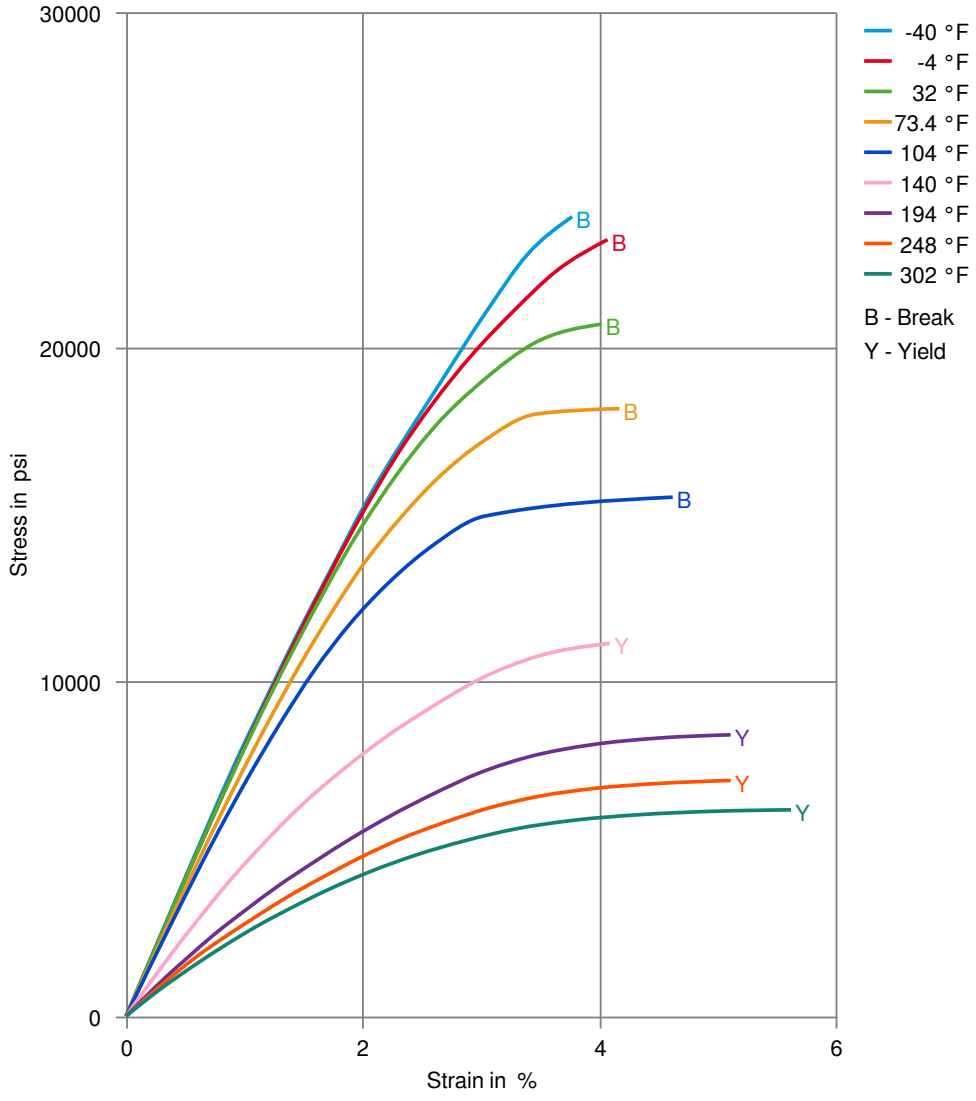
Dynamic Shear modulus-temperature (cond.)



