Zytel® 70G43L 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® 70G43L NC010 is a 43% glass fiber reinforced polyamide 66 resin for injection molding.

Product information

Resin Identification	PA66-GF43	ISO 1043
Part Marking Code	>PA66-GF43<	ISO 11469
ISO designation	ISO 16396-PA66,GF43,M1GNR,S14-140	
Infrared spectrum	available	

Rheological properties

	dry/cond.		
Molding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	2.03E6 / 1.6E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	32600 / 23200	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	3 / 4	%	ISO 527-1/-2
Flexural modulus	1.74E6 / 1.31E6	psi	ISO 178
Flexural strength	49300 / 37700	psi	ISO 178
Tensile creep modulus, 1h	* / 1.57E6	psi	ISO 899-1
Tensile creep modulus, 1000h	* / 1.15E6	psi	ISO 899-1
Charpy impact strength, 23°C	47.6 / 49.9	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	40.4 / 35.7	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	7.61 / 9.04	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30°C	5.71 / 5.71	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -40°C	5.23 / 5.23	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23°C	6.66 / 7.61	ftlb/in²	ISO 180/1A
Izod notched impact strength, -30°C	5.71 / 5.23	ftlb/in²	ISO 180/1A
Izod notched impact strength, -40°C	5.23 / 5.23	ftlb/in²	ISO 180/1A
Izod impact strength, 23°C	49.9 / 42.8	ftlb/in²	ISO 180/1U
Izod impact strength, -30°C	49.9 / 30.9	ftlb/in²	ISO 180/1U
Hardness, Rockwell, M-scale	105 / 90		ISO 2039-2
Hardness, Rockwell, R-scale	125 / 118		ISO 2039-2
Ball indentation hardness, H 961/30	42100 / -	psi	ISO 2039-1
Multiaxial Impact, Total Energy, 4.5m/s, 2mm	4.4 / -	Btu	ISO 6603-2

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Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	504 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	176 / 68	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	491 / *	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	504 / *	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	491 / *	°F	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	0.08 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, -40-23°C	0.111 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, 55-160°C	0.05 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.439 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, -40-23°C	0.339 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, 55-160°C	0.722 / *	E-4/°F	ISO 11359-1/-2
Thermal conductivity of melt	0.25	W/(m K)	ISO 22007-2
Effective thermal diffusivity, flow	9.5E-8	m^2/s	ISO 22007-4
Specific heat capacity of melt	2050	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, impact, 0.75mm	248	°F	UL 746B
RTI, impact, 1.5mm	248	°F	UL 746B
RTI, impact, 3.0mm	248	°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

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	0.0280 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Oxygen index	23 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index, 0.75mm	1200 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	1200 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	1520 / -	°F	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	1250 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	1250 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	1290 / -	°F	IEC 60695-2-13
FMVSS Class	SE / B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	1.06	in/min	ISO 3795 (FMVSS 302)

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Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	4.5 / -		IEC 62631-2-1
Relative permittivity, 1MHz	4.1 / 4.9		IEC 62631-2-1
Dissipation factor, 100Hz	100 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	145 / 600	E-4	IEC 62631-2-1
Volume resistivity	>1E13 / 1E10	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 1E12	Ohm	IEC 62631-3-2
Electric strength	686 / -	kV/in	IEC 60243-1
Electric Strength, Short Time, 2mm	686 / -	V/mil	IEC 60243-1

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.5 / *	%	Sim. to ISO 62
Water absorption, 2mm	4.7 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.9[1] / *	%	Sim. to ISO 62
Density	0.0538 / -	lb/in³	ISO 1183
Density of melt	80.5	lb/ft³	

[1]: 2mm wall thickness

Injection

Drying Recommended	yes	
Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	572	°F
Min. melt temperature	554	°F
Max. melt temperature	581	°F
Max. screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	203	°F
Min. mold temperature	149	°F
Max. mold temperature	248	°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)	h²+2	s
Ejection temperature	437	°F

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Hyundai	MS211-47 Type A-3	
Stellantis - Chrysler	MS.50017 / CPN-2183	Natural

