CAMPUS® Datasheet

Zytel® 70G30HSLR BK099 - PA66-GF30
DuPont Engineering Polymers

Product Texts

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, DuPont recommends, 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.

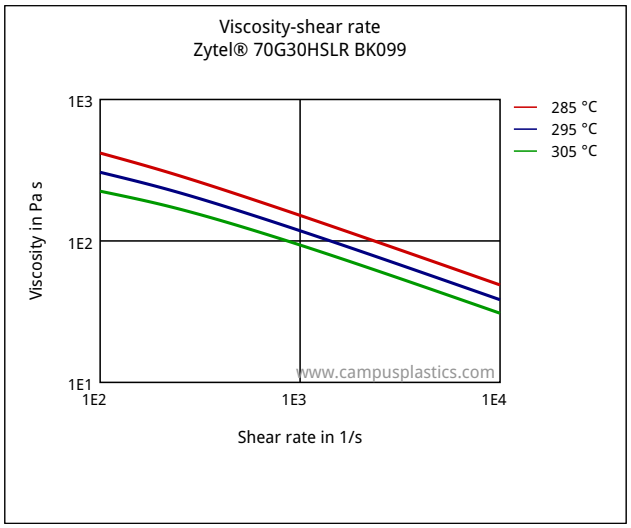
Zytel® 70G30HSLR BK099 is a 30% glass fiber reinforced, heat stabilized, hydrolysis resistant polyamide 66 resin for injection molding.

Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	**0.3 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.0 / ***	%	ISO 294-4, 2577
Mechanical properties	**dry / cond**	**Unit**	**Test Standard**
Tensile modulus	**10000 / 7000**	MPa	ISO 527-1/-2
Stress at break	**200 / 130**	MPa	ISO 527-1/-2
Strain at break	**3 / 5**	%	ISO 527-1/-2
Charpy impact strength, +23°C	**70 / 80**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**70 / 70**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**12 / 15**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**9 / 9**	kJ/m²	ISO 179/1eA
Thermal properties	**dry / cond**	**Unit**	**Test Standard**
Melting temperature, 10°C/min	**262 / ***	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	**75 / ***	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	**253 / ***	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	**261 / ***	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	**22 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	**81 / ***	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	**HB / ***	class	IEC 60695-11-10
Thickness tested (1.5)	**1.5 / ***	mm	IEC 60695-11-10
Yellow Card available	**Yes / ***	-	-
Burning Behav. at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested (h)	**0.8 / ***	mm	IEC 60695-11-10
Yellow Card available	**Yes / ***	-	-
Burning rate, thickness 1 mm	**24**	mm/min	ISO 3795 (FMVSS 302)
FMVSS	**SE/B**	-	ISO 3795 (FMVSS 302)
Oxygen index	**24 / ***	%	ISO 4589-1/-2
Electrical properties	**dry / cond**	**Unit**	**Test Standard**
Volume resistivity	**>1E13 / 1E9**	Ohm*m	IEC 62631-3-1
Electric strength	**38 / 32**	kV/mm	IEC 60243-1
Comparative tracking index	**400 / -**	-	IEC 60112
Other properties	**dry / cond**	**Unit**	**Test Standard**
Water absorption	**6 / ***	%	Sim. to ISO 62

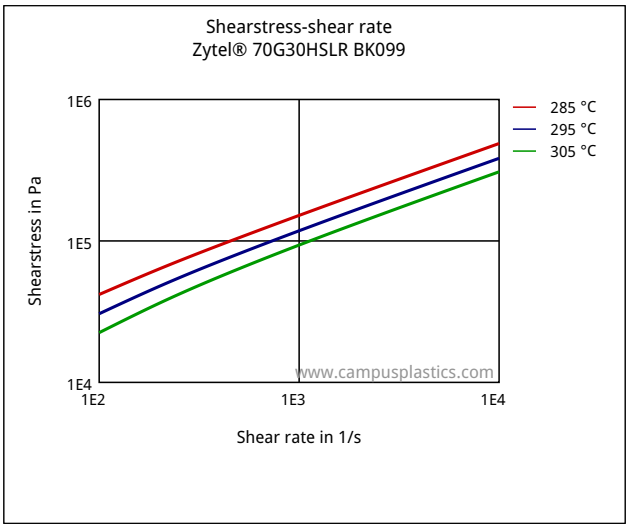
Humidity absorption	**1.9 / ***	%	Sim. to ISO 62
Density	**1370 / -**	kg/m³	ISO 1183
Material specific properties	**dry / cond**	**Unit**	**Test Standard**
Viscosity number	**150 / ***	cm³/g	ISO 307, 1157, 1628
Rheological calculation properties	**Value**	**Unit**	**Test Standard**
Spec. heat capacity melt	**2290**	J/(kg K)	-
Ejection temperature	**210**	°C	-

