

**Grilamid L 20 G**

PA12

EMS-GRIVORY | a unit of EMS-CHEMIE AG

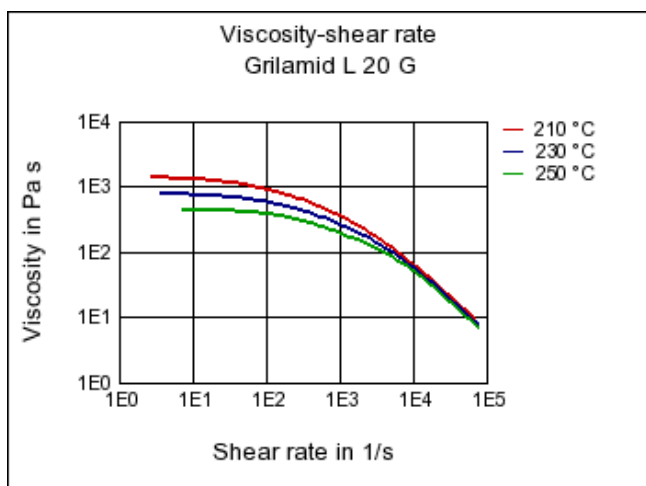
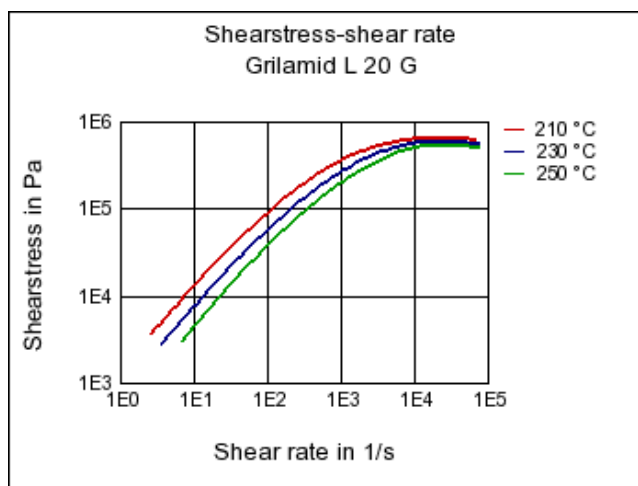
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	<b>1600 / 1100</b>	MPa	ISO 527-1/-2
Charpy impact strength (+23°C)	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength (-30°C)	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	<b>5 / 7</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	<b>6 / 6</b>	kJ/m <sup>2</sup>	ISO 179/1eA

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	<b>178 / -</b>	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	<b>45 / -</b>	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	<b>115 / -</b>	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	<b>120 / -</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	<b>140 / -</b>	E-6/K	ISO 11359-1/-2
Burning Behav. at thickness h	<b>HB / -</b>	class	IEC 60695-11-10
Thickness tested	<b>0.8 / -</b>	mm	IEC 60695-11-10

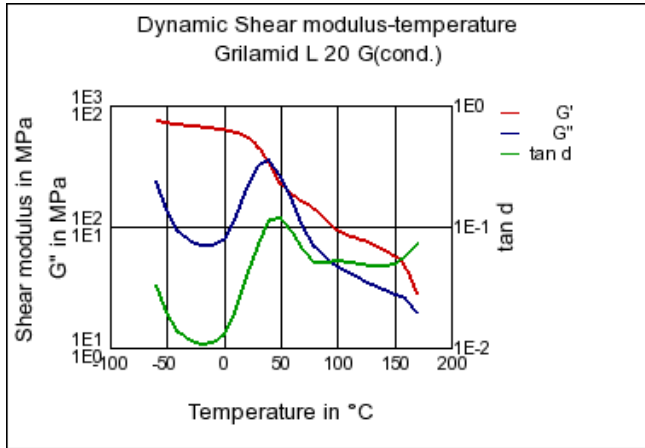
Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	<b>- / 1E11</b>	Ohm*m	IEC 60093
Surface resistivity	<b>- / 1E12</b>	Ohm	IEC 60093
Electric strength	<b>- / 32</b>	kV/mm	IEC 60243-1
Comparative tracking index	<b>- / 600</b>	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	<b>1.5 / -</b>	%	Sim. to ISO 62
Humidity absorption	<b>0.7 / -</b>	%	Sim. to ISO 62
Density	<b>1010 / -</b>	kg/m <sup>3</sup>	ISO 1183