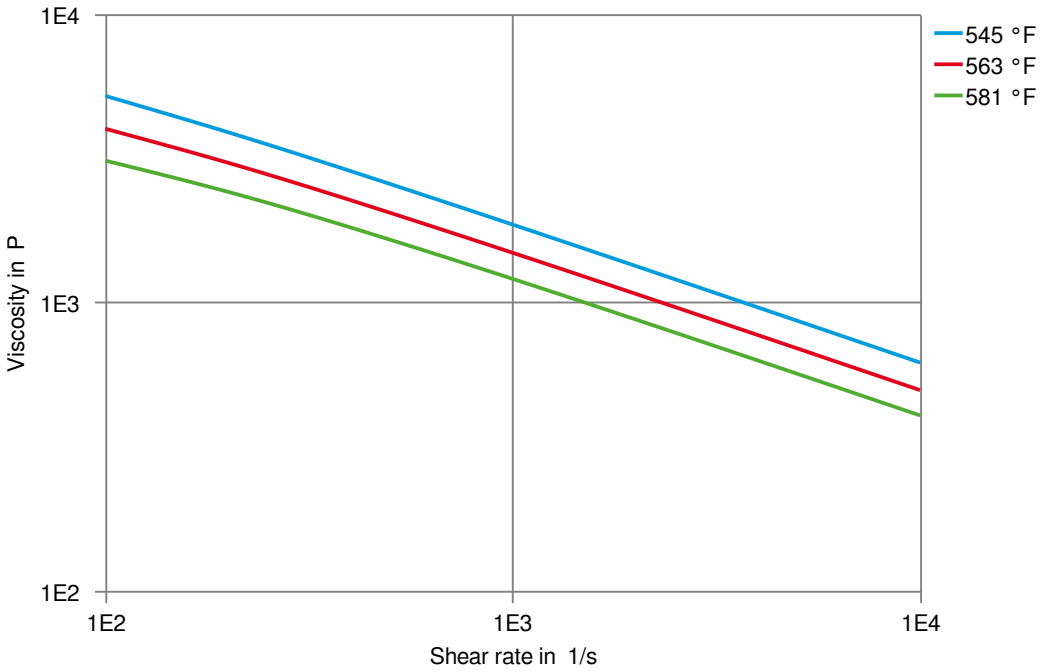
Characteristics

Processing	Injection Molding
Additives	Release agent

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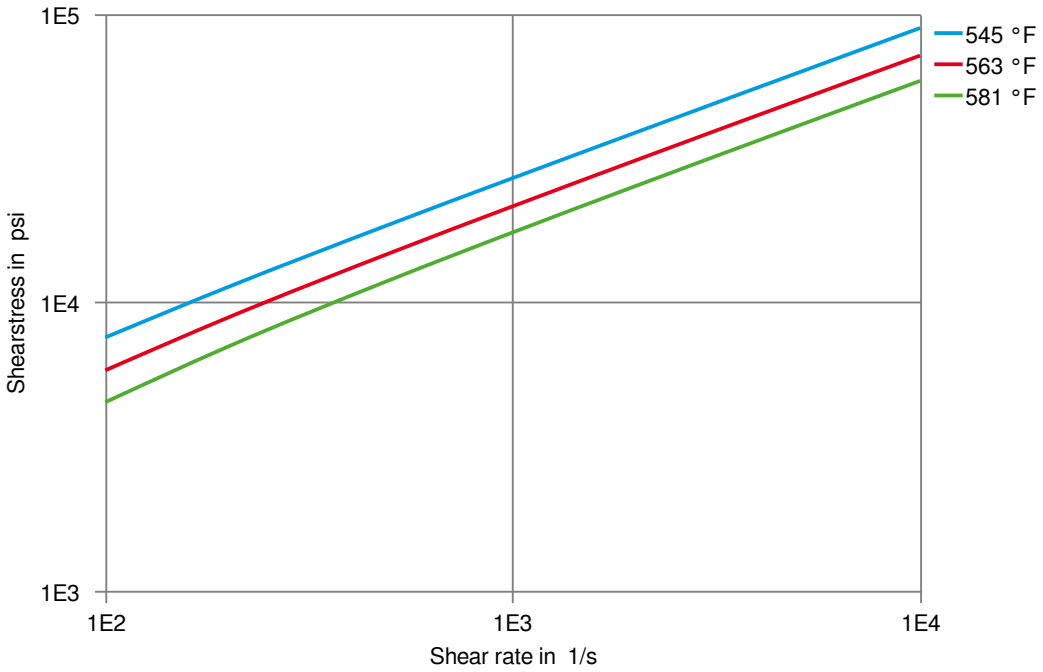
Viscosity-shear rate



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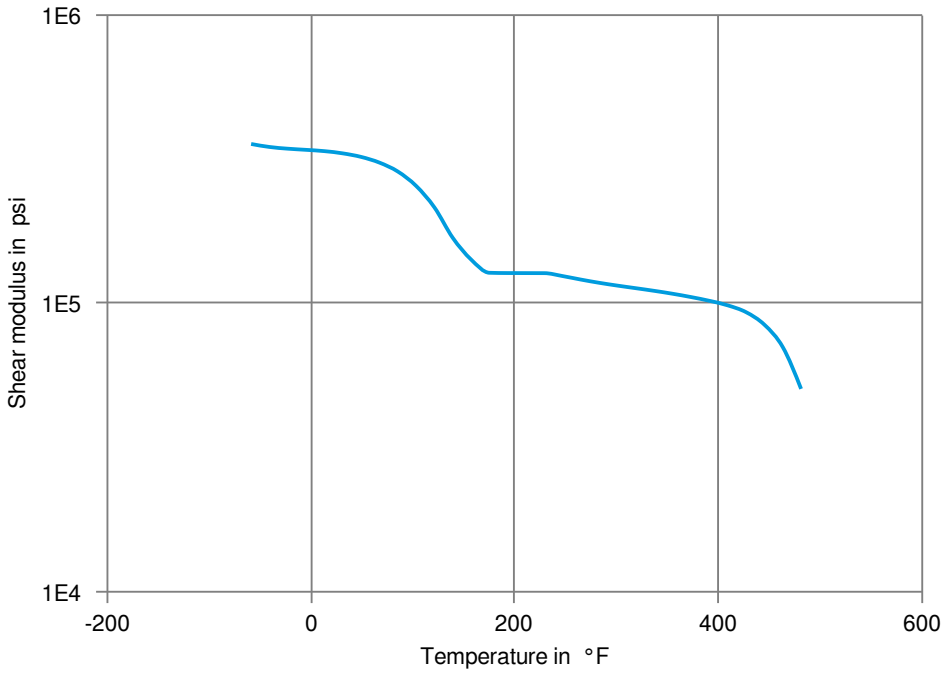
Shearstress-shear rate



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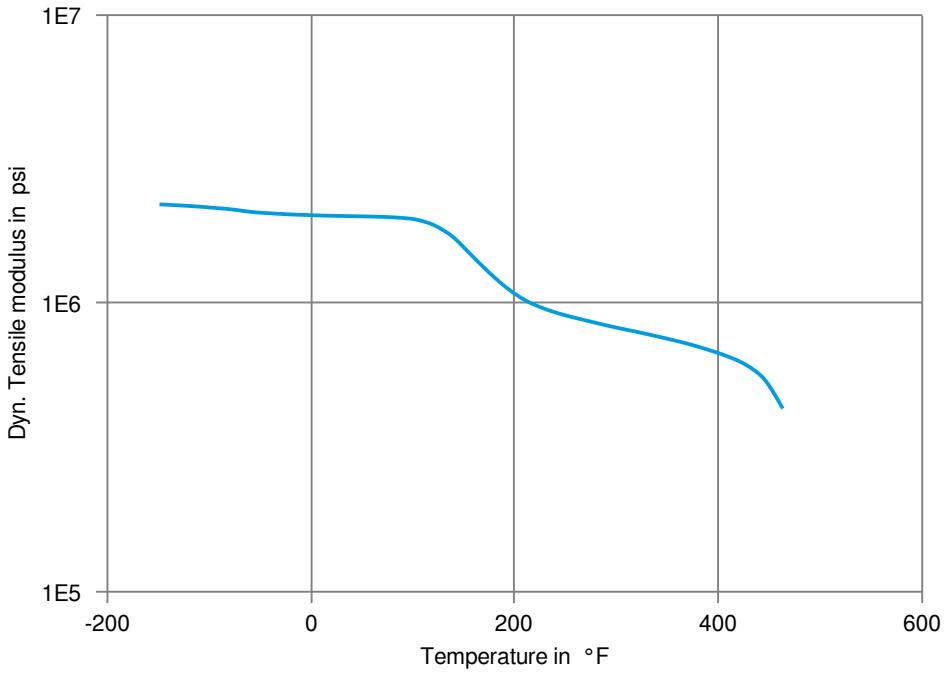
Dynamic Shear modulus-temperature (dry)



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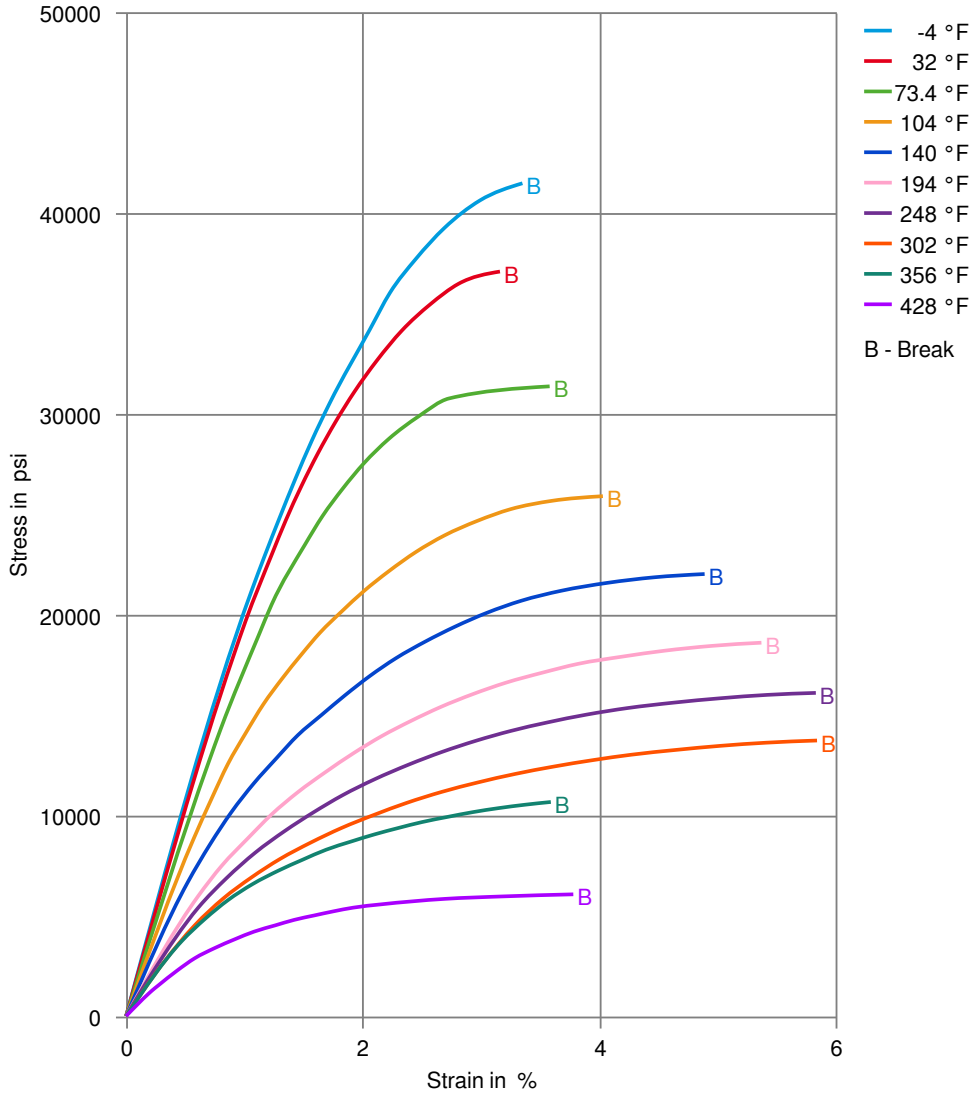
Dynamic Tensile modulus-temperature (dry)