Diagrams

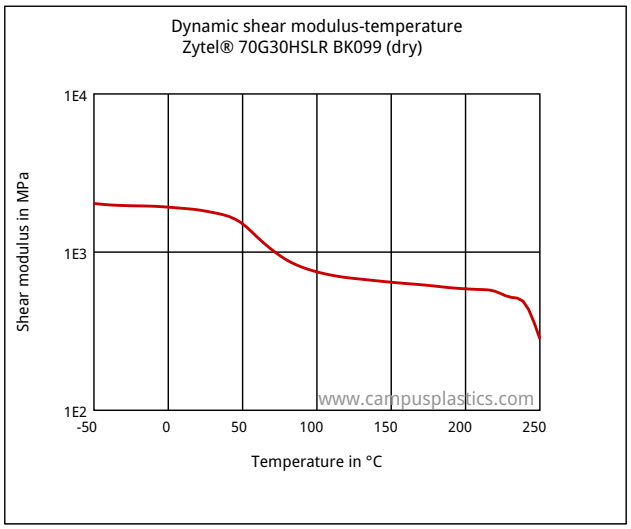
Viscosity-shear rate



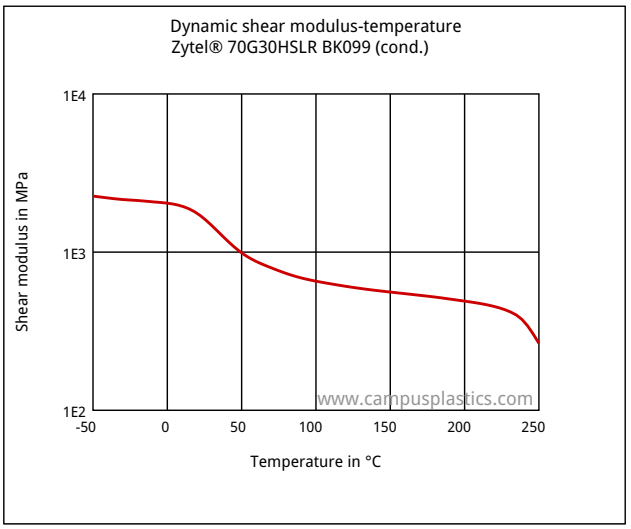
Shearstress-shear rate



Dynamic shear modulus-temperature



Dynamic shear modulus-temperature



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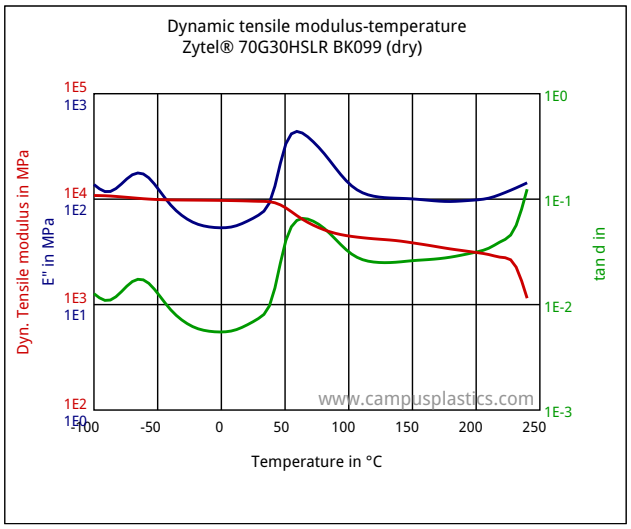
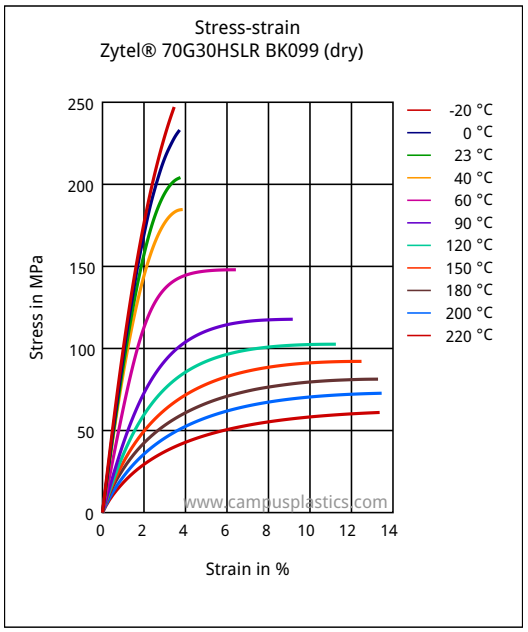
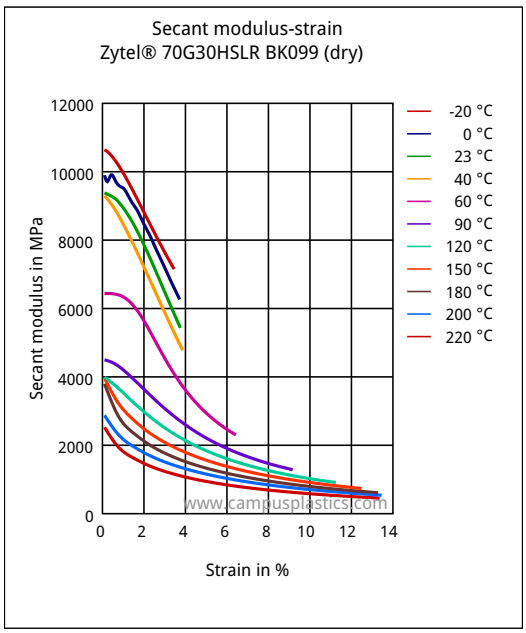
Dynamic tensile modulus-temperature



