

Ultramid® B3EG6
PA6-GF30

BASF

A glass fibre reinforced injection moulding grade for industrial articles and electrical insulating parts.

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	35 / *	cm ³ /10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.2 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	9500 / 6200	MPa	ISO 527
Stress at Break	185 / 115	MPa	ISO 527
Strain at Break	3.5 / 8	%	ISO 527
Impact Strength (Charpy), +23°C	95 / 110	kJ/m ²	ISO 179/1eU
Impact Strength (Charpy), -30°C	80 / -	kJ/m ²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	15 / 30	kJ/m ²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	11 / -	kJ/m ²	ISO 179/1eA

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	220 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	210 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	220 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	220 / *	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	22 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	106 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	HB / *	class	UL 94
Thickness tested	1.6 / *	mm	-
UL recognition	yes / *	-	-
Burning Behav. at thickness h	HB / *	class	UL 94
Thickness tested	0.8 / *	mm	-
UL recognition	yes / *	-	-
Oxygen index	22.5 / *	%	ISO 4589-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	3.8 / 6.8	-	IEC 62631-2-1
Dissipation Factor, 100Hz	230 / 2200	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	230 / 2200	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E10	Ohm	IEC 62631-3-2
Electric Strength	39 / 35	kV/mm	IEC 60243-1
Comparative tracking index	- / 575	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	6.6 / *	%	Sim. to ISO 62
Humidity absorption	2.1 / *	%	Sim. to ISO 62
Density	1360 / -	kg/m ³	ISO 1183

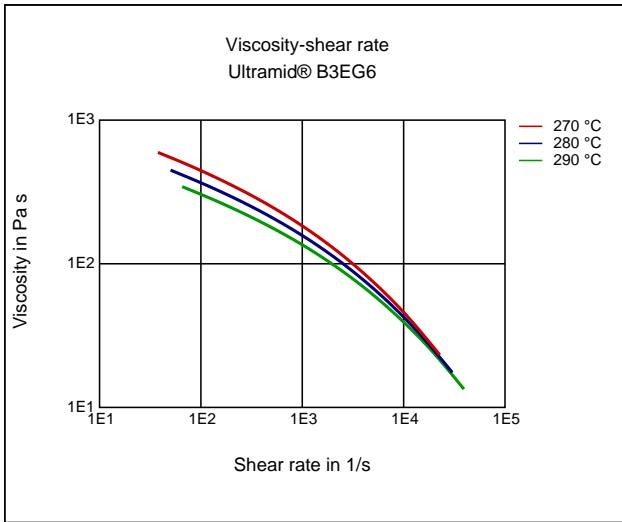
Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	140 / *	cm ³ /g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Spec. heat capacity of melt	2230	J/(kg K)	-
Ejection temperature	160	°C	-

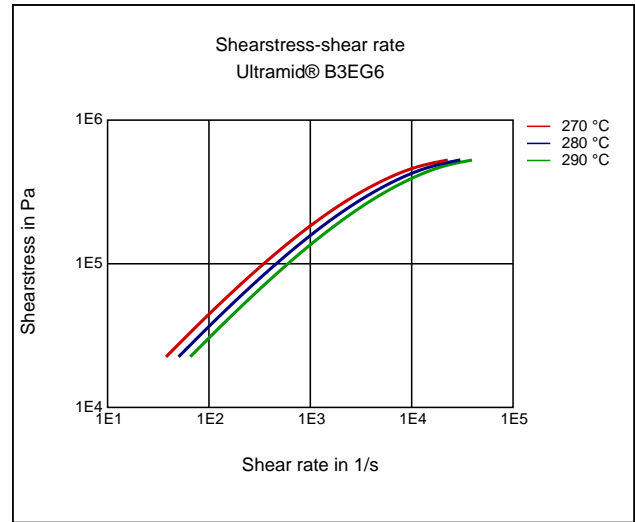
Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	280	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