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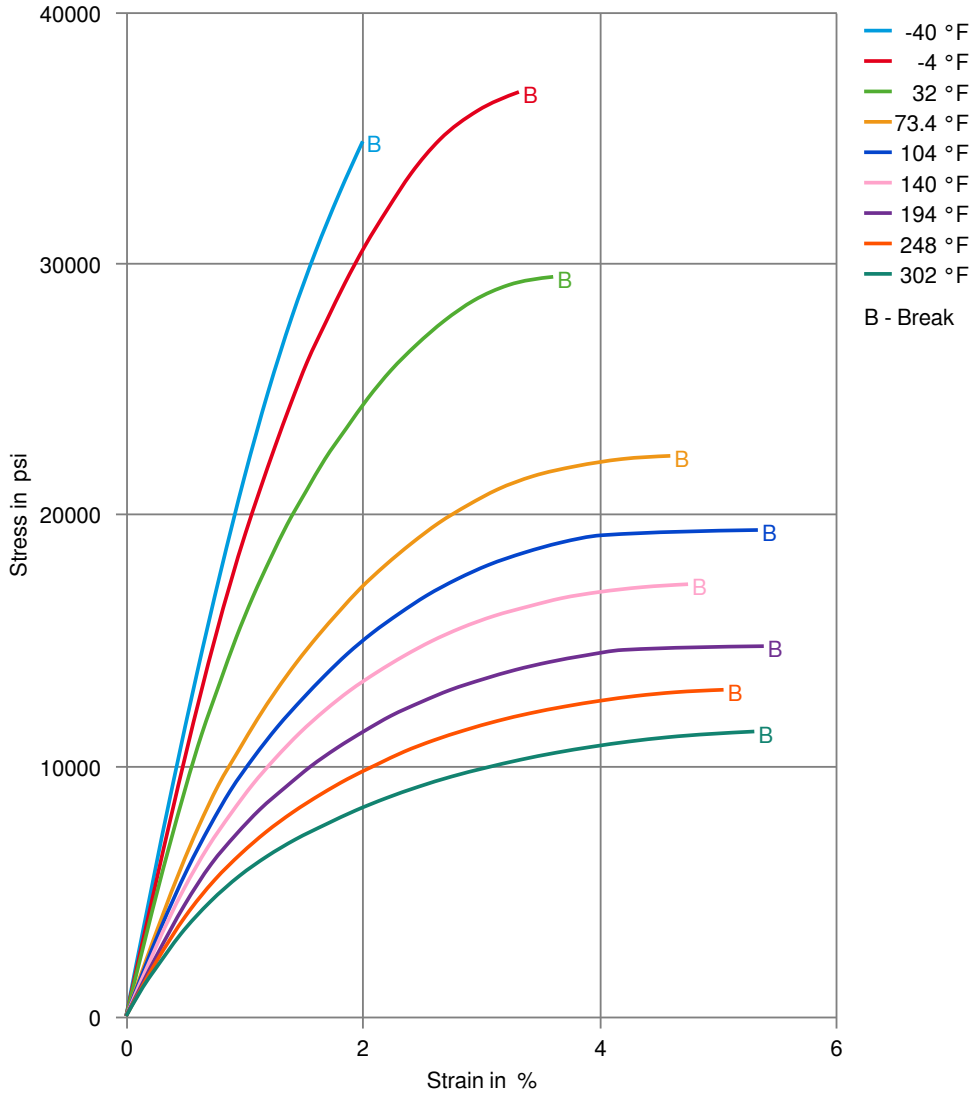
Stress-strain (dry)



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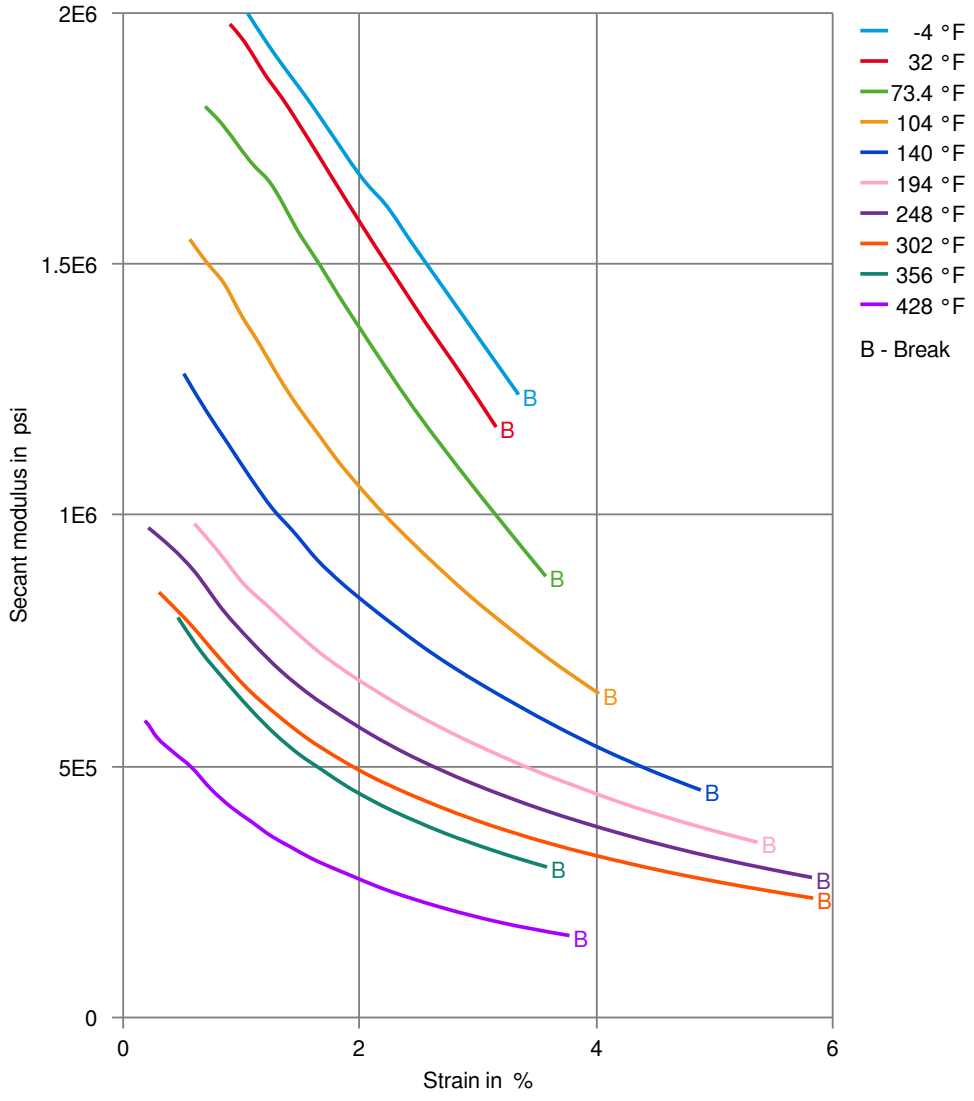
Stress-strain (cond.)



