

# CAMPUS® Datasheet

Ultramid® A3EG6 - PA66-GF30  
BASF



## Product Texts

Glass fibre reinforced injection moulding grade for machinery components and housings of high stiffness and dimensional stability such as lamp socket housings, cooling fans, insulating profile for aluminium window frames, water containers for automotive cooling systems, as well as electrically insulating parts.

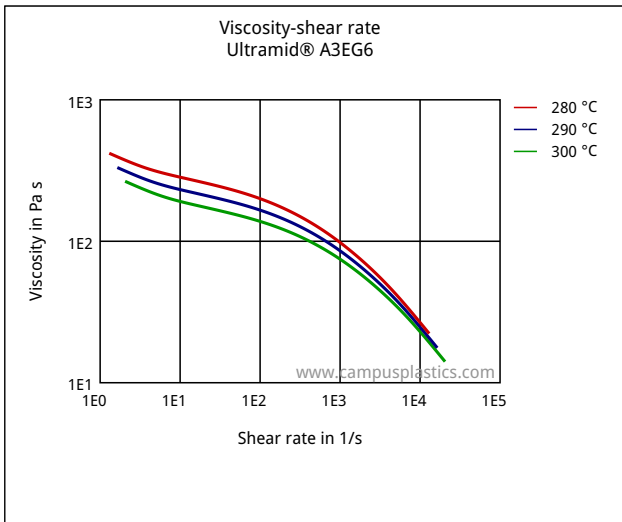
Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	30 / *	cm <sup>3</sup> /10min	ISO 1133
Temperature	275 / *	°C	ISO 1133
Load	5 / *	kg	ISO 1133
Molding shrinkage, parallel	0.5 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / *	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile modulus	10000 / 7200	MPa	ISO 527-1/-2
Stress at break	190 / 130	MPa	ISO 527-1/-2
Strain at break	3 / 5	%	ISO 527-1/-2
Tensile creep modulus, 1000h	* / 5300	MPa	ISO 899-1
Charpy impact strength, +23°C	85 / 100	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	70 / 70	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	11 / 20	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	10 / 9.5	kJ/m <sup>2</sup>	ISO 179/1eA
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 10°C/min	260 / *	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.80 MPa	250 / *	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	260 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	250 / *	°C	ISO 306
Coeff. of linear therm. expansion, parallel	28 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	88 / *	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)	1.6 / *	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 / *	-	-
Oxygen index	24 / *	%	ISO 4589-1/-2
Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 100Hz	4.2 / 9.7	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.7 / 4.3	-	IEC 62631-2-1
Dissipation factor, 100Hz	120 / 1530	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	210 / 810	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	40 / 37	kV/mm	IEC 60243-1
Comparative tracking index	- / 550	-	IEC 60112
Other properties	dry / cond	Unit	Test Standard
Water absorption	5.5 / *	%	Sim. to ISO 62

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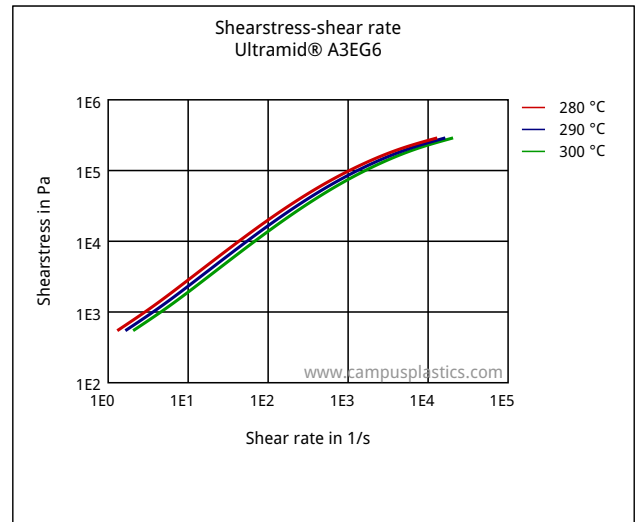
Humidity absorption	1.7 / *	%	Sim. to ISO 62
Density	1360 / -	kg/m <sup>3</sup>	ISO 1183
<b>Material specific properties</b>			
Viscosity number	145 / *	cm <sup>3</sup> /g	ISO 307, 1157, 1628
<b>Rheological calculation properties</b>			
Ejection temperature	195	°C	-
<b>Test specimen production</b>			
Injection Molding, melt temperature	290	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

