TECHNICAL DATASHEET

Grilamid L 20 G natural

PA12

EMS-GRIVORY
Material Database

Physical
Low moisture absorption, High dimensional stability, Low density, Low melting temperature

Chemical
Excellent chemical resistance, Highly resistant to hydrolysis, Stress cracking resistant

Mechanical
Tough, Good abrasion resistance

Others
Unlimited colourability

Processing
Injection molding

Delivery form
Granules

Additives
Lubricants

Special Characteristics
Light stabilized or stable to light

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

Product Information

Product-nomenclature: ISO 16396-PA12,,M1HR,C18-010

Mechanical Properties	dry/cond	Unit	Standard
Tensile modulus	1600 / 1100	MPa	ISO 527
Yield stress	45 / 40	MPa	ISO 527
Yield strain	5 / 12	%	ISO 527
Nominal strain at break	>50 / >50	%	ISO 527
Charpy impact strength, +23°C	N / N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	N / N	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	7 / 7	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	6 / 6	kJ/m²	ISO 179/1eA
Shore D hardness	70 / -		ISO 7619-1
Ball indentation hardness	75 / 70	MPa	ISO 2039-1
Shore A hardness (15s)	- / 74	-	ISO 868

Thermal Properties	dry/cond	Unit	Standard
Melting temperature, 10°C/min	178 / -	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.80 MPa	45 / -	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	115 / -	°C	ISO 75-1/-2
Max. usage temperature (long term)	100	°C	ISO 2578
Max. usage temperature (short term)	150	°C	EMS

Electrical Properties	dry/cond	Unit	Standard
Electric strength	- / 32	kV/mm	IEC 60243-1
Comparative tracking index	- / 600		IEC 60112

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Electrical Properties	dry/cond	Unit	Standard
Volume resistivity	- / 1E11	Ohm*m	IEC 62631-3-1
Surface resistivity	- / 1E12	Ohm	IEC 62631-3-2

General Properties	dry/cond	Unit	Standard
Density	1010 / -	kg/m³	ISO 1183
Burning behav. at thickness h	HB / -	class	IEC 60695-11-10
Thickness tested	0.8 / -	mm	
Water absorption	1.5 / -	%	Sim. to ISO 62
Humidity absorption	0.7 / -	%	Sim. to ISO 62
Molding shrinkage, parallel	0.8 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.85 / -	%	ISO 294-4, 2577

Processing Injection Molding	Value	Unit	Standard
Hopper zone	40 - 60	°C	
Feeding zone	220 - 240	°C	
Compression zone	230 - 260	°C	
Metering zone	230 - 270	°C	
Nozzle (IM)	230 - 270	°C	
Melt	240 - 270	°C	
Mold surface temperature	40 - 80	°C	
Cavities	40 - 80	°C	
Injection speed	Low - Medium	-	
Pressure	300 - 800	bar	
Dynamic pressure (hydraulic)	50 - 100	bar	
Circumferencial screw speed	5 - 15	m/s	

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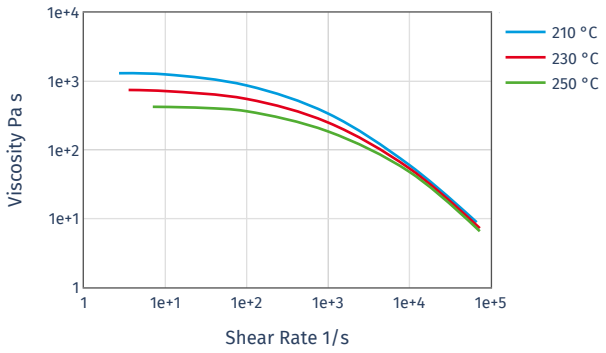
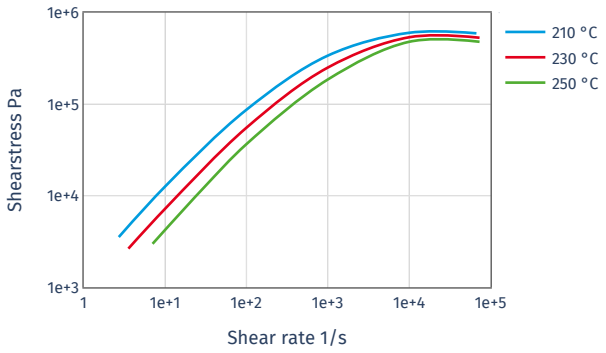
Diagrams