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Secant modulus-strain (dry)

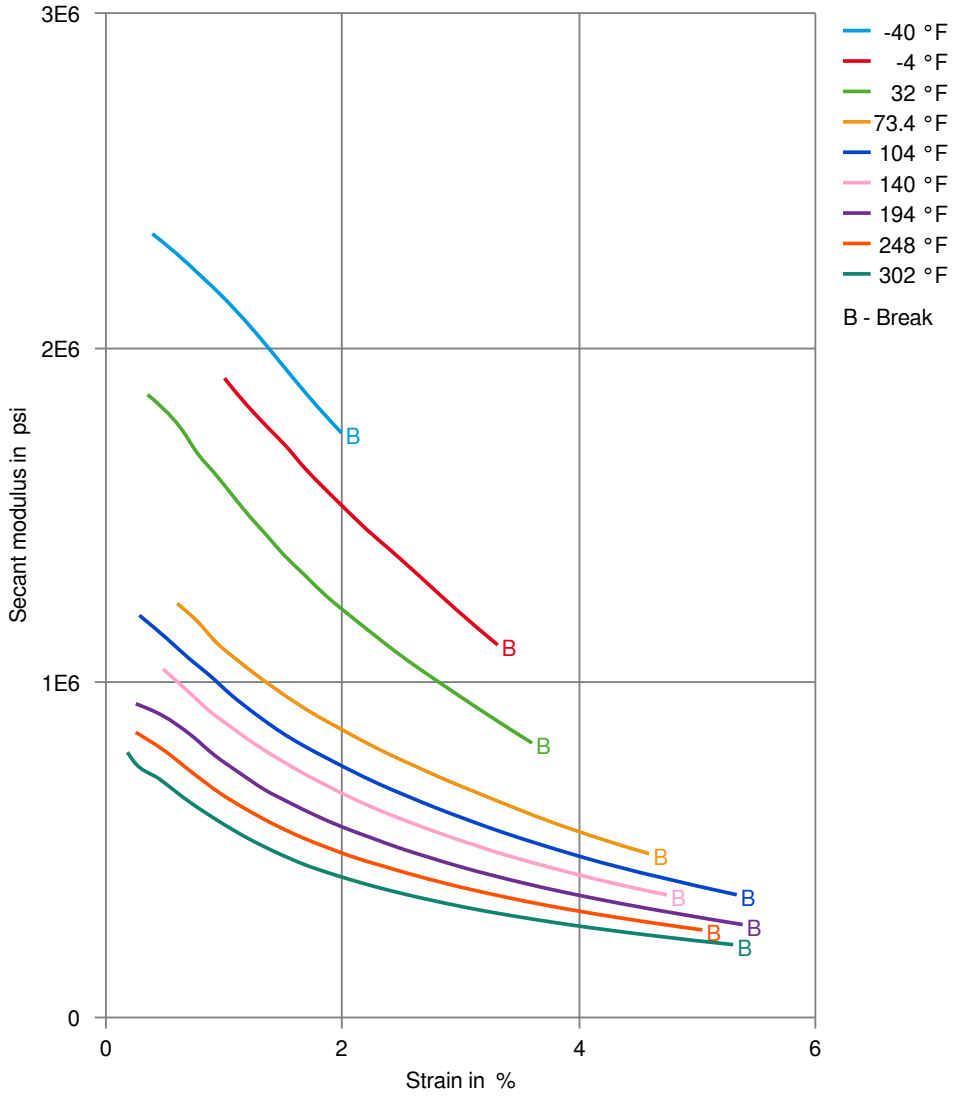


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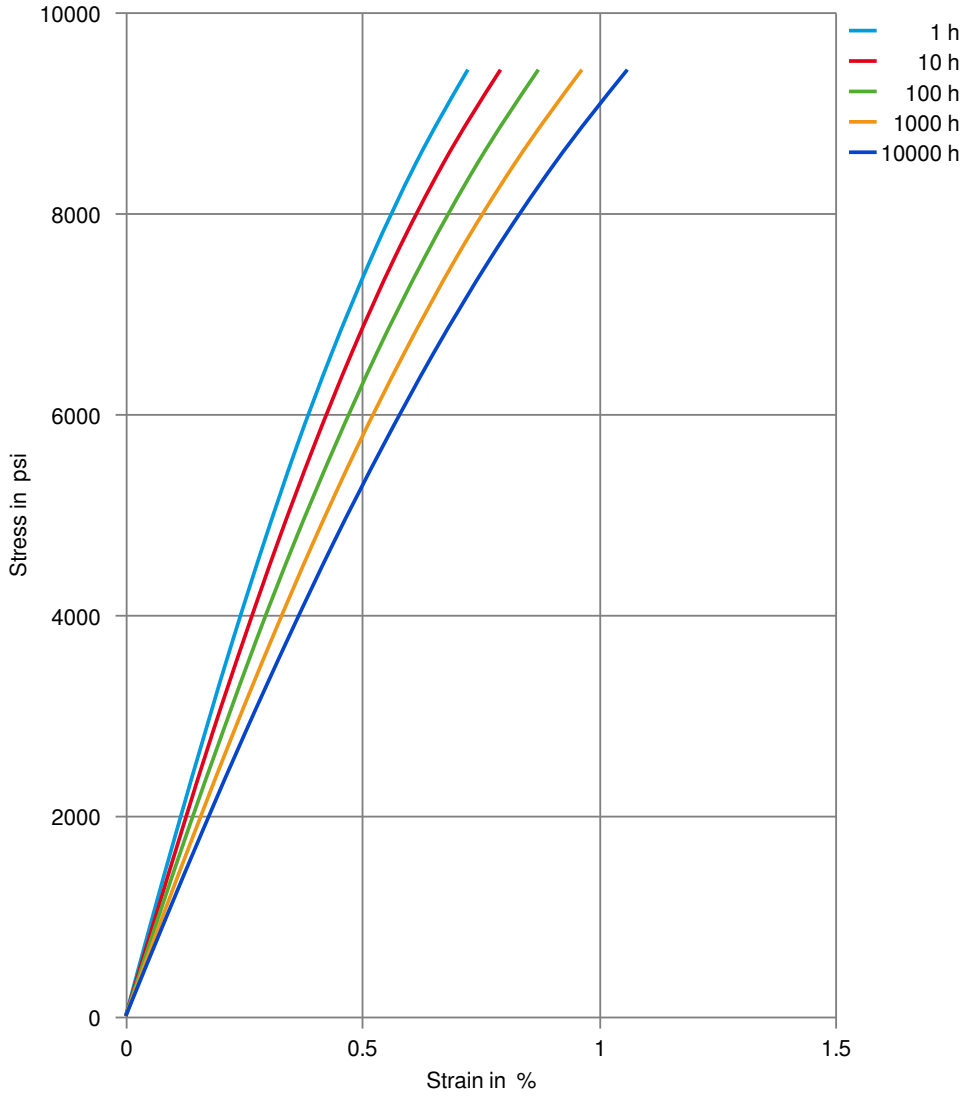
Secant modulus-strain (cond.)