**Diagrams**

**Viscosity-shear rate**

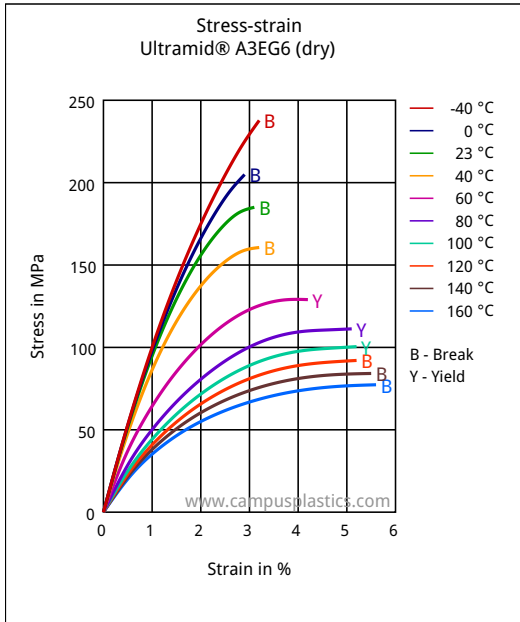


**Shearstress-shear rate**

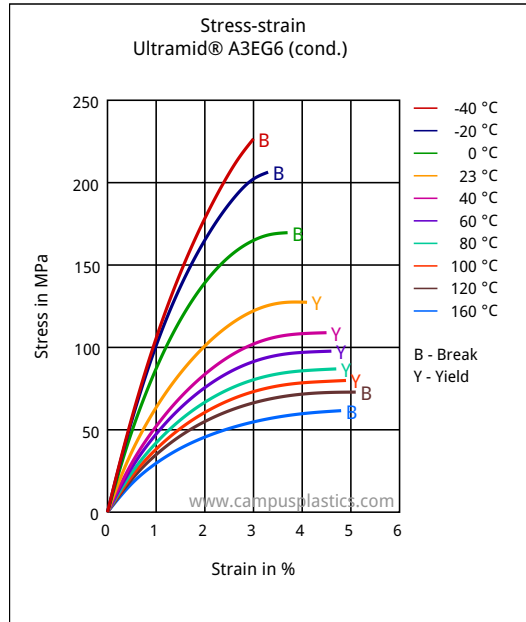


**Ultramid® A3EG6 - PA66-GF30**  
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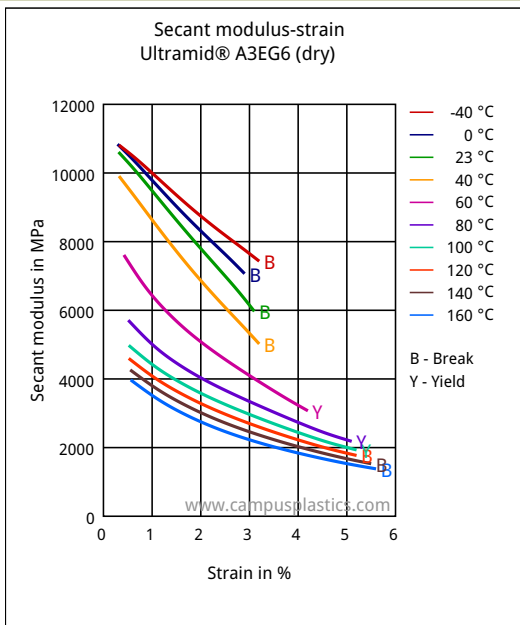
**Stress-strain**