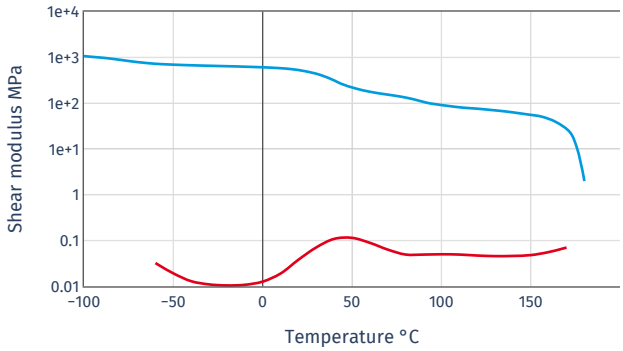
Viscosity-shear rate



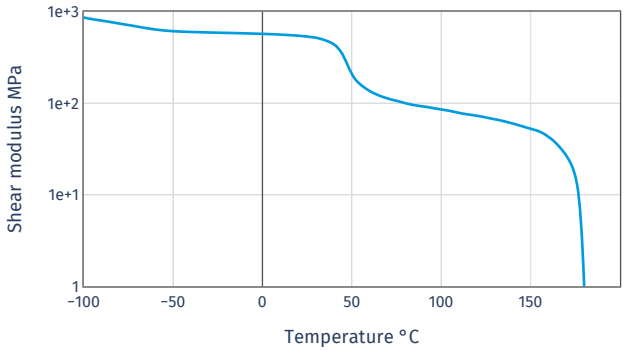
Shearstress-shear rate



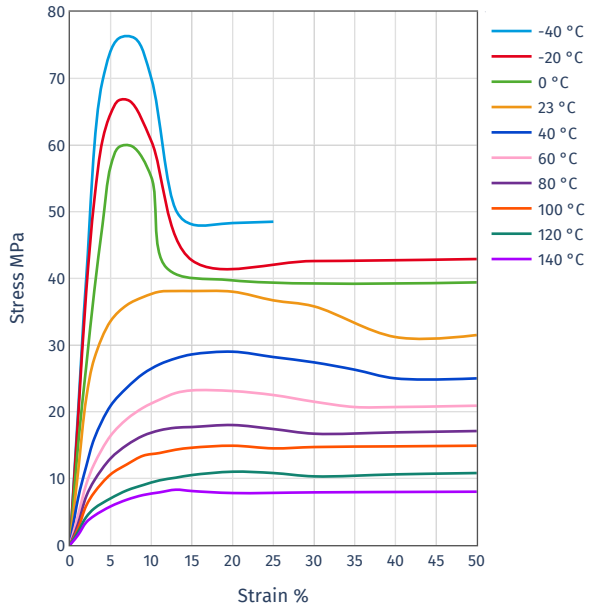
Dynamic shear modulus-temperature (cond)



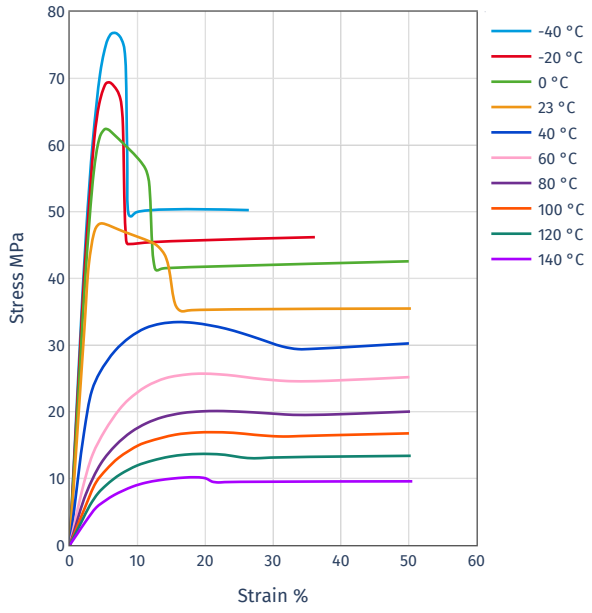
Dynamic shear modulus-temperature (dry)



Stress-strain (cond)



Stress-strain (dry)