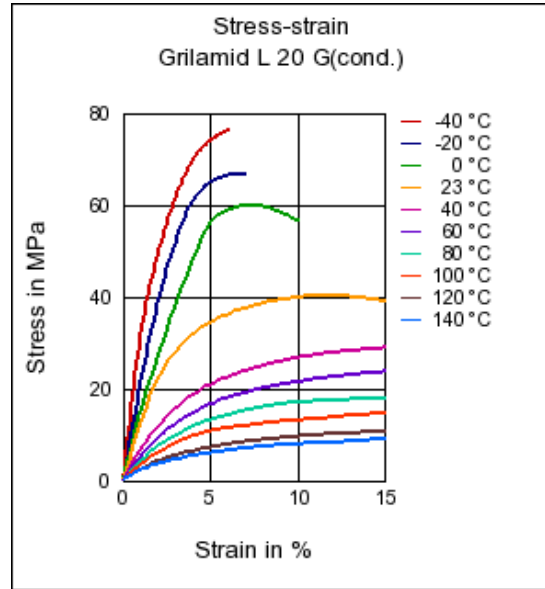
Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	<b>0.8 / -</b>	%	ISO 294-4, 2577
Molding shrinkage (normal)	<b>0.8 / -</b>	%	ISO 294-4, 2577