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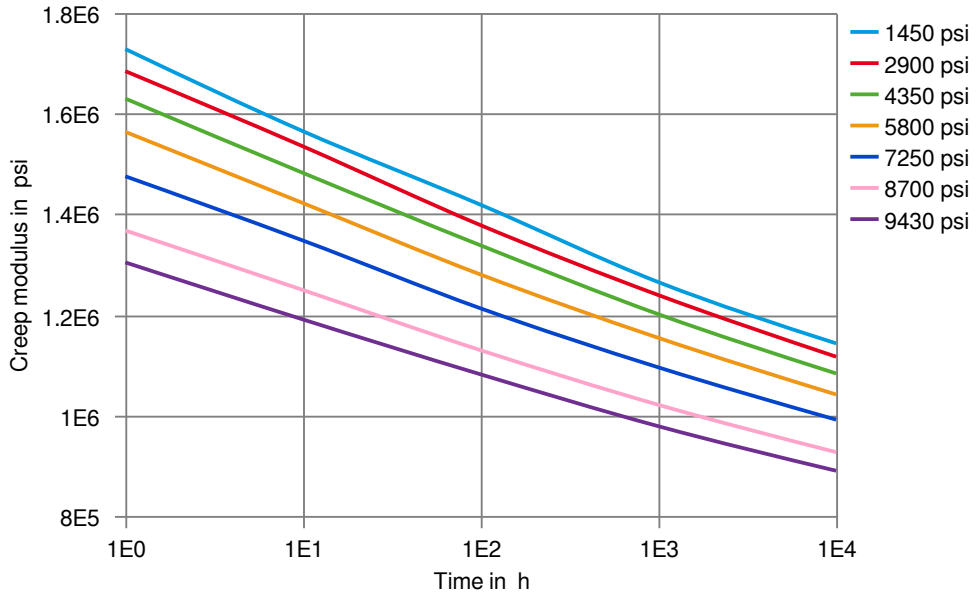
Stress-strain (isochronous) 73.4 °F (cond.)



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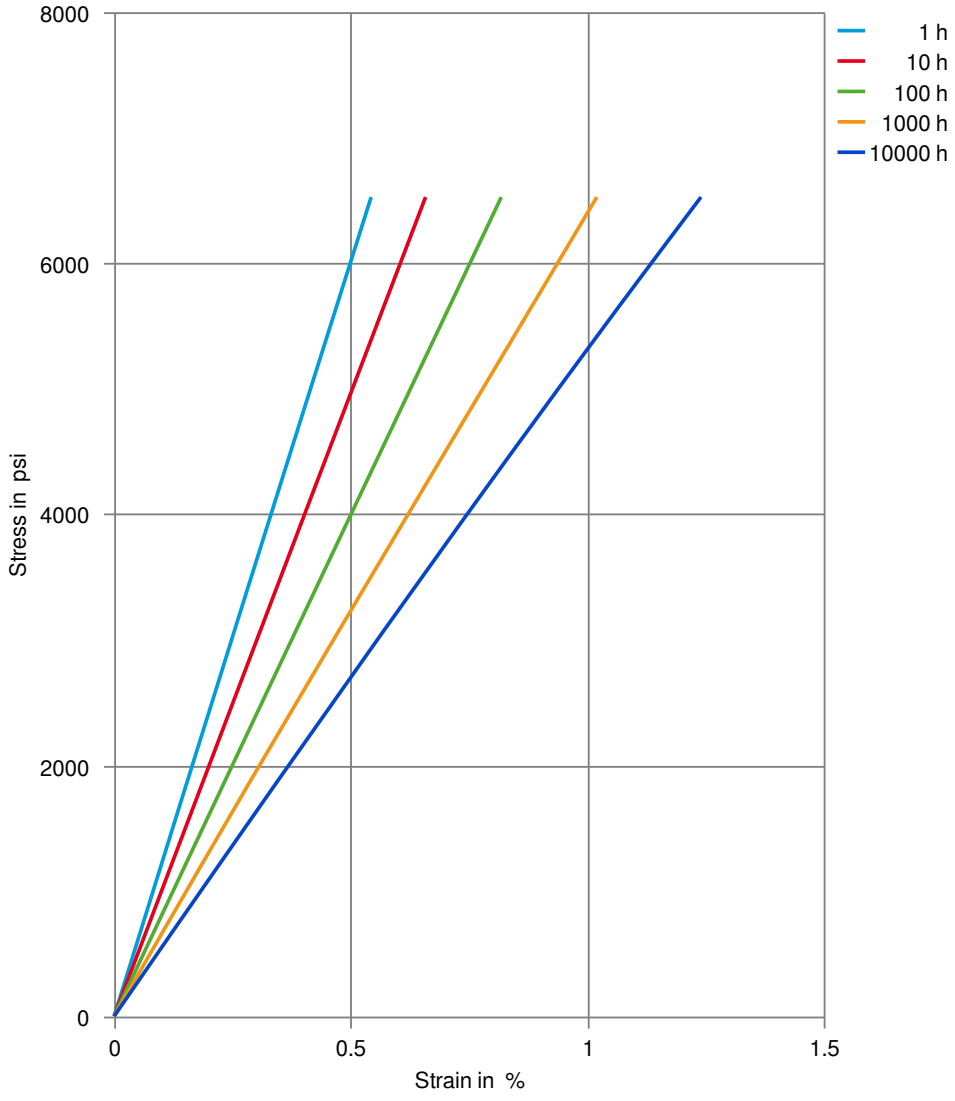
Creep modulus-time 73.4 °F (cond.)