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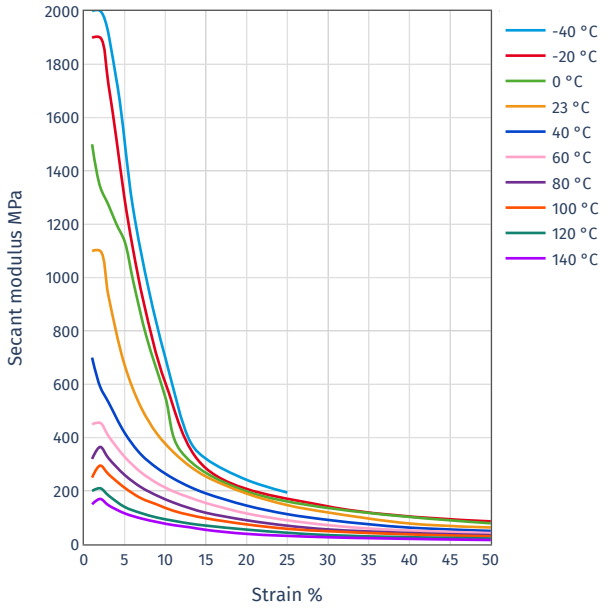
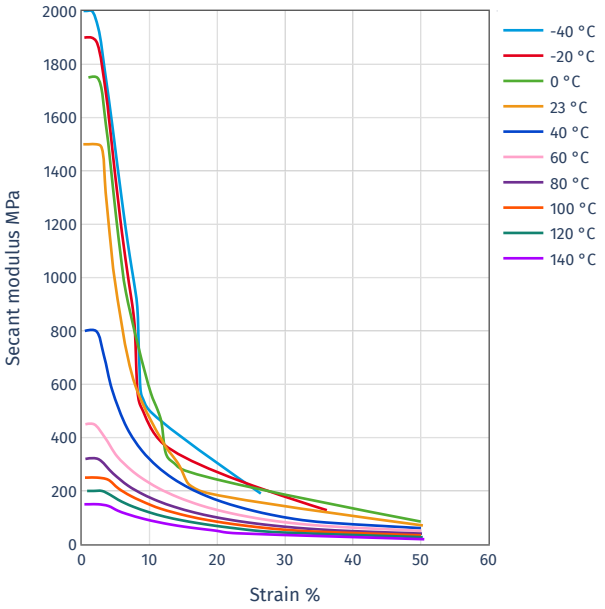
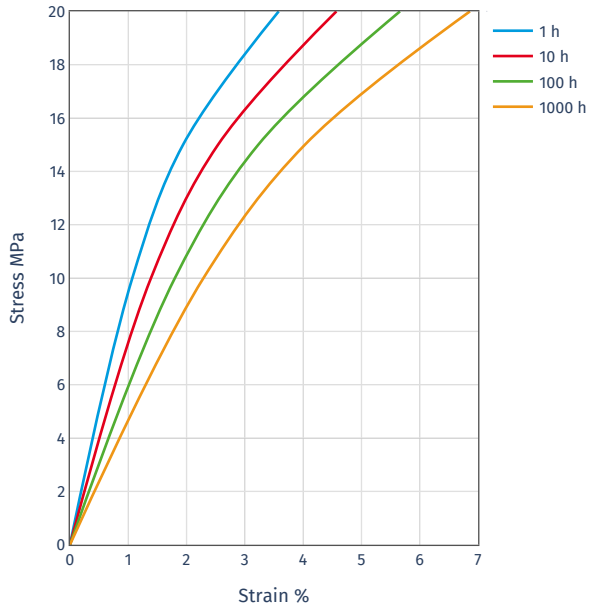
Secant modulus-strain (cond)



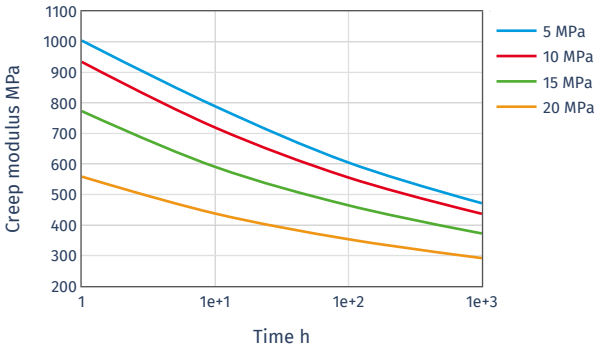
Secant modulus-strain (dry)



Stress-strain (isochronous) 23°C (dry)



Creep modulus-time 23°C (dry)



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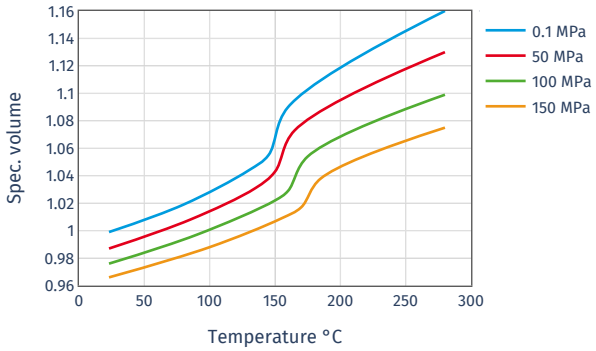
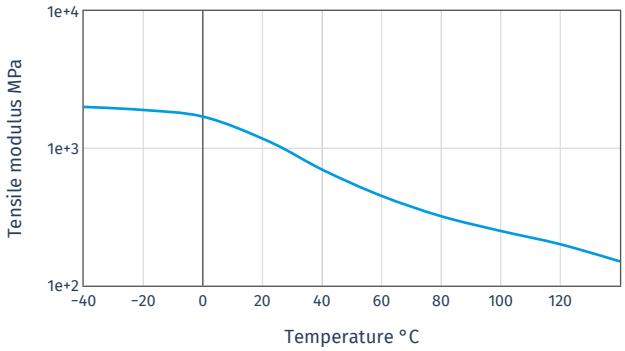
Spec. volume-temperature (pvT)



Tensile modulus-temperature (cond)



EMS-CHEMIE AG
Business Unit EMS-GRIVORY

Homepage: EMS-GRIVORY
eMail: welcome@emsgrivory.com

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Created: Aug 25, 2026