

Grilamid LV-3A H PA12-GF30

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Product Texts

Mechanical properties dry / cond Unit Test Standard Tensile Modulus 6500 / 5700 MPa ISO 527-1/-2 Stress at break 120 / 110 MPa ISO 527-1/-2 Charpy impact strength (+23°C) - / 80 kJ/m² ISO 179/1eU Charpy impact strength (-30°C) - / 80 kJ/m² ISO 179/1eU Charpy notched impact strength (-23°C) - / 25 kJ/m² ISO 179/1eU Charpy notched impact strength (-23°C) - / 15 kJ/m² ISO 179/1eU Charpy notched impact strength (-30°C) - / 15 kJ/m² ISO 179/1eA Mechanical properties (TPE) dry / cond Unit Test Standard Shore D hardness (15s) - / 120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Melting temperature (10°C/min) 180 / - °C ISO 175/1-2 Termp. of deflection under load (1.80 MPa) 165 / - °C ISO 257-1/-2 Temp. of deflection under load (8.00 MPa) 90 / - °C ISO 257-1/-2 Temp. of deflection un				
Stress at break 120 / 110 MPa ISO 527-1/-2 Strain at break 6 / 6 % ISO 527-1/-2 Charpy impact strength (+23°C) - / 80 kJ/m² ISO 179/1eU Charpy impact strength (-30°C) - / 80 kJ/m² ISO 179/1eU Charpy inpact strength (-23°C) - / 25 kJ/m² ISO 179/1eU Charpy notched impact strength (-30°C) - / 125 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) - / 15 kJ/m² ISO 179/1eA Mechanical properties (TPE) dry / cond Unit Test Standard Shore D hardness (15s) - / 80 - ISO 2039-1 Thermal properties dry / cond Unit Test Standard Meting temperature (10°C/min) 180 / - °C ISO 11357-1/-3 Temp. of deflection under load (1.80 MPa) 165 / - °C ISO 75-1/-2 Max. usage temperature (long term) 90 / - °C ISO 2578 Max. usage temperature (short term) 150 °C ISO 2578 Max. usage temperature (short term) <t< td=""><td>Mechanical properties</td><td>dry / cond</td><td>Unit</td><td>Test Standard</td></t<>	Mechanical properties	dry / cond	Unit	Test Standard
Strain at break 67.6 % ISO 527-1/-2 Charpy impact strength (+23°C) -7.80 kJ/m² ISO 179/1eU Charpy impact strength (+23°C) -7.80 kJ/m² ISO 179/1eU Charpy impact strength (+23°C) -7.80 kJ/m² ISO 179/1eU Charpy notched impact strength (+23°C) -7.15 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) -7.15 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) -7.15 kJ/m² ISO 179/1eA Mechanical properties (TPE) dry / cond Unit Test Standard Shore D hardness (15s) -7.80 - ISO 868 Ball indentation hardness -7.120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Melting temperature (10°C/min) 180 /- °C ISO 1357-1/-3 Temp. of deflection under load (1.80 MPa) 90 /- °C ISO 2578 Max. usage temperature (long term) 90 - 120 °C ISO 2578 Max. usage temperature (short term) <	Tensile Modulus	6500 / 5700	MPa	ISO 527-1/-2
Charpy impact strength (+23°C) - / 80 kJ/m² ISO 179/1eU Charpy impact strength (+30°C) - / 80 kJ/m² ISO 179/1eU Charpy notched impact strength (+23°C) - / 25 kJ/m² ISO 179/1eA Charpy notched impact strength (+23°C) - / 125 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) - / 15 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) - / 15 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) - / 125 kJ/m² ISO 179/1eA Mechanical properties (TPE) dry / cond Unit Test Standard Shore D hardness (15s) - / 180 - ISO 868 Ball indentation hardness - / 120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Melting temperature (10°C/min) 180 / - °C ISO 75-1/-2 ISO 75-1/-2 Temp. of deflection under load (8.00 MPa) 90 / - °C ISO 75-1/-2 IsO 75-1/-2 Max. usage temperature (short term) 150 °C ISO 2578	Stress at break	120 / 110	MPa	ISO 527-1/-2