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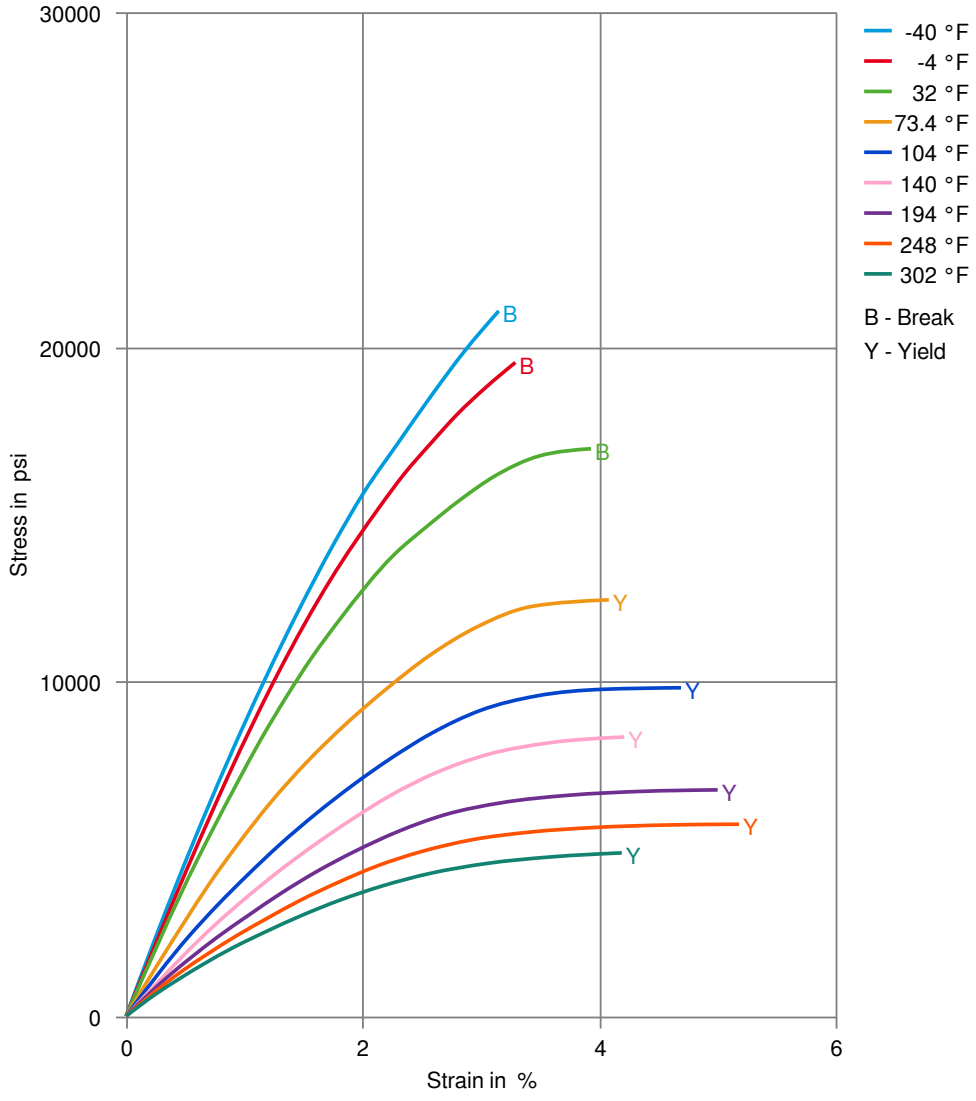
Stress-strain (dry)



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