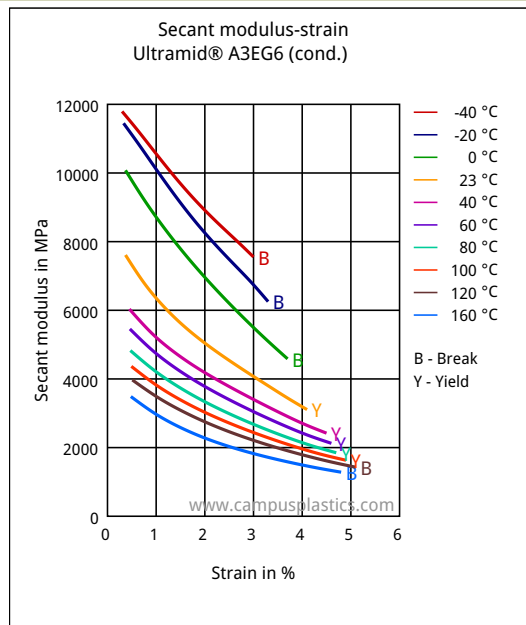
**Stress-strain**



**Secant modulus-strain**

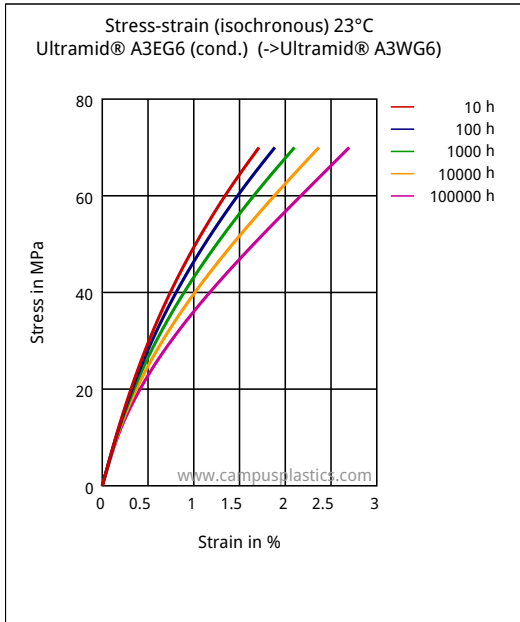


**Secant modulus-strain**

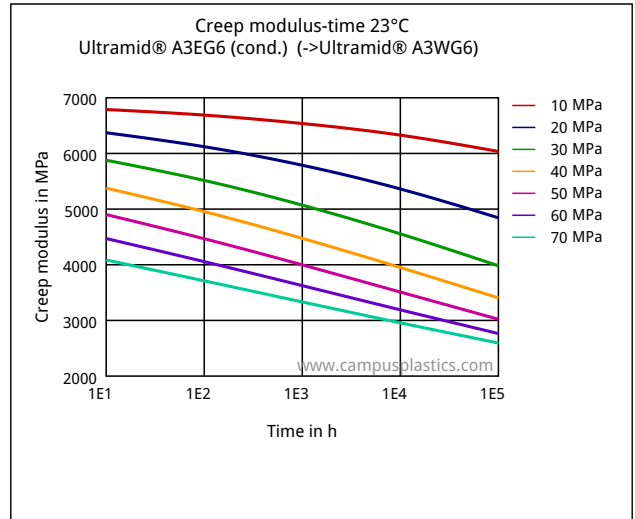


**Ultramid® A3EG6 - PA66-GF30**  
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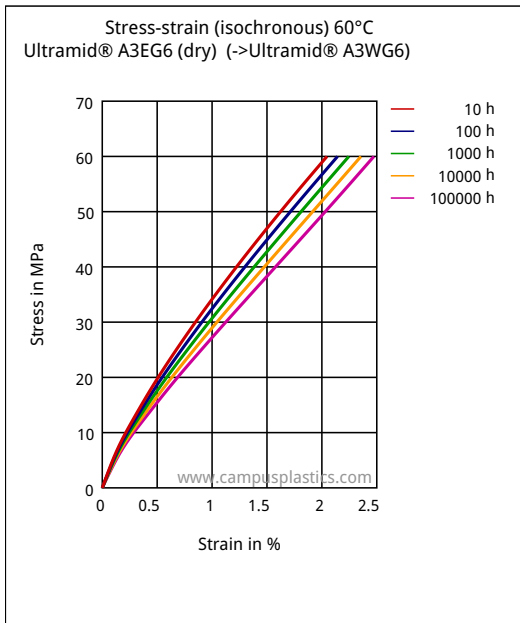
**Stress-strain (isochronous) 23°C**