Charpy impact strength (-30°C) - / 80 kJ/m² ISO 179/1eU Charpy notched impact strength (+23°C) - / 25 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) - / 15 kJ/m² ISO 179/1eA Mechanical properties (TPE) dry / cond Unit Test Standard Shore D hardness (15s) - / 80 - ISO 868 Ball indentation hardness - / 120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Melting temperature (10°C/min) 180 /- °C ISO 1357-1/-3 Temp. of deflection under load (1.80 MPa) 165 /- °C ISO 75-1/-2 Temp. of deflection under load (8.00 MPa) 90 /- °C ISO 75-1/-2 Max. usage temperature (long term) 90 /- °C ISO 2578 Max. usage temperature (short term) 150 °C ISO 6093 Electrical properties dry / cond Unit Test Standard Volume resistivity - / 1812 Ohm IEC 60093 Electric strength - / 32 <td>Strain at break</td> <td>6/6</td> <td>%</td> <td>ISO 527-1/-2</td>	Strain at break	6/6	%	ISO 527-1/-2
Charpy notched impact strength (+23°C) - / 25 kJ/m² ISO 179/1eA Charpy notched impact strength (-30°C) - / 15 kJ/m² ISO 179/1eA Mechanical properties (TPE) dry / cond Unit Test Standard Shore D hardness (15s) - / 80 - ISO 868 Ball indentation hardness - / 120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Mething temperature (10°C/min) 180 / - °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) 90 / - °C ISO 2578 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 - / 32 kV/mm IEC 60093 Electric strength - / 32 kV/mm IEC 60112 Other properties dry / co	Charpy impact strength (+23°C)	- / 80	kJ/m²	ISO 179/1eU
Charpy notched impact strength (-30°C) -/15 kJ/m² ISO 179/1eA Machanical properties (TPE) dry / cond Unit Test Standard Shore D hardness (15s) -/80 - ISO 868 Ball indentation hardness -/120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Melting temperature (10°C/min) 180 / - °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) 90 / - °C ISO 2578 Max. usage temperature (long term) 90 - 120 °C ISO 2578 Max. usage temperature (short term) 150 °C EMS Volume resistivity Surface resistivity -/1E11 Ohm* IEC 60093 Surface resistivity -/32 kV/mm IEC 60112 Other properties dry / cond Unit Test Standard Volume resistivity -/1E12 Ohm IEC 60093 Electric strength -/32 kV/mm I	Charpy impact strength (-30°C)	- / 80	kJ/m²	ISO 179/1eU
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Shore D hardness (15s) -/80 - ISO 868 Ball indentation hardness -/120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Melting temperature (10°C/min) 180 / - °C ISO 1357-1/-3 Temp. of deflection under load (1.80 MPa) 165 / - °C ISO 75-1/-2 Temp. of deflection under load (8.00 MPa) 90 / - °C ISO 2578 Max. usage temperature (long term) 90 - 120 °C ISO 2578 Max. usage temperature (short term) 150 °C ESO 2578 Max. usage temperature (short term) 150 °C EMS Electrical properties dry / cond Unit Test Standard Volume resistivity - / 1E11 Ohm IEC 60093 Surface resistivity - / 1812 Ohm IEC 60093 Electric strength - / 32 kV/mm IEC 60243-1 Comparative tracking index - / 575 - IEC 60112 Other properties dry / cond Unit Test Standard	Charpy notched impact strength (-30°C)	- / 15	kJ/m²	ISO 179/1eA
Shore D hardness (15s) -/80 - ISO 868 Ball indentation hardness -/120 MPa ISO 2039-1 Thermal properties dry / cond Unit Test Standard Melting temperature (10°C/min) 180 / - °C ISO 1357-1/-3 Temp. of deflection under load (1.80 MPa) 165 / - °C ISO 75-1/-2 Temp. of deflection under load (8.00 MPa) 90 / - °C ISO 2578 Max. usage temperature (long term) 90 - 120 °C ISO 2578 Max. usage temperature (short term) 150 °C ESO 2578 Max. usage temperature (short term) 150 °C EMS Electrical properties dry / cond Unit Test Standard Volume resistivity - / 1E11 Ohm IEC 60093 Surface resistivity - / 1812 Ohm IEC 60093 Electric strength - / 32 kV/mm IEC 60243-1 Comparative tracking index - / 575 - IEC 60112 Other properties dry / cond Unit Test Standard				