Diagrams

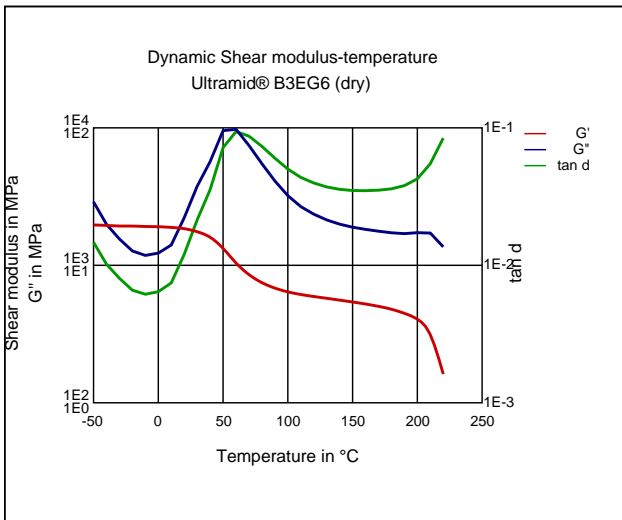
Viscosity-shear rate



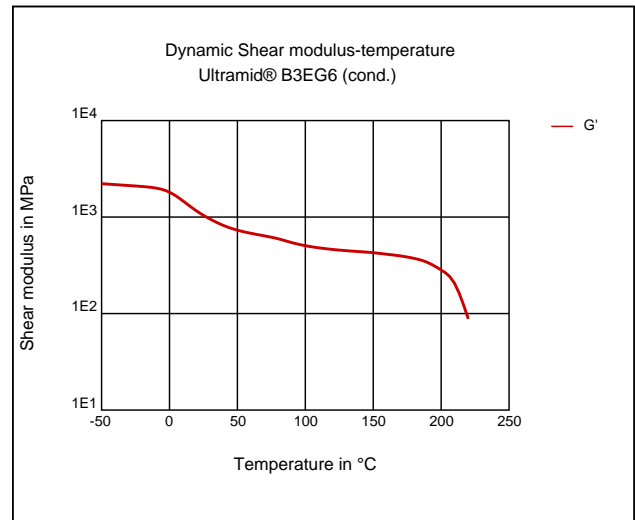
Shearstress-shear rate



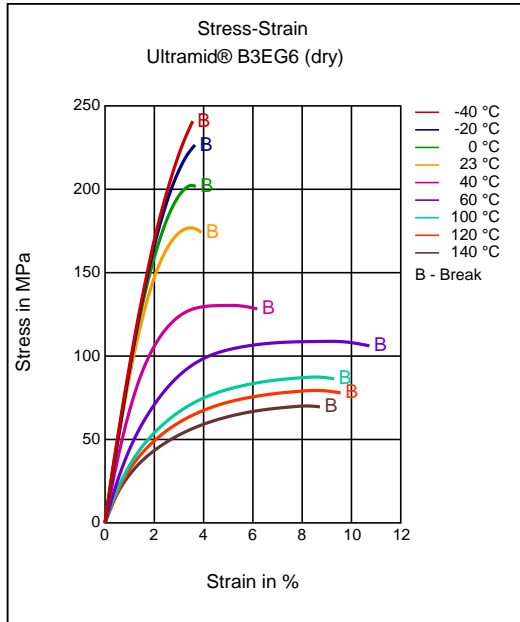
Dynamic Shear modulus-temperature



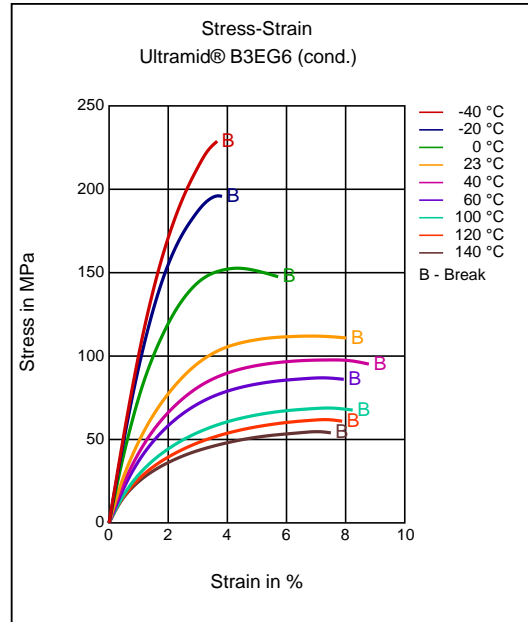
Dynamic Shear modulus-temperature



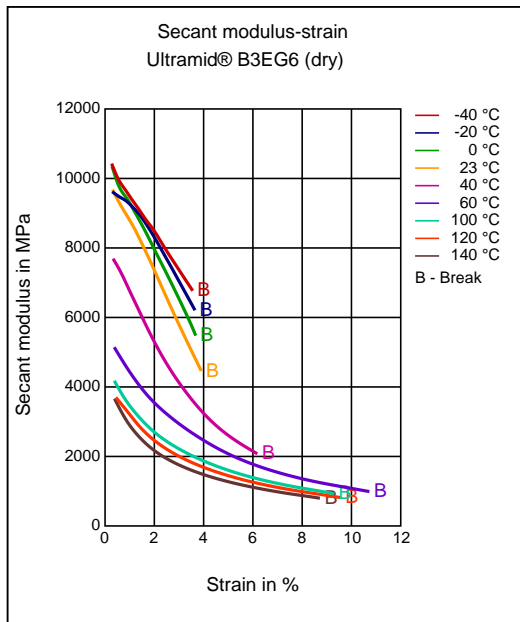
Stress-strain



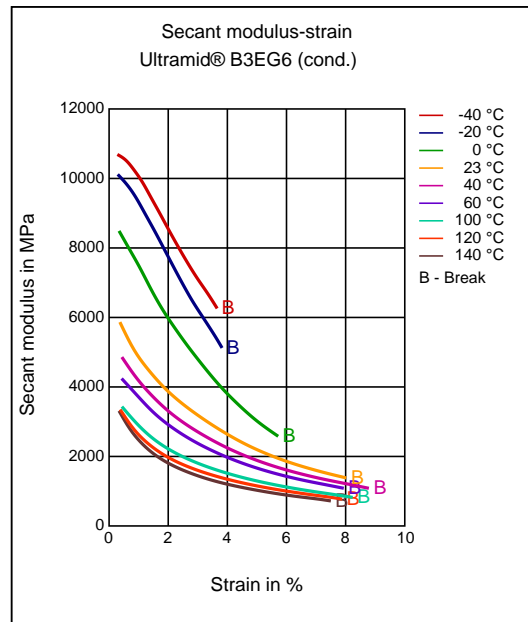
Stress-strain



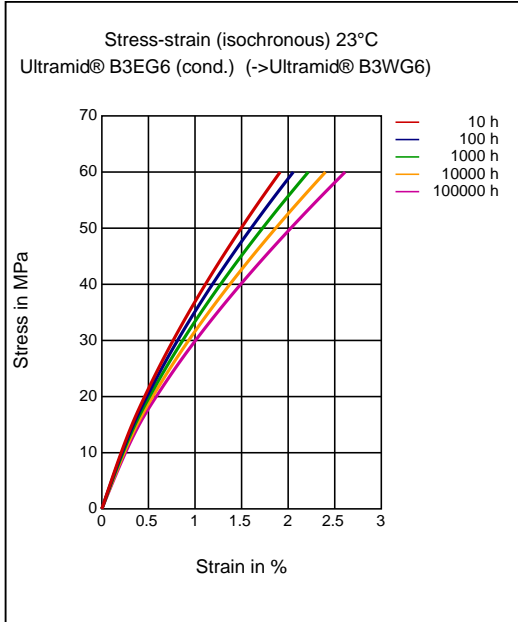
Secant modulus-strain



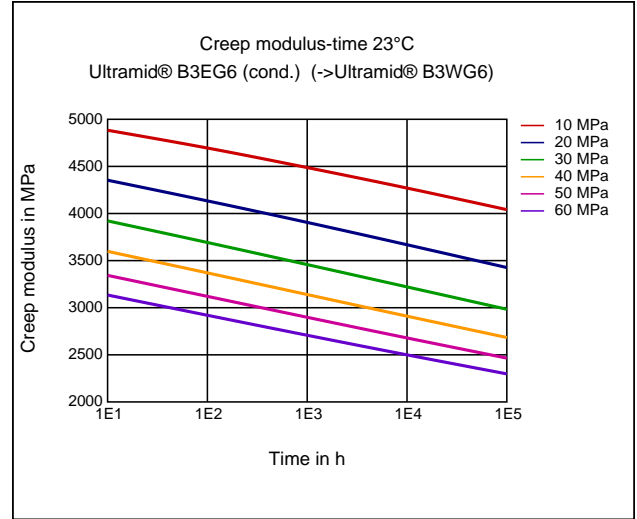