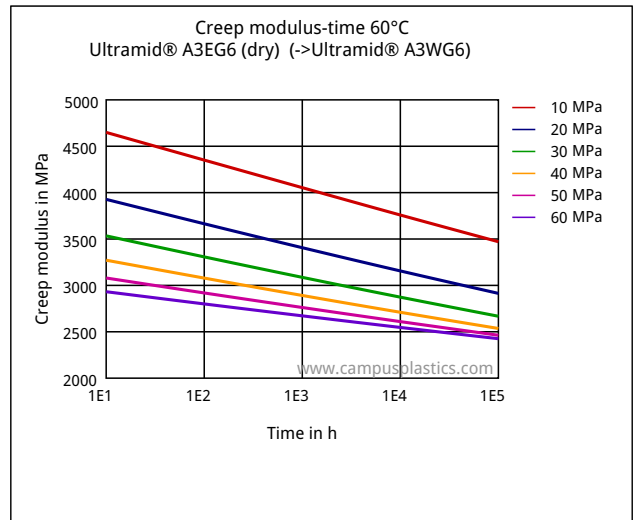
**Creep modulus-time 23°C**



**Stress-strain (isochronous) 60°C**

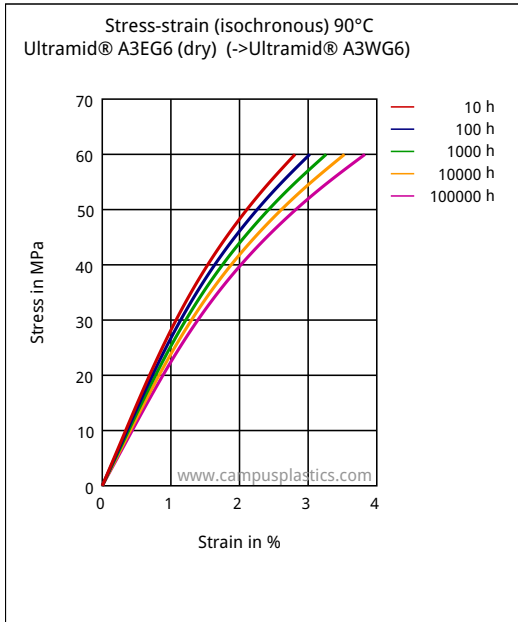


**Creep modulus-time 60°C**

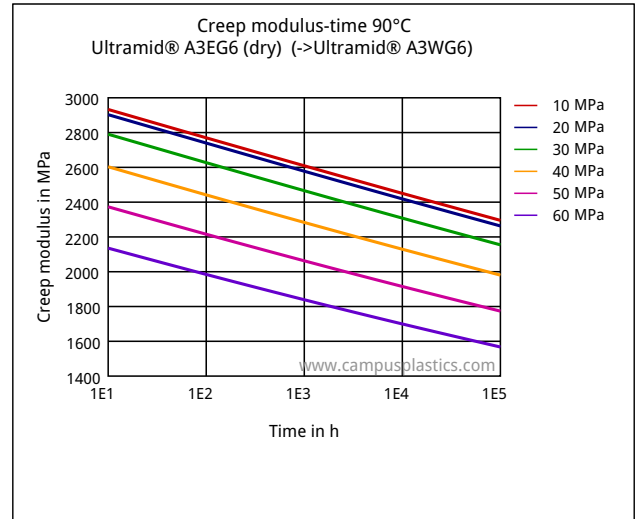


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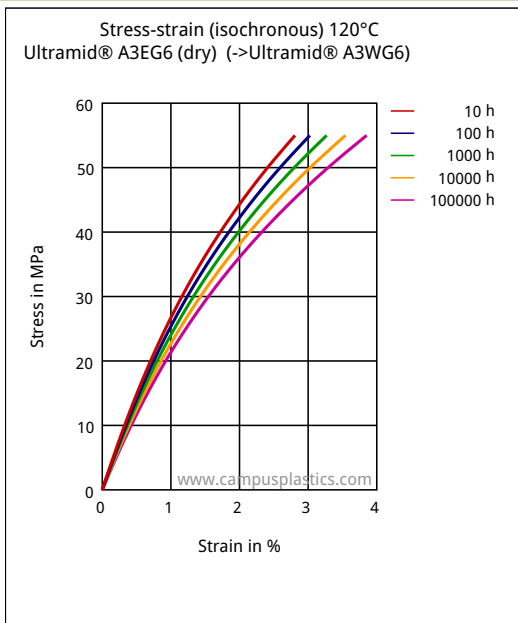
**Stress-strain (isochronous) 90°C**