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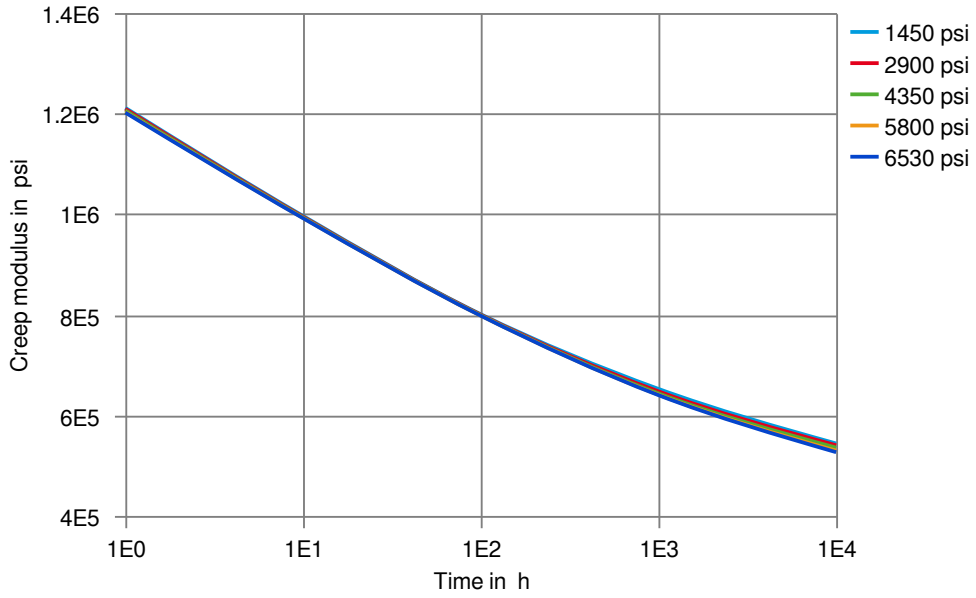
Stress-strain (isochronous) 140 °F (cond.)



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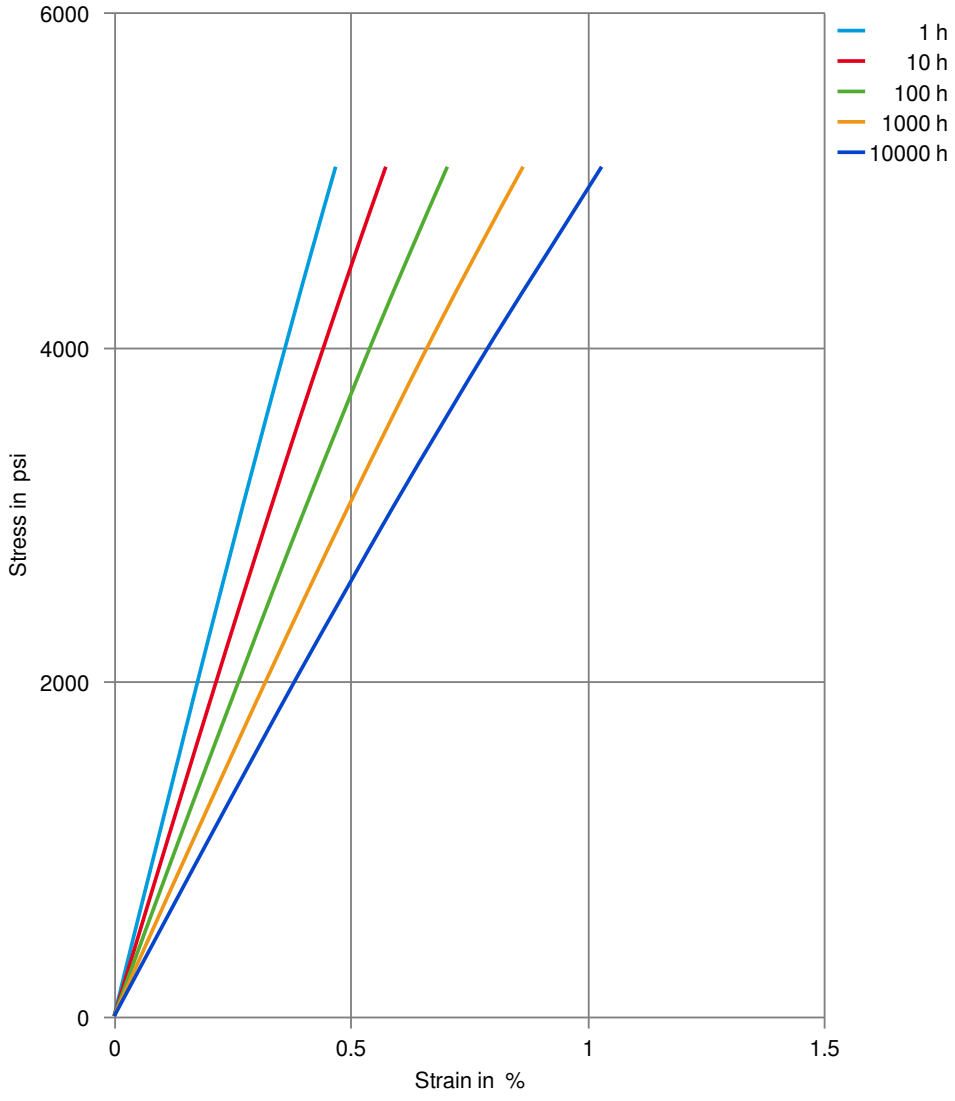
Creep modulus-time 140 °F (cond.)



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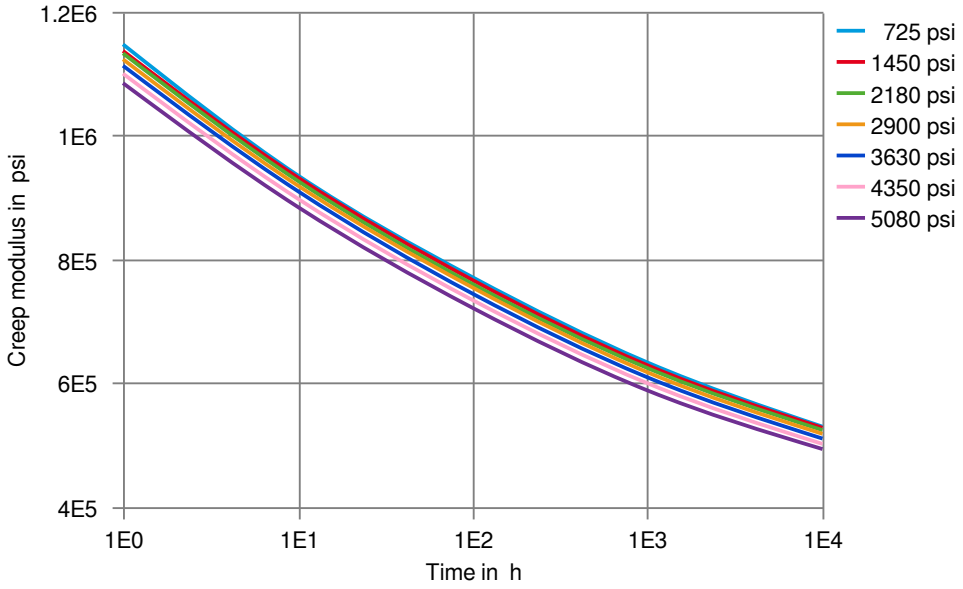
Stress-strain (isochronous) 194 °F (cond.)



