

Grilamid LKN-5H

PA12-GB50

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Product Texts

Product designation according to ISO 1874:

PA12, MHR, 18-020, GB50

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	2600 / 2300	MPa	ISO 527-1/-2
Yield stress	50 / 45	MPa	ISO 527-1/-2
Yield strain	5 / 7	%	ISO 527-1/-2
Nominal strain at break	20 / 25	%	ISO 527-1/-2
Stress at break	50 / 40	MPa	ISO 527-1/-2
Charpy impact strength (+23°C)	130 / 110	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	- / 65	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	5 / 5	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	4 / 4	kJ/m ²	ISO 179/1eA

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Shore D hardness (15s)	- / 75	-	ISO 868

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	178 / -	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	65 / -	°C	ISO 75-1/-2
Temp. of deflection under load (8.00 MPa)	40 / -	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	90 / -	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	90 / -	E-6/K	ISO 11359-1/-2
Burning Behav. at thickness h	HB / -	class	IEC 60695-11-10
Thickness tested	0.8 / -	mm	IEC 60695-11-10
Max. usage temperature (long term)	90 - 120	°C	ISO 2578
Max. usage temperature (short term)	150	°C	EMS

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	- / 1E11	Ohm*m	IEC 60093
Surface resistivity	- / 1E12	Ohm	IEC 60093
Electric strength	- / 35	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	0.8 / -	%	Sim. to ISO 62
Humidity absorption	0.4 / -	%	Sim. to ISO 62
Density	1440 / -	kg/m ³	ISO 1183

Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	0.8 / -	%	ISO 294-4, 2577
Molding shrinkage (normal)	0.9 / -	%	ISO 294-4, 2577

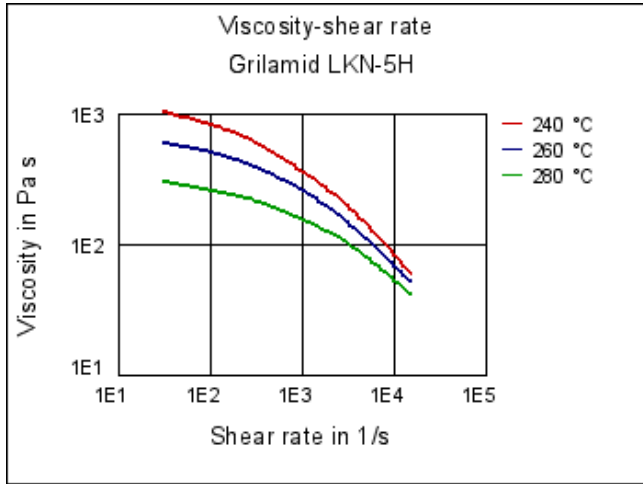
Diagrams

Grilamid LKN-5H

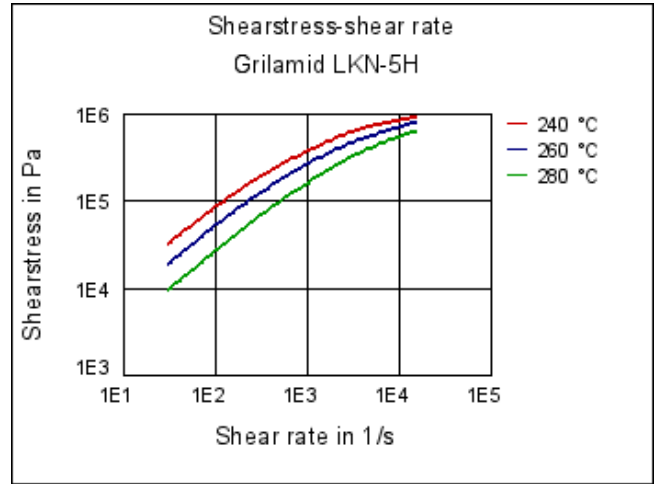
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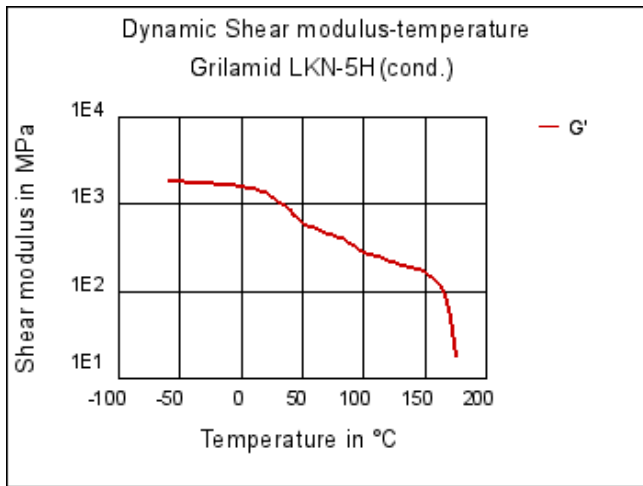
Viscosity-shear rate