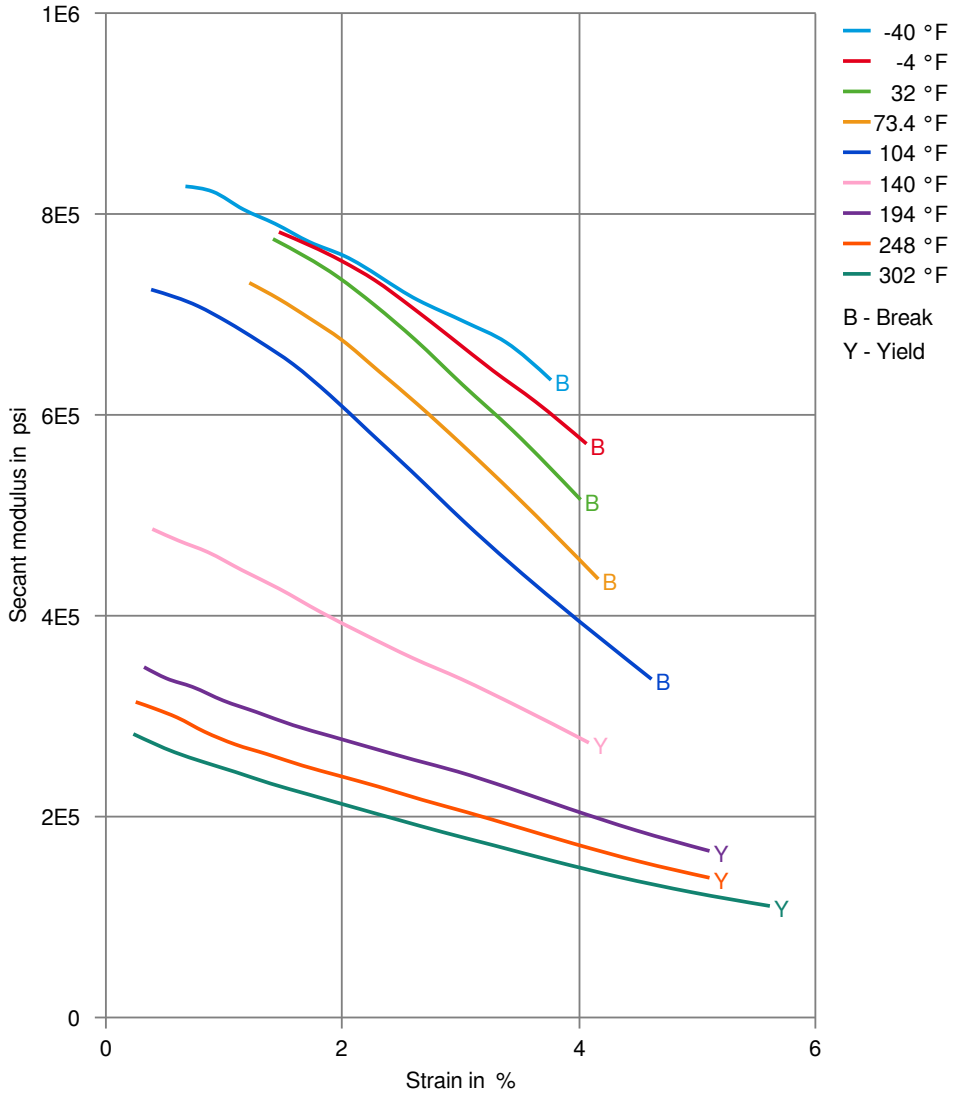
Stress-strain (cond.)



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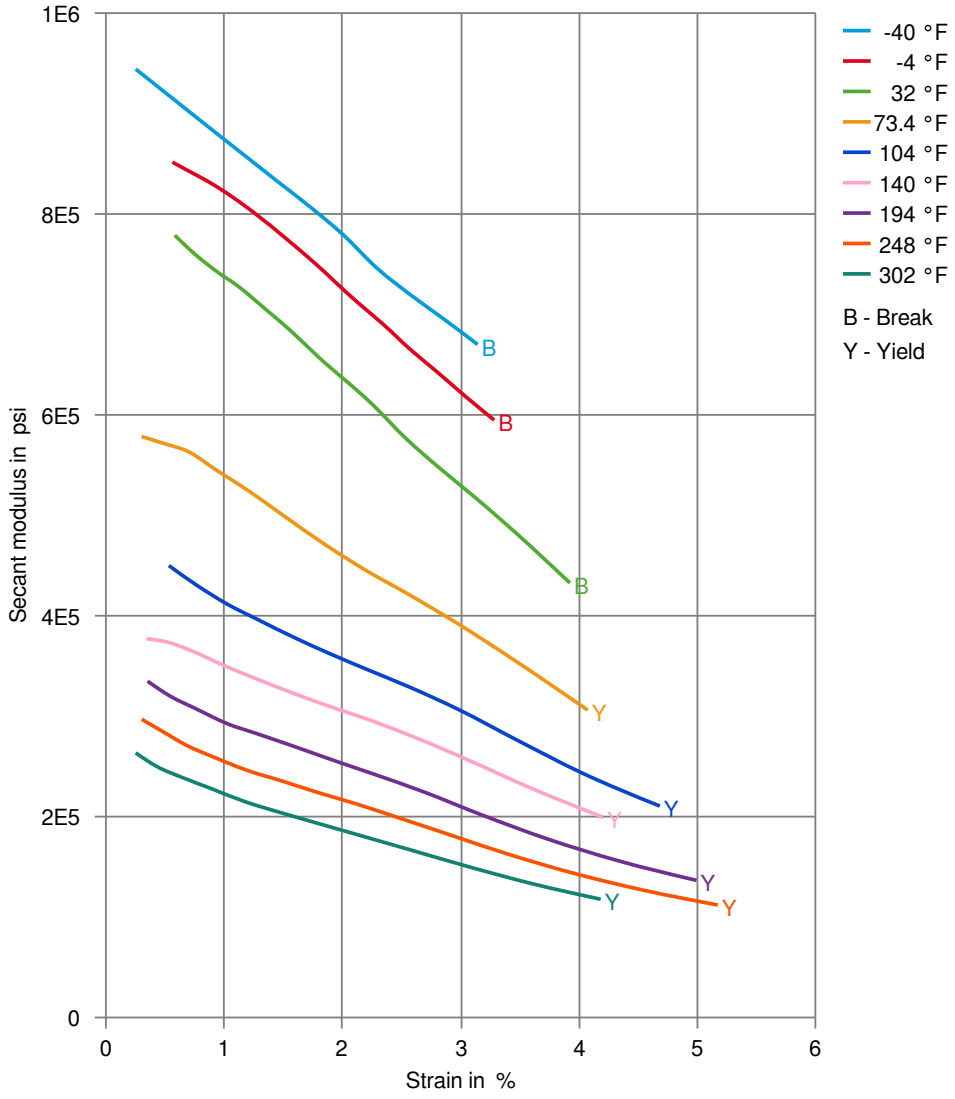