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NYLON RESIN

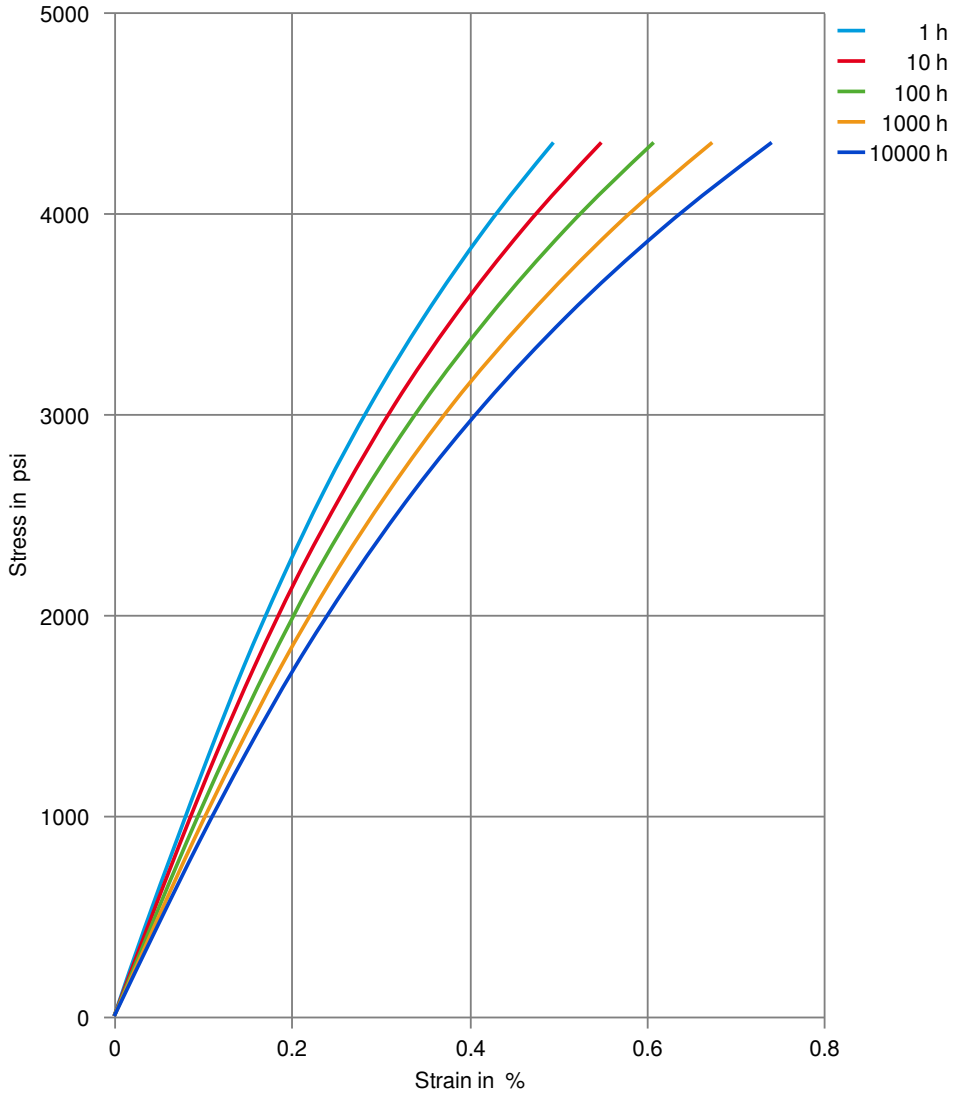
Creep modulus-time 194 °F (cond.)



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NYLON RESIN

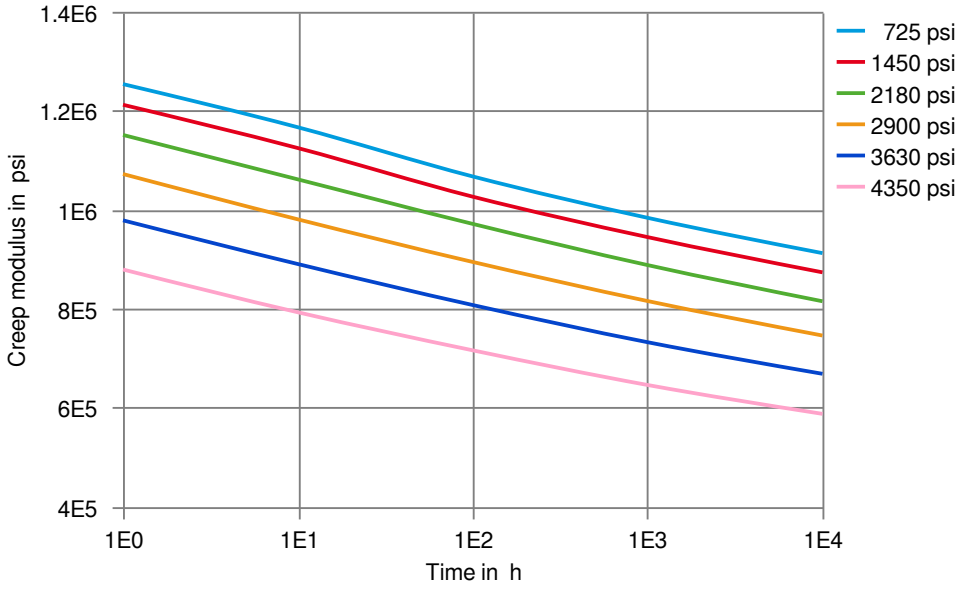
Stress-strain (isochronous) 212°F (cond.)



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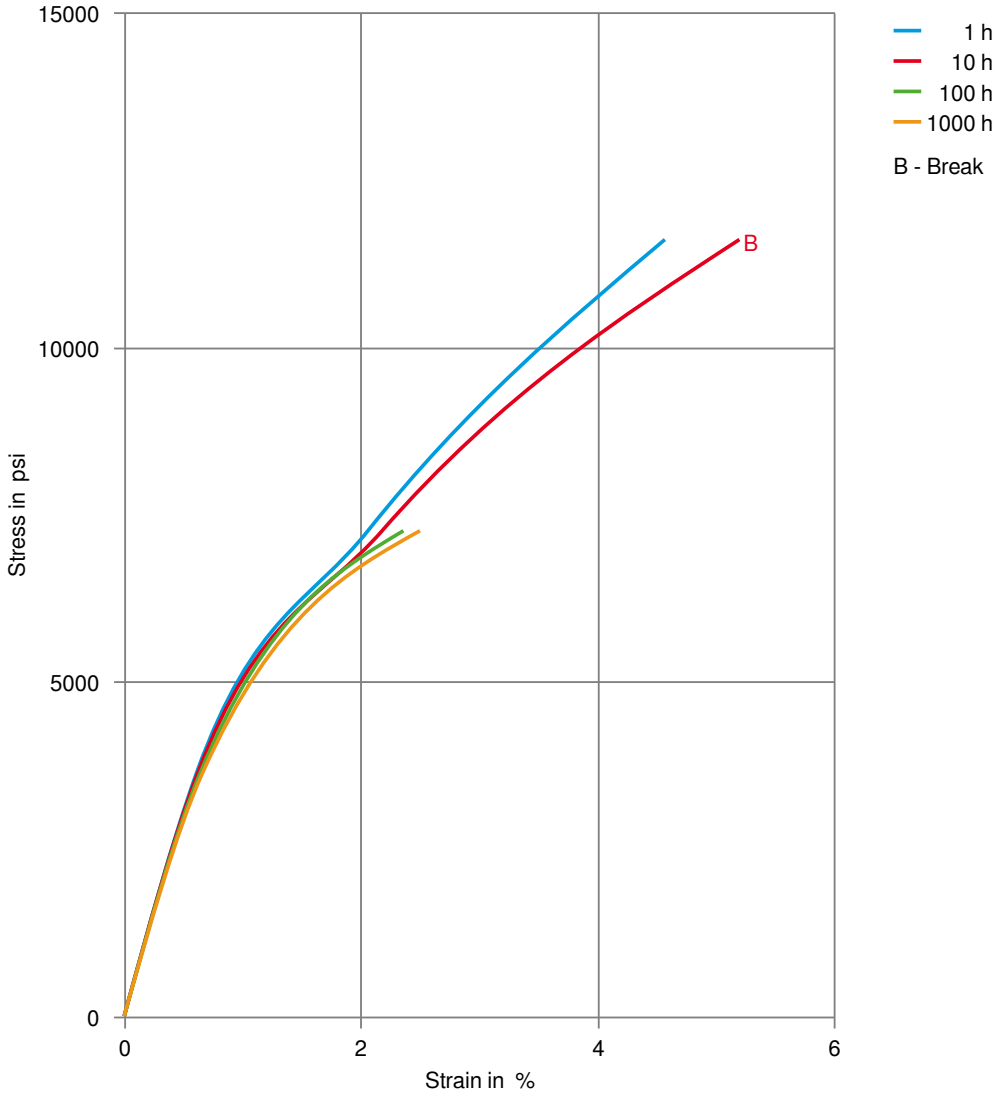
Creep modulus-time 212°F (cond.)