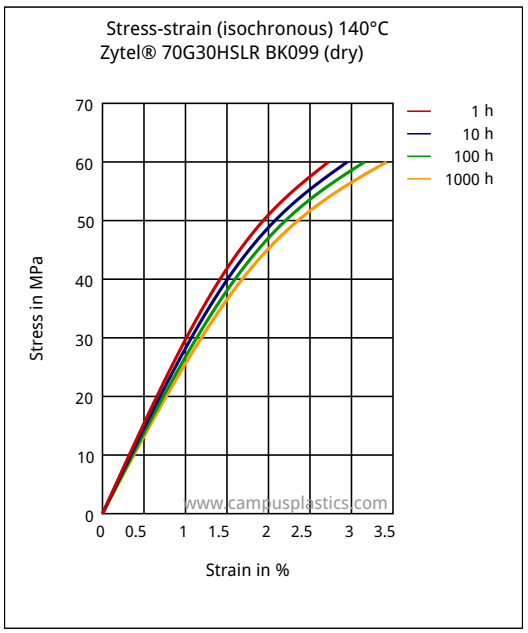
Stress-strain



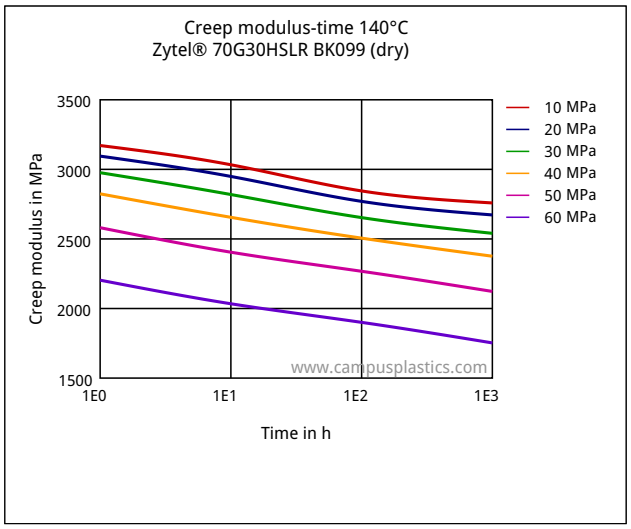
Secant modulus-strain



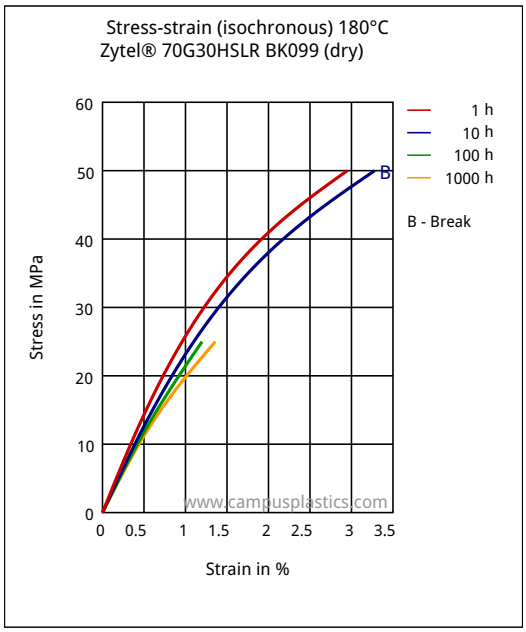
Stress-strain (isochronous) 140°C



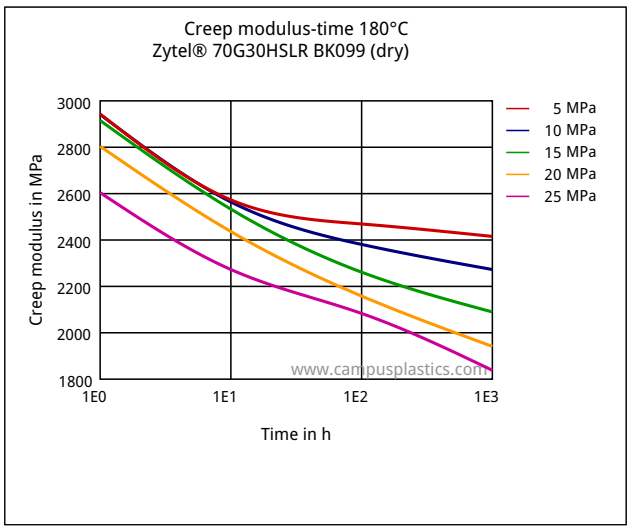
Creep modulus-time 140°C



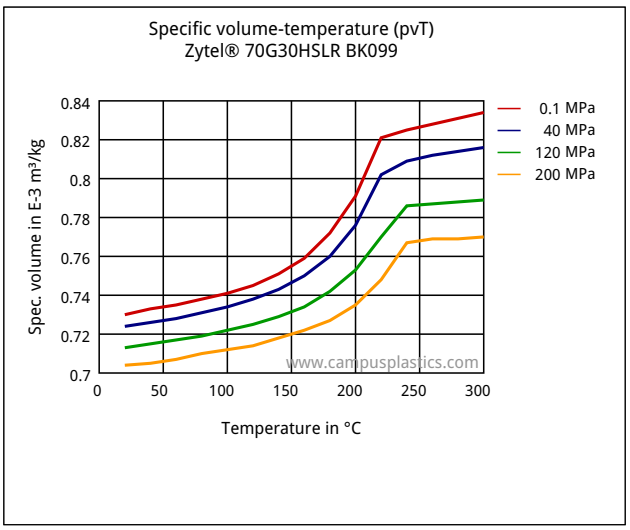
Stress-strain (isochronous) 180°C



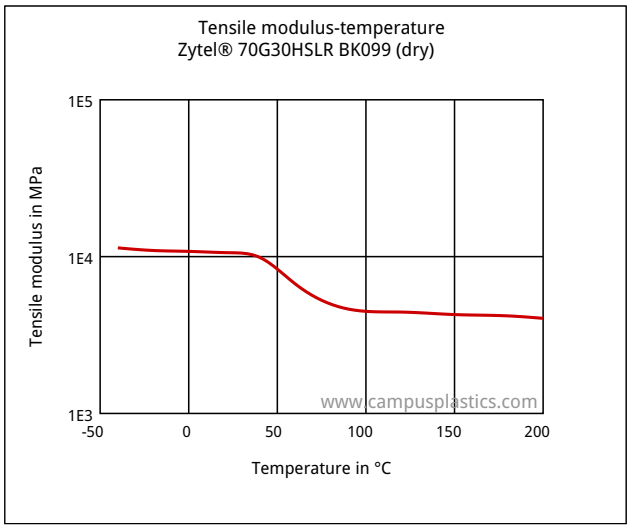
Creep modulus-time 180°C



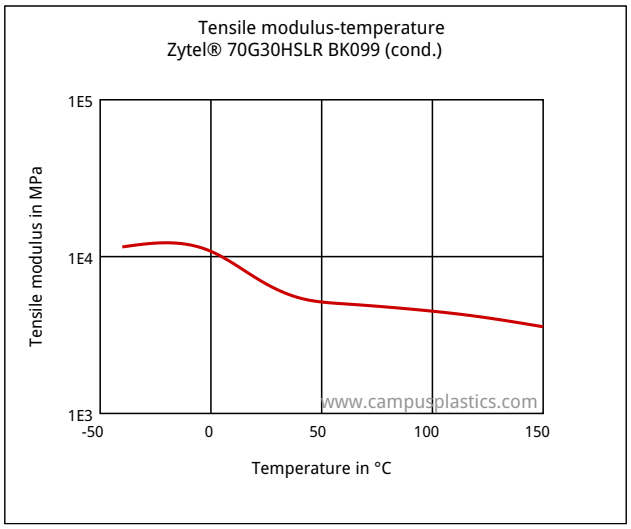
Specific volume-temperature (pvT)



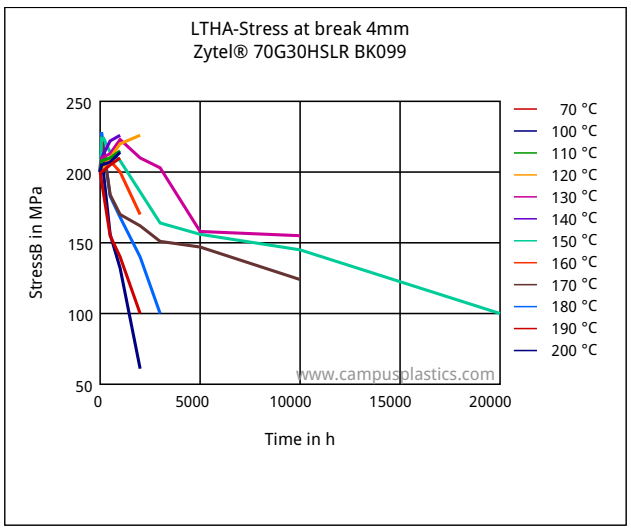
Tensile modulus-temperature