Secant modulus-strain (dry)



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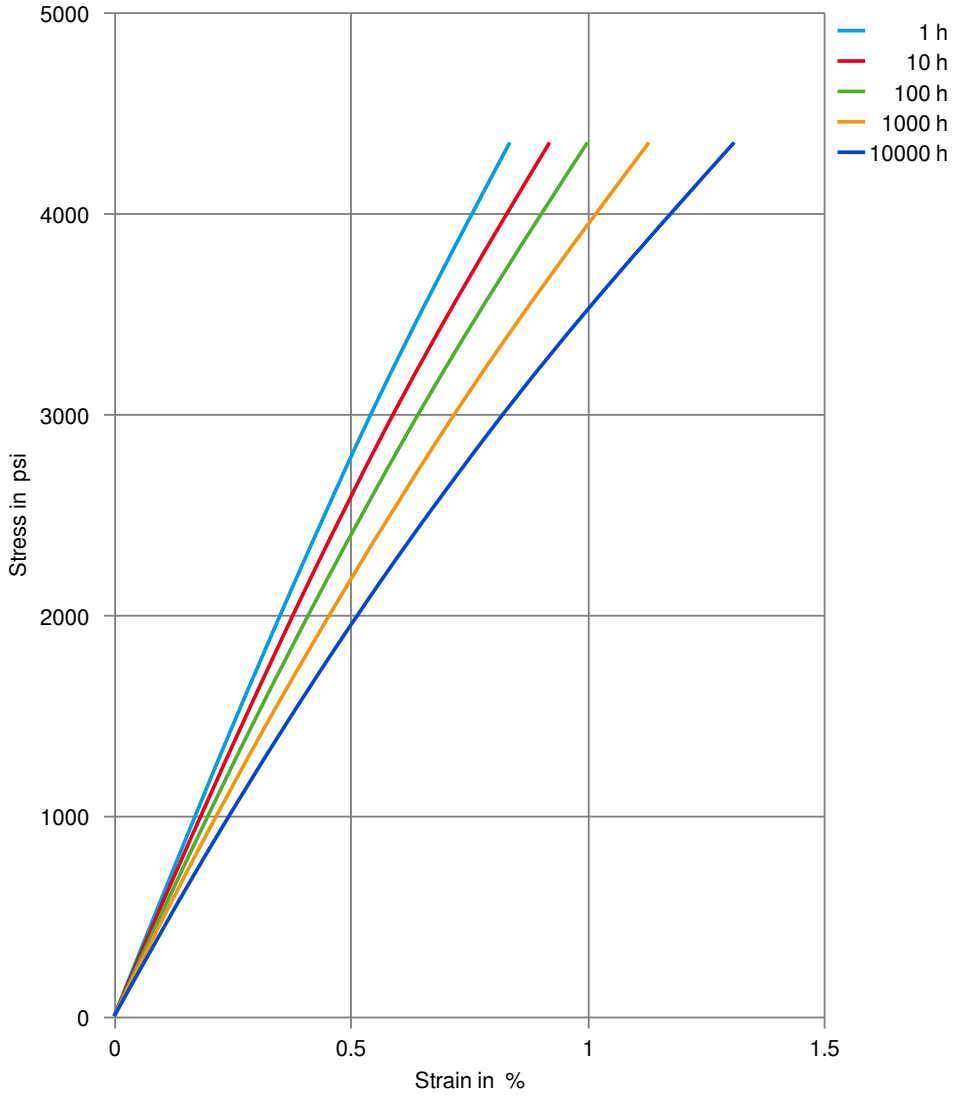
Secant modulus-strain (cond.)