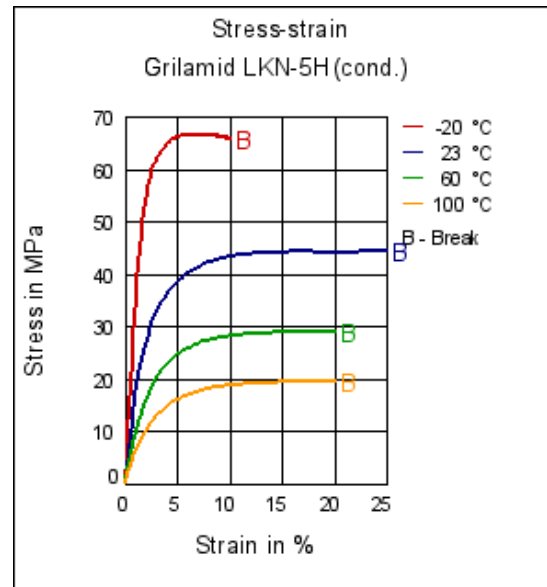
Shearstress-shear rate



Dynamic Shear modulus-temperature



Stress-strain

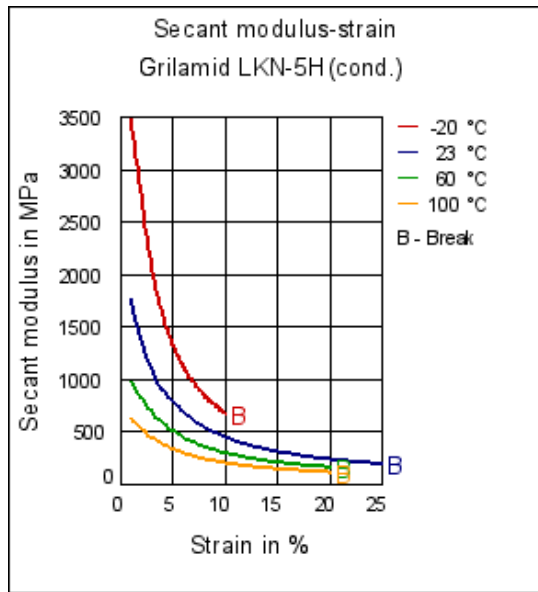


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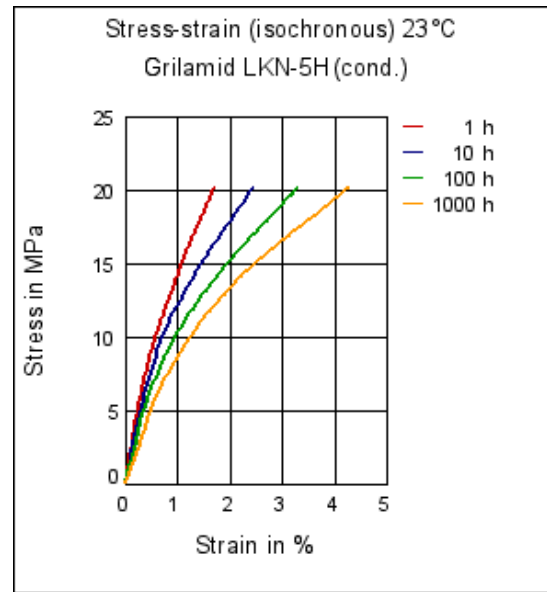
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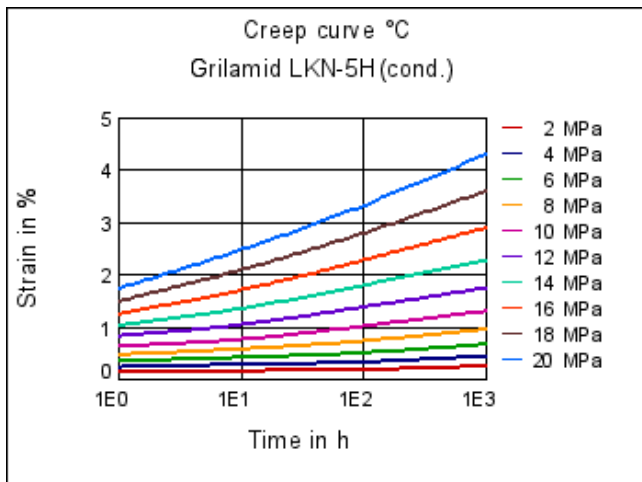
Secant modulus-strain



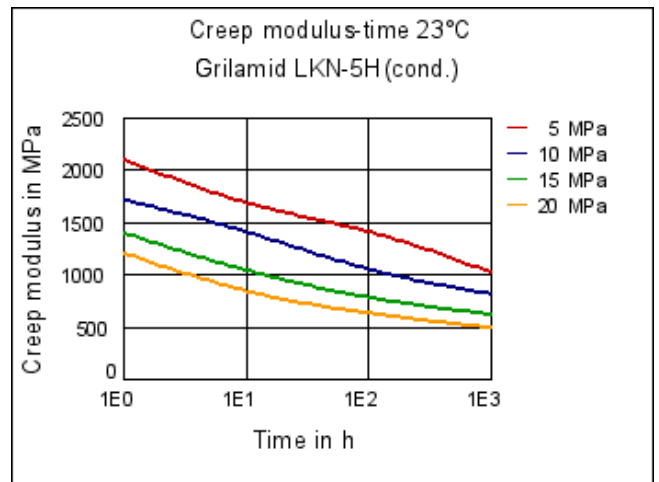
Stress-strain (isochronous) 23°C



Creep curve °C



Creep modulus-time 23°C

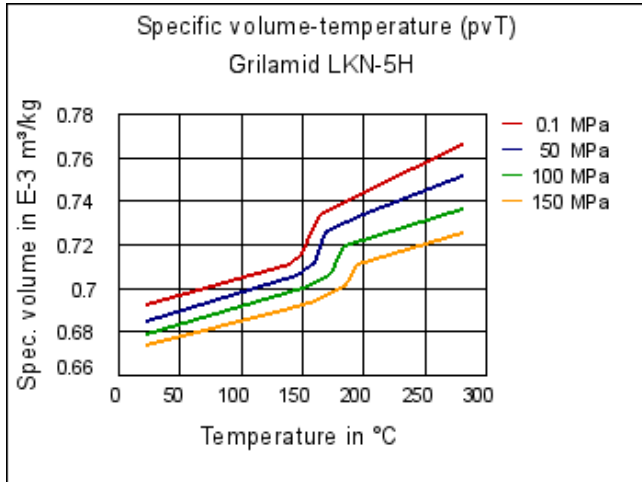


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Specific volume-temperature (pvT)



Characteristics

Processing

Injection Molding

Delivery form

Granules

Special Characteristics

Improved UV resistance (outdoor use)

Regional Availability

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

Automotive

Automotive electr. and electronics, lighting, Powertrain and Chassis

Electricals & Electronics

Electrical appliances, Electrical equipment, Connectors, Mobile phones and other portable devices

Industry & Consumer goods

Housewares, Mechanical Engineering, Medical devices, Sanitary, water and gas supply, Tools & Accessories

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




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-  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

-  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)