Secant modulus-strain



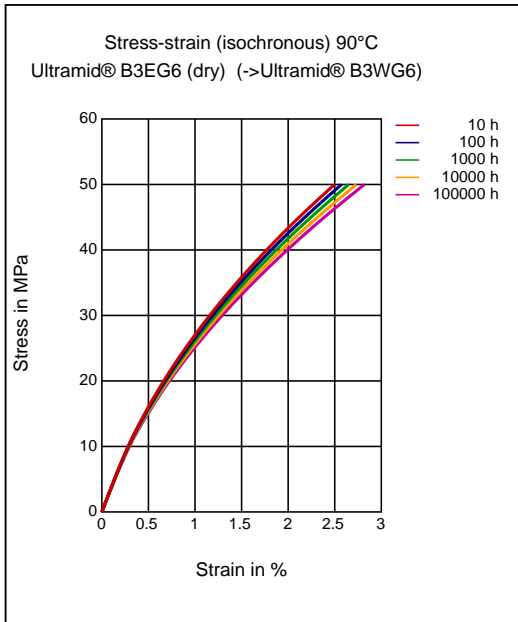
Stress-strain (isochronous) 23 °C



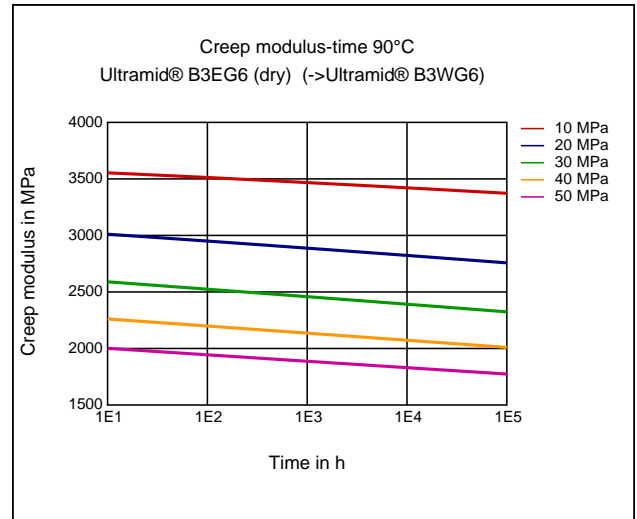
Creep modulus-time 23 °C



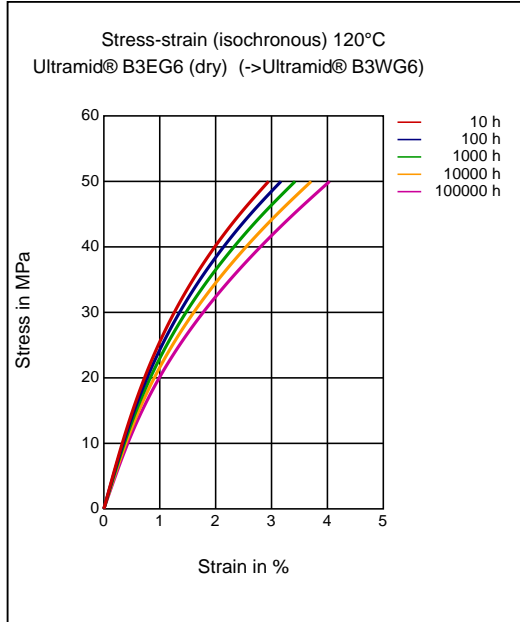
Stress-strain (isochronous) 90 °C



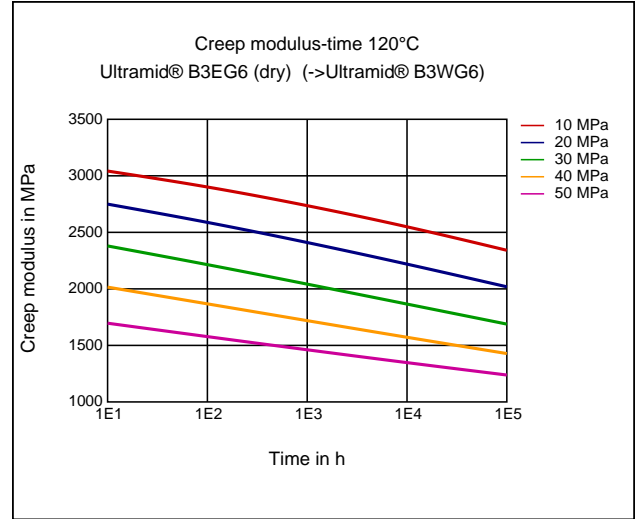
Creep modulus-time 90 °C



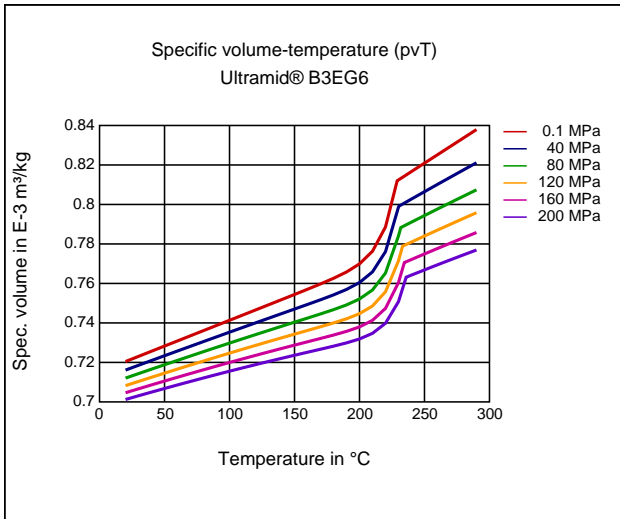
Stress-strain (isochronous) 120 °C



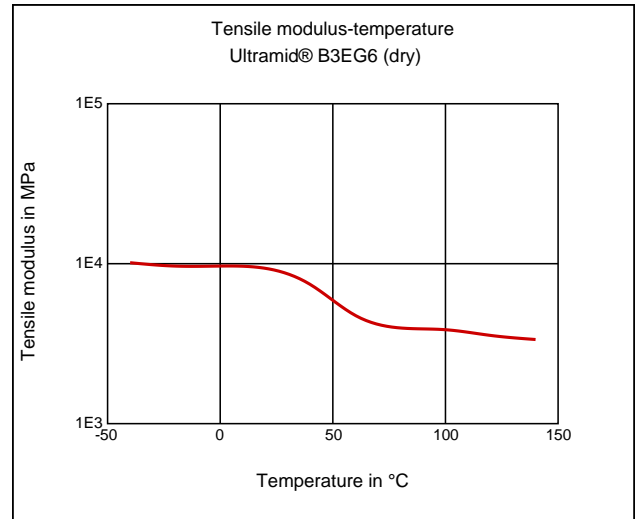
Creep modulus-time 120 °C



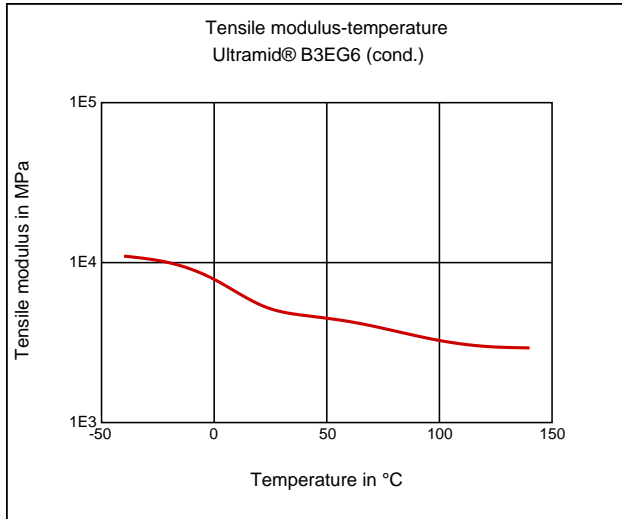
Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Tensile Modulus-Temperature



Characteristics

Processing

Injection Molding

Additives

Lubricants, Release agent

Delivery form

Pellets

Special Characteristics

Heat aging stabilized

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .15 %

Pre/Post-processing, Pre-drying, Temperature: 80 °C

Pre/Post-processing, Pre-drying, Time: 4 h

PROCESSING

injection molding, Melt temperature, range: 270 - 290 °C

injection molding, Melt temperature, recommended: 280 °C

injection molding, Mold temperature, range: 80 - 90 °C

injection molding, Mold temperature, recommended: 80 °C

injection molding, Dwell time, thermoplastics: 10 min

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)

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)

Standard Fuels

- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (23 °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)
- ✗ 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)
- ✓ Water (23 °C)

Disclaimer

Liability Exclusion

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