Ball indentation hardness-/120MPaISO 2039-1Thermal propertiesMelting temperature (10°C/min)180 /-°CISO 11357-1/-3Temp. of deflection under load (1.80 MPa)165 /-°CISO 75-1/-2Temp. of deflection under load (8.00 MPa)90 /-°CISO 75-1/-2Temp. of deflection under load (8.00 MPa)90 /-°CISO 75-1/-2Max. usage temperature (long term)90 - 120°CISO 2578Max. usage temperature (short term)150°CEMSElectrical propertiesdry / condUnitTest StandardVolume resistivity-/1E11Ohm*mIEC 60093Surface resistivity-/1E12OhmIEC 60093Electric strength-/32kV/mmIEC 60243-1Comparative tracking index-/575-IEC 60112Other propertiesdry / condUnitTest StandardWater absorption1.4/-%Sim. to ISO 62Humidity absorption0.6/-%Sim. to ISO 62	Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Thermal propertiesdry / condUnitTest StandardMelting temperature (10°C/min)180 / -°CISO 11357-1/-3Temp. of deflection under load (1.80 MPa)165 / -°CISO 75-1/-2Temp. of deflection under load (8.00 MPa)90 / -°CISO 75-1/-2Max. usage temperature (long term)90 - 120°CISO 2578Max. usage temperature (short term)150°CEMSElectrical propertiesVolume resistivity- / 1E11Ohm*mIEC 60093Surface resistivity- / 1E12OhmIEC 60093Electric strength- / 32kV/mmIEC 60243-1Comparative tracking index- / 575-IEC 60112Other propertiesdry / condUnitTest StandardWater absorption1.4 / -%Sim. to ISO 62Humidity absorption0.6 / -%Sim. to ISO 62	Shore D hardness (15s)	- / 80	-	ISO 868
Melting temperature (10°C/min) 180 / - °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) 90 / - °C ISO 75-1/-2 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 -/32 kV/mm IEC 60243-1 Comparative tracking index -/575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4/- % Sim. to ISO 62 Humidity absorption 0.6 /- % Sim. to ISO 62	Ball indentation hardness	- / 120	MPa	ISO 2039-1
Melting temperature (10°C/min) 180 / - °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) 90 / - °C ISO 75-1/-2 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 -/32 kV/mm IEC 60243-1 Comparative tracking index -/575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4/- % Sim. to ISO 62 Humidity absorption 0.6 /- % Sim. to ISO 62				
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Temp. of deflection under load (8.00 MPa) 90 / - °C ISO 75-1/-2 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 - / 32 kV/mm IEC 60243-1 Comparative tracking index - / 575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4 / - % Sim. to ISO 62	Melting temperature (10°C/min)	180 / -	°C	ISO 11357-1/-3
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 -/32 kV/mm IEC 60243-1 Comparative tracking index -/575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62	Temp. of deflection under load (1.80 MPa)	165 / -	°C	ISO 75-1/-2
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Electrical properties dry / cond Unit Test Standard Volume resistivity - / 1E11 Ohm*m IEC 60093 Surface resistivity - / 1E12 Ohm IEC 60093 Electric strength - / 32 kV/mm IEC 60243-1 Comparative tracking index - / 575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62	Max. usage temperature (long term)	90 - 120		ISO 2578
Volume resistivity - / 1E11 Ohm*m IEC 60093 Surface resistivity - / 1E12 Ohm IEC 60093 Electric strength - / 32 kV/mm IEC 60243-1 Comparative tracking index - / 575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62	Max. usage temperature (short term)	150	°C	EMS
Volume resistivity - / 1E11 Ohm*m IEC 60093 Surface resistivity - / 1E12 Ohm IEC 60093 Electric strength - / 32 kV/mm IEC 60243-1 Comparative