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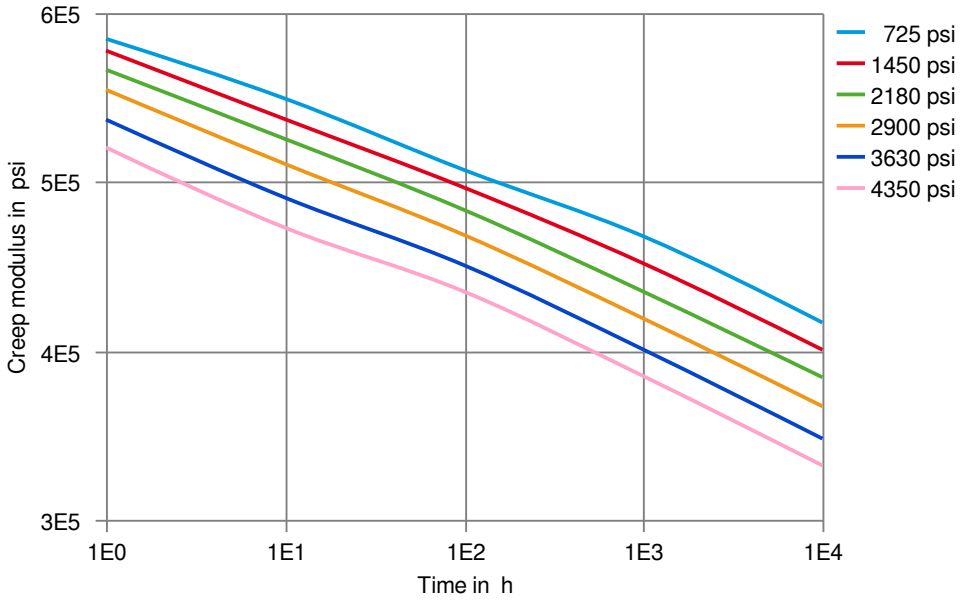
Stress-strain (isochronous) 73.4 °F (cond.)



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