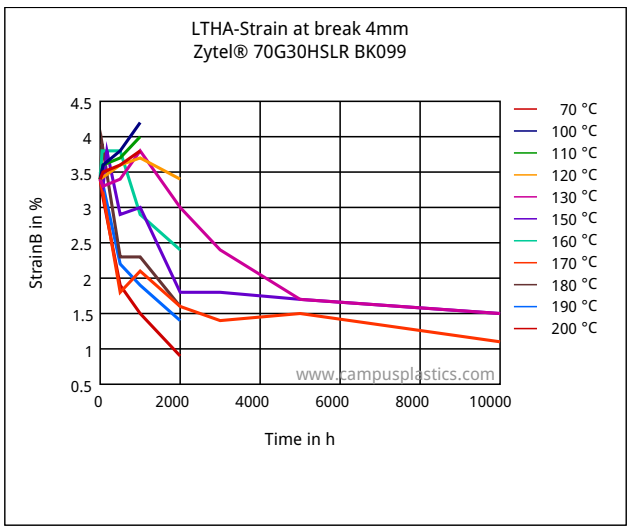
Tensile modulus-temperature



LTHA-Stress at break 4mm



LTHA-Strain at break 4mm



Characteristics

Processing
Injection Molding

Special Characteristics
Heat stabilized or stable to heat

Delivery form
Pellets

Regional Availability
North America, Europe, Asia Pacific, South and Central America, Near East/Africa

Additives
Lubricants, Release agent

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)
- Motor oil OS206 304 Ref.Eng.Oil, ISP (135°C)
- Automatic hypoid-gear oil Shell Donax TX (135°C)
- Hydraulic oil Pentosin CHF 202 (125°C)

Standard Fuels

- ISO 1817 Liquid 1 (60°C)
- ISO 1817 Liquid 2 (60°C)
- ISO 1817 Liquid 3 (60°C)
- ISO 1817 Liquid 4 (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)
- 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)
- Deionized water (90°C)
- Phenol solution (5% by mass) (23°C)
- Coolant Glysantin G48, 1:1 in water (125°C)

All data provided according to ISO 10350 for single points and ISO 11403 for multipoints.

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.
Test temperatures are 23°C unless otherwise stated.