

# **Grilamid LV-5H** PA12-GF50

# EMS-GRIVORY | a unit of EMS-CHEMIE AG

## Product Texts

Product designation according to ISO 1874:

PA12, MHR, 18-120, GF50

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	12000 / 11500	MPa	ISO 527-1/-2
Stress at break	155 / 135	MPa	ISO 527-1/-2
Strain at break	5/6	%	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

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Shore D hardness (15s)	- / 82	-	ISO 868
Ball indentation hardness	- / 155	MPa	ISO 2039-1

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)	165 / -	°C	ISO 75-1/-2
Temp. of deflection under load (8.00 MPa)	125 / -	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	15 / -	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	120 / -	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	1470 / -	kg/m <sup>3</sup> ISO 1183	
Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	0.1 / -	%	ISO 294-4, 2577

0.5/-

%

	ra	

Molding shrinkage (normal)

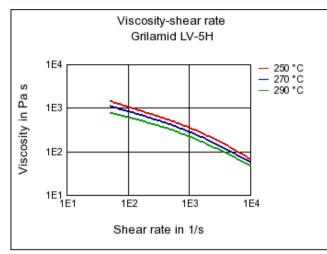
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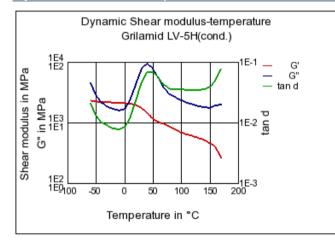
ISO 294-4, 2577

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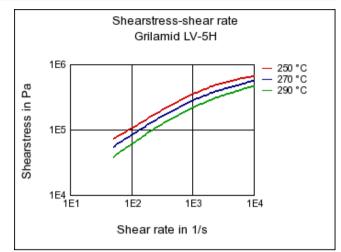
## Viscosity-shear rate



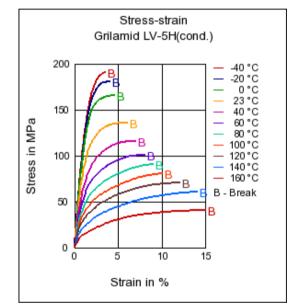
#### Dynamic Shear modulus-temperature



Shearstress-shear rate





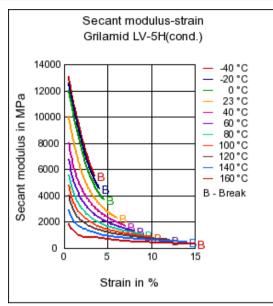


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#### Secant modulus-strain



# 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, Improved alcohol resistance

## 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

- etic Acid (5% by mass) (23°C)
- Citric Acid solution (10% by mass) (23°C)
- United texts and the set of the s
- Hydrochloric Acid (36% by mass) (23°C)
- Nitric Acid (40% by mass) (23°C)
- Sulfuric Acid (38% by mass) (23°C)
- USUIFURIC Acid (5% by mass) (23°C)
- Chromic Acid solution (40% by mass) (23°C)

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# Grilamid LV-5H PA12-GF50

#### Bases ٠ Sodium Hydroxide solution (35% by mass) (23°C) ٠ Sodium Hydroxide solution (1% by mass) (23°C) ٠ Ammonium Hydroxide solution (10% by mass) (23°C) Alcohols •• Isopropyl alcohol (23°C) • Methanol (23°C) •• Ethanol (23°C) Hydrocarbons ••• n-Hexane (23°C) ٠ Toluene (23°C) •• iso-Octane (23°C) Ketones ٠ Acetone (23°C) Ethers ٠ Diethyl ether (23°C) Mineral oils ••• SAE 10W40 multigrade motor oil (23°C) ٠ SAE 10W40 multigrade motor oil (130°C) ٠ SAE 80/90 hypoid-gear oil (130°C) ٠ Insulating Oil (23°C) Standard Fuels ٠ ISO 1817 Liquid 1 (60°C) $\odot$ 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) $\odot$ 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)

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- 00 DOT No. 4 Brake fluid (130°C)
- United Strain (50% by mass) in water (108°C)
- 9 1% nonylphenoxy-polyethyleneoxy ethanol in water (23°C)
- Uater (23°C)
- Ueionized water (90°C)
- Phenol solution (5% by mass) (23°C)

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