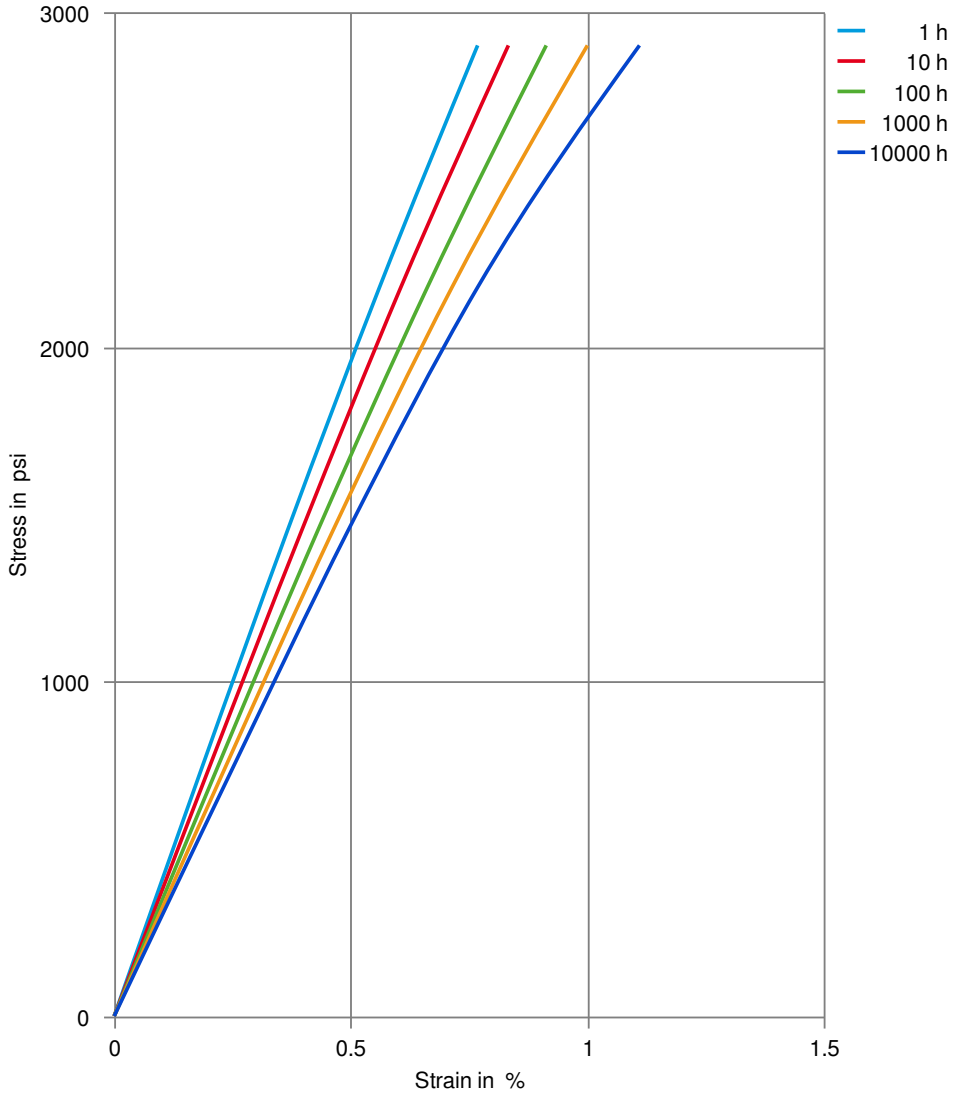
Creep modulus-time 73.4 °F (cond.)



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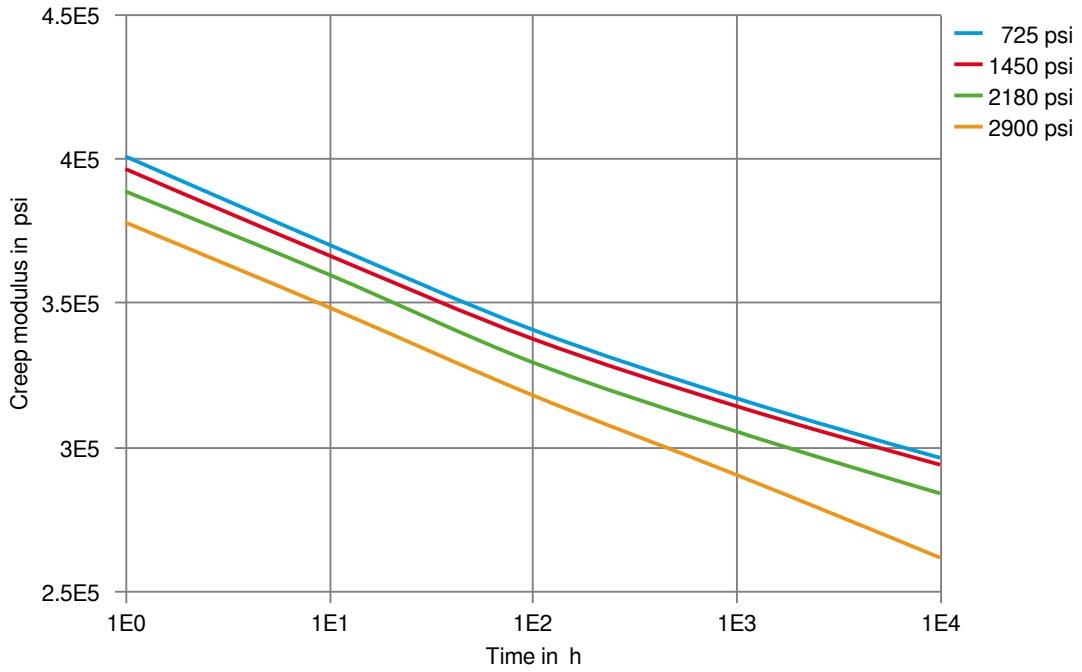
Stress-strain (isochronous) 176 °F (cond.)



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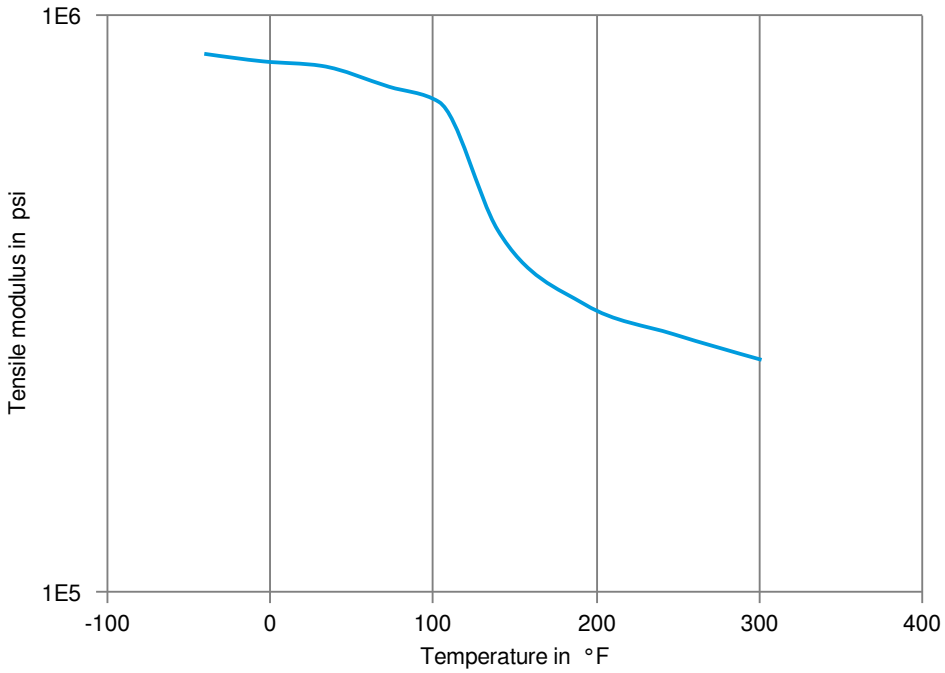
Creep modulus-time 176 °F (cond.)



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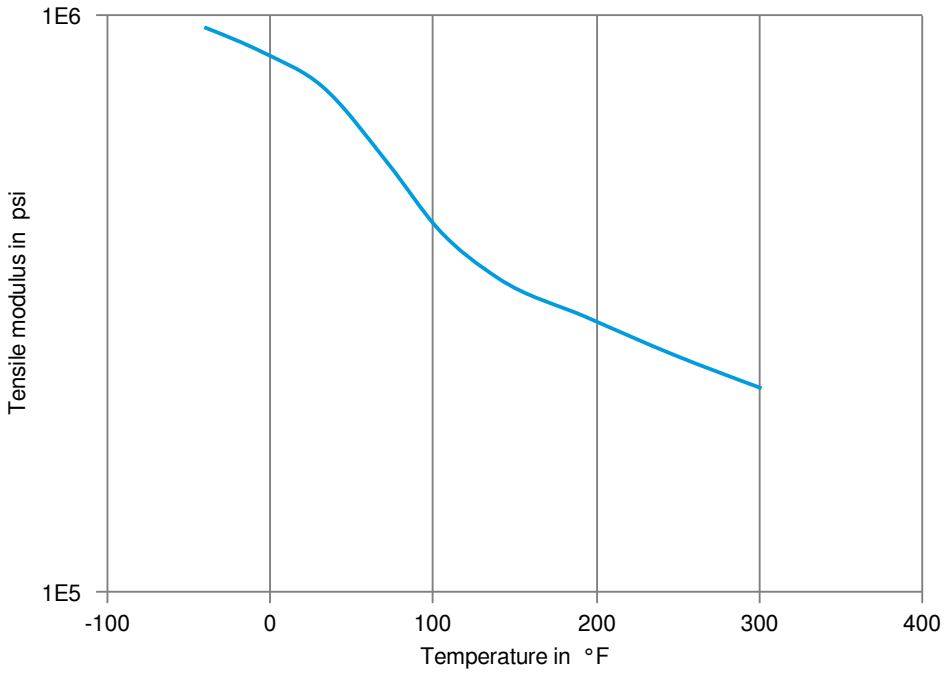
Tensile modulus-temperature (dry)



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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

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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