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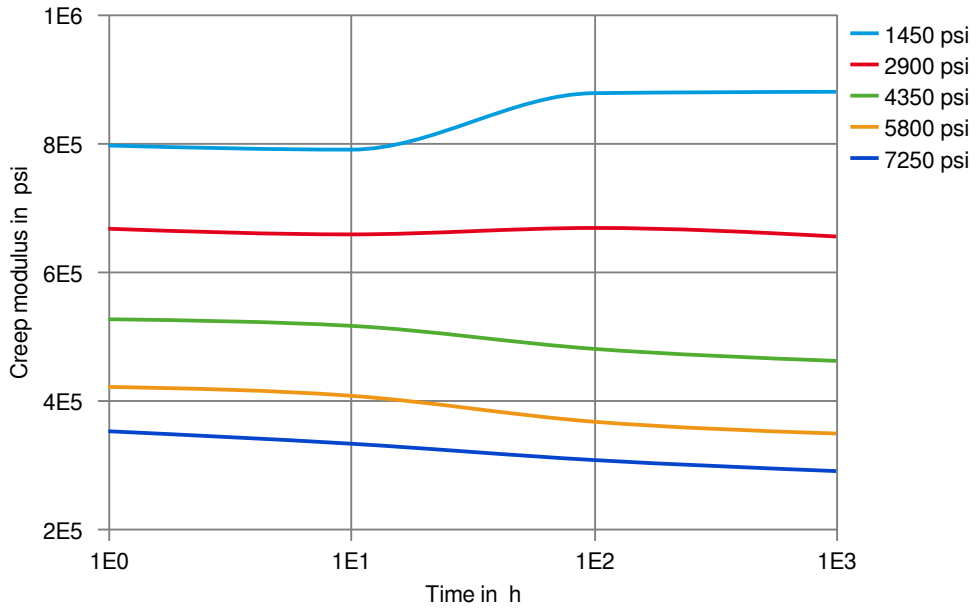
Stress-strain (isochronous) 302°F (cond.)



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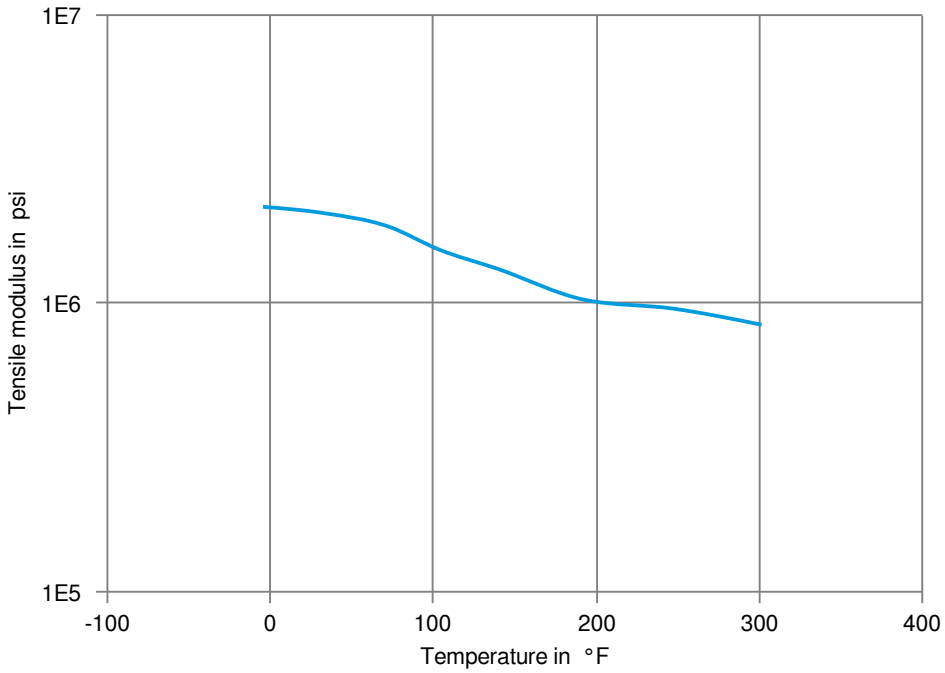
Creep modulus-time 302°F (cond.)



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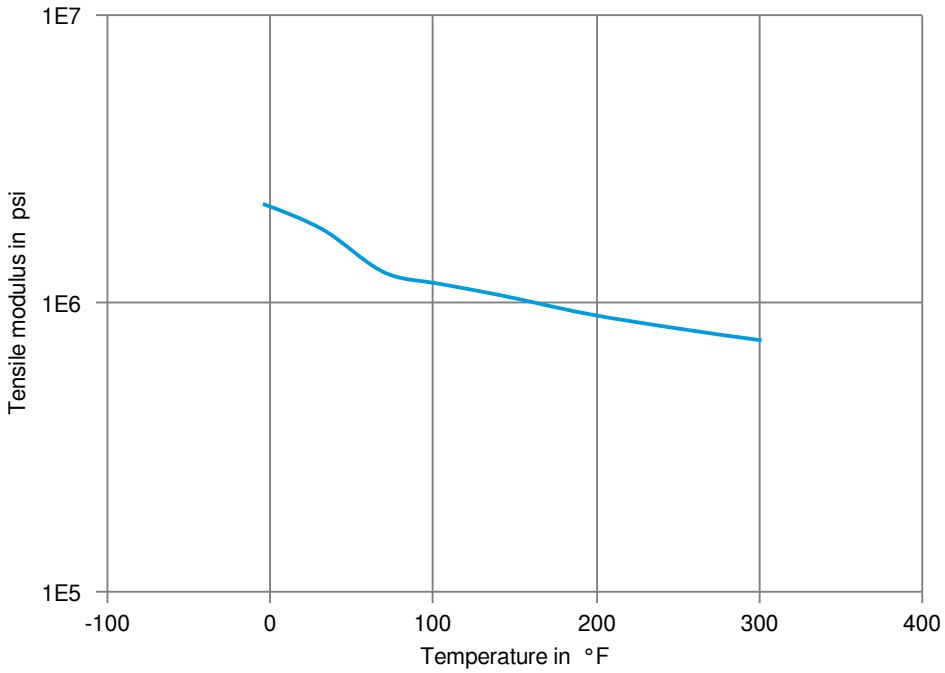
Tensile modulus-temperature (dry)



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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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