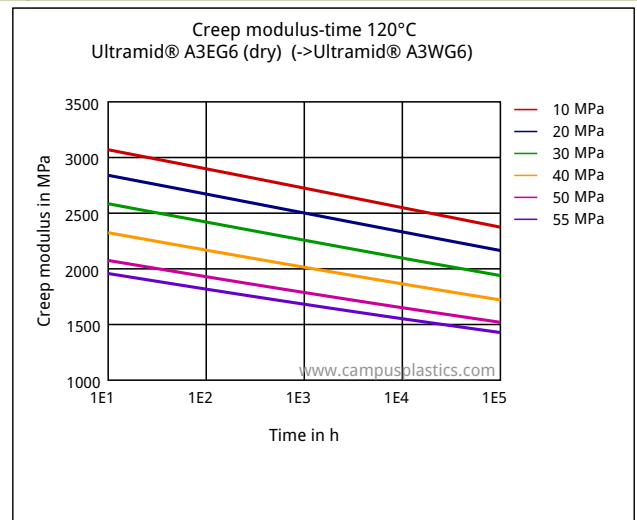
**Creep modulus-time 90°C**



**Stress-strain (isochronous) 120°C**

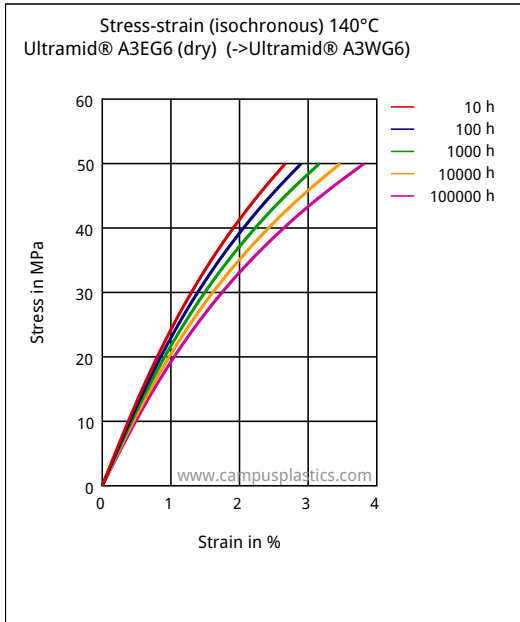


**Creep modulus-time 120°C**

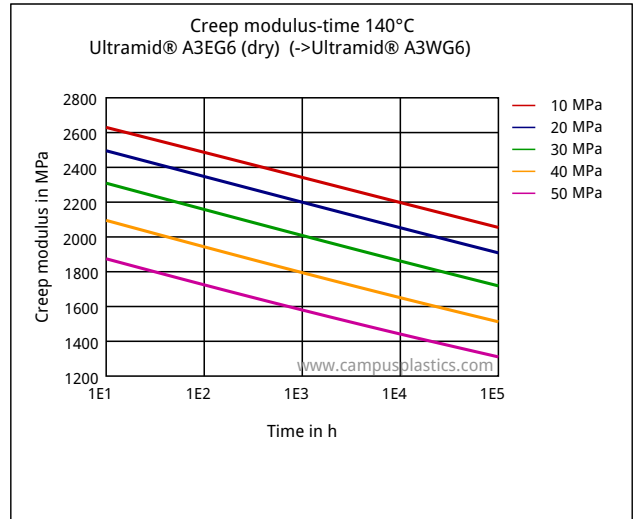


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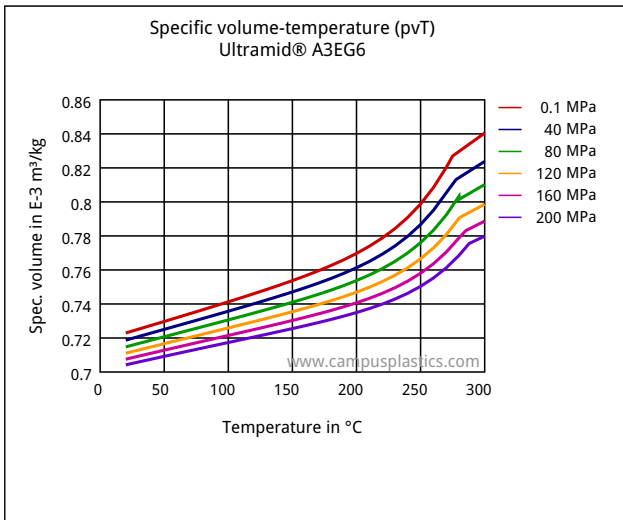
**Stress-strain (isochronous) 140°C**



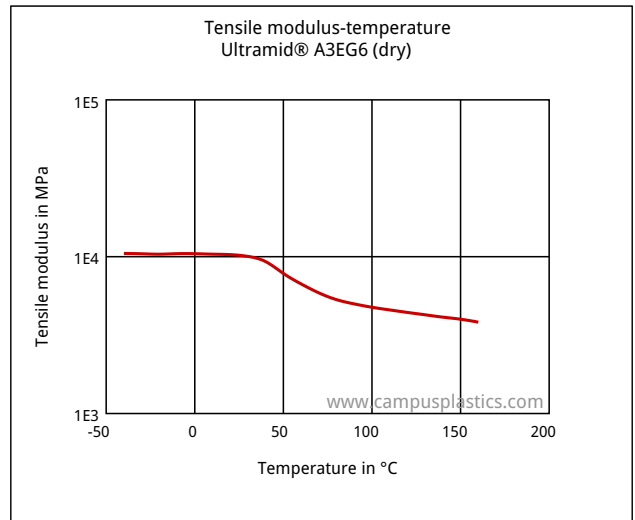
**Creep modulus-time 140°C**



**Specific volume-temperature (pvT)**

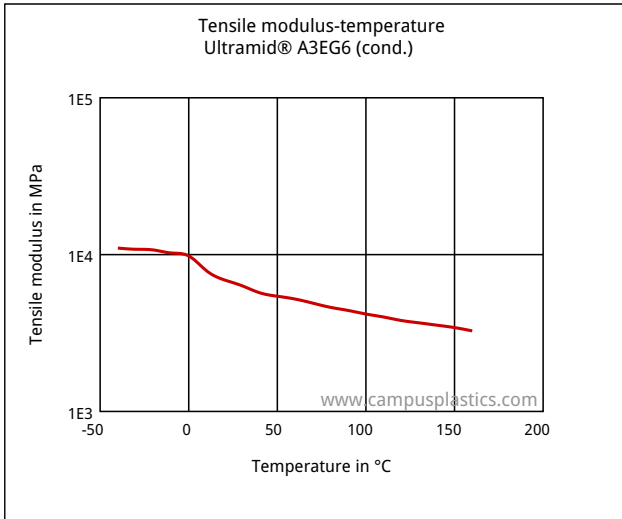


**Tensile modulus-temperature**



# Ultramid® A3EG6 - PA66-GF30 BASF

## Tensile modulus-temperature



## Characteristics

### Processing

Injection Molding

### Delivery form

Pellets

### Additives

Lubricants, Release agent

### Special Characteristics

Heat stabilized or stable to heat

### Regional Availability

Europe, Asia Pacific

## Other text information

### 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: 280 - 300 °C

injection molding, Melt temperature, recommended: 290 °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)




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### 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)

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