

Grilamid LV-3H PA12-GF30

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	6500 / 6000	MPa	ISO 527-1/-2
Charpy impact strength (+23°C)	90 / 80	kJ/m²	ISO 179/1eU
Charpy impact strength (-30°C)	90 / 80	kJ/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	19 / 20	kJ/m²	ISO 179/1eA
Charpy notched impact strength (-30°C)	15 / 15	kJ/m²	ISO 179/1eA

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)	160 / -	°C	ISO 75-1/-2
Temp. of deflection under load (8.00 MPa)	90 / -	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	20 / -	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	150 / -	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

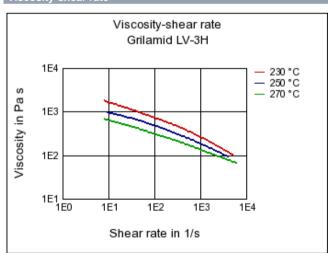
Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	- / 1E11	Ohm*m	IEC 60093
Surface resistivity	- / 1E12	Ohm	IEC 60093
Electric strength	- / 35	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	1.1 / -	%	Sim. to ISO 62
Humidity absorption	0.6 / -	%	Sim. to ISO 62
Density	1220 / -	kg/m³	ISO 1183

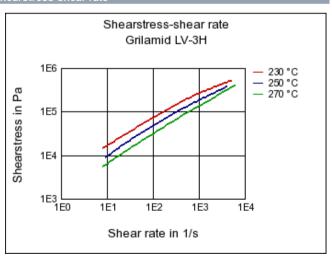
Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	0.1 / -	%	ISO 294-4, 2577
Molding shrinkage (normal)	0.8 / -	%	ISO 294-4, 2577

Diagrams

Viscosity-shear rate



Shearstress-shear rate

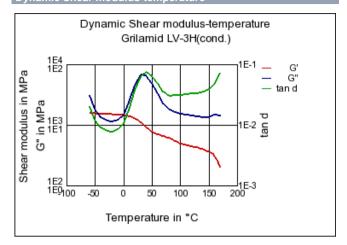


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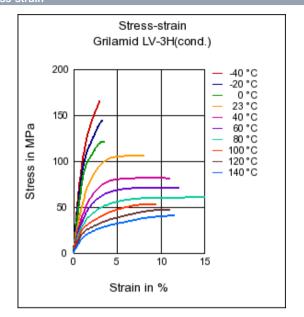
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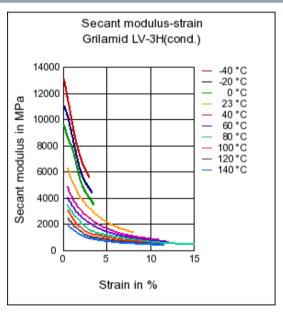
Dynamic Shear modulus-temperature



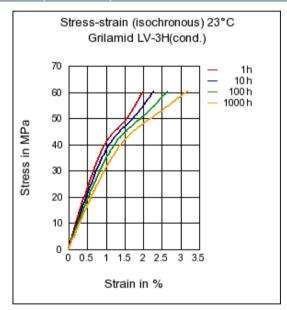
Stress-strain



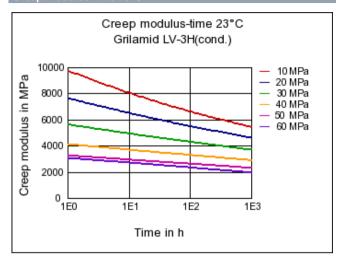
Secant modulus-strain



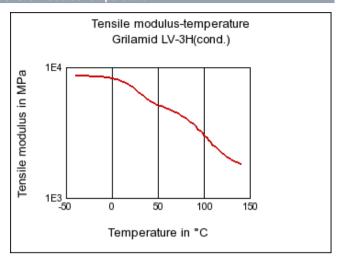
Stress-strain (isochronous) 23°C



Creep modulus-time 23°C



Tensile modulus-temperature



Characteristics

Processing

Injection Molding

Delivery form

Granules

Special Characteristics

High impact or impact modified

Regional Availability

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

Product Attributes

Hydrolysis resistant

Automotive

Air intake sytems, Compressed air systems, Hydraulic systems, Automotive electr. and electronics, lighting, Cooling and climate control, Fuel systems, Powertrain and Chassis

Electricals & Electronics

Electrical appliances, Connectors, Mobile phones and other portable devices

Industry & Consumer goods

Heating systems, Housewares, Hydraulics & Pneumatics, Mechanical Engineering, Medical devices, Power transmission, Sanitary, water and gas supply, Sports & Leisure, Tools & Accessories

Chemical Media Resistance

Acids

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Acetic Acid (5% by mass) (23°C)

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Citric Acid solution (10% by mass) (23°C)

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Lactic Acid (10% by mass) (23°C)

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Hydrochloric Acid (36% by mass) (23°C)

Nitric Acid (40% by mass) (23°C)

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Sulfuric Acid (38% by mass) (23°C)

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Sulfuric Acid (5% by mass) (23°C)

Chromic Acid solution (40% by mass) (23°C)

Bases

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Sodium Hydroxide solution (35% by mass) (23°C)

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- Sodium Hydroxide solution (1% by mass) (23°C)
- Ammonium Hydroxide solution (10% by mass) (23°C)

<u>Alc</u>ohols

- 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

U 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)
- U 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)
- Osodium Carbonate solution (20% by mass) (23°C)
- Sodium Carbonate solution (2% by mass) (23°C)
- U 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)

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- U 50% Oleic acid + 50% Olive Oil (23°C)
- Water (23°C)
- Deionized water (90°C)
- Phenol solution (5% by mass) (23°C)