**Diagrams**
**Viscosity-shear rate**

**Shearstress-shear rate**


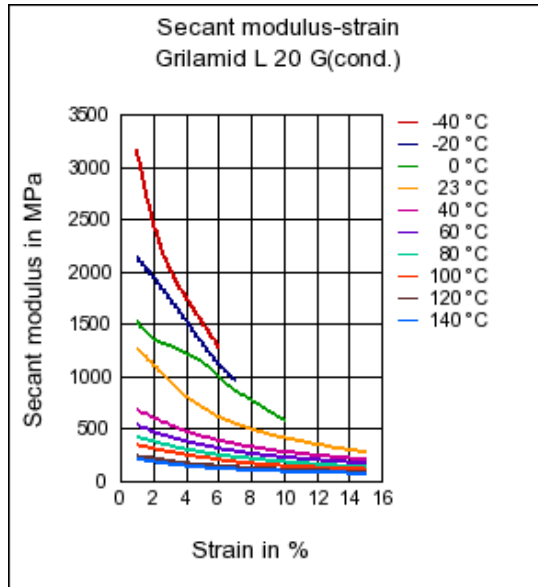
Dynamic Shear modulus-temperature



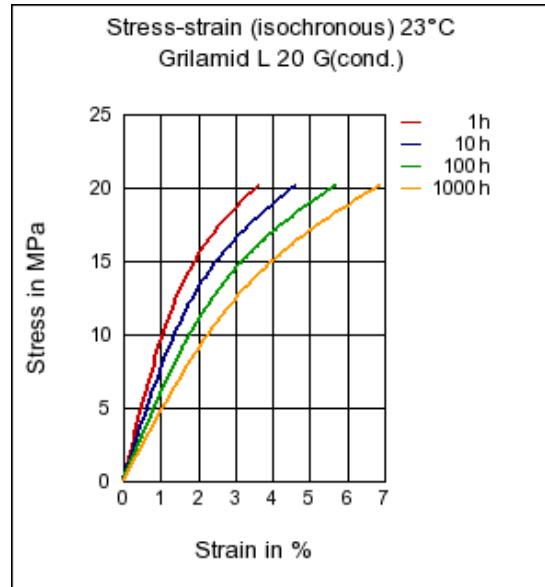
Stress-strain



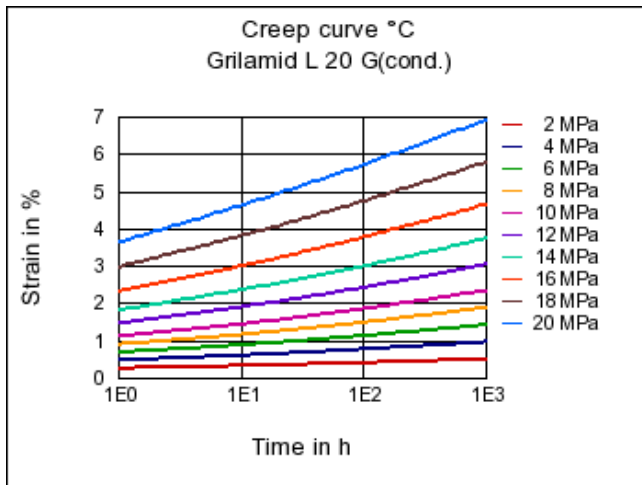
Secant modulus-strain



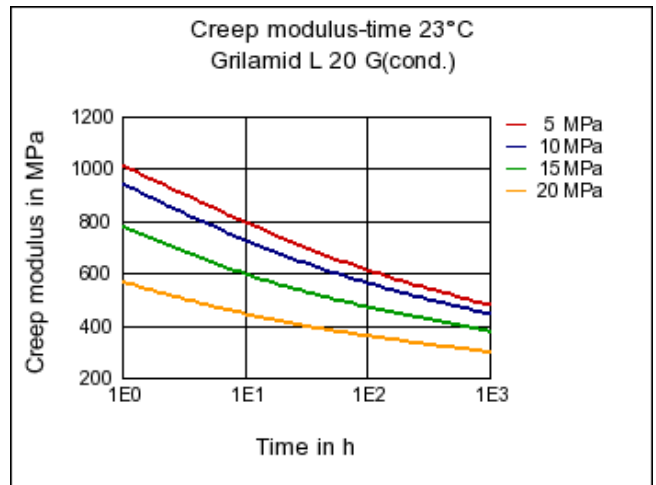
Stress-strain (isochronous) 23°C



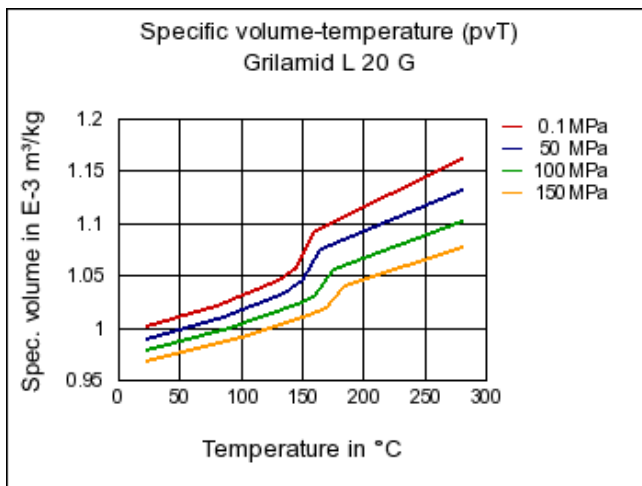
Creep curve °C



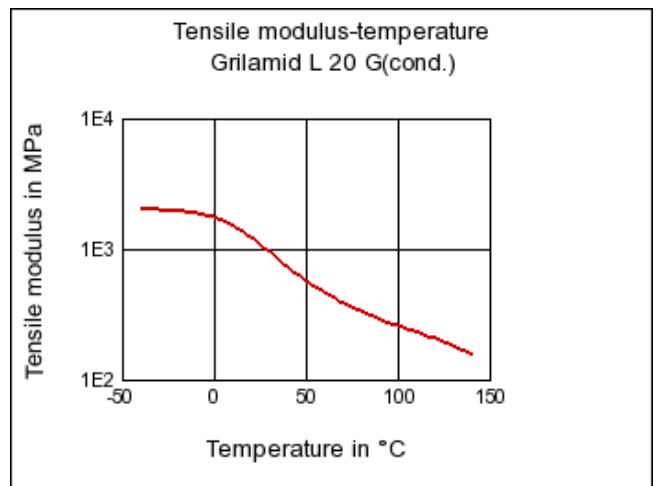
Creep modulus-time 23°C



Specific volume-temperature (pvT)



Tensile modulus-temperature



Characteristics

Processing

Injection Molding

Delivery form

Granules

Special Characteristics

Improved UV resistance (outdoor use), Improved heat resistance

Regional Availability

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

Chemical Media Resistance

Automotive

Powertrain and Chassis









Electricals & Electronics

Connectors




Industry & Consumer goods

Housewares, Mechanical Engineering, Medical devices, Sports & Leisure, Tools & Accessories




## 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 (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










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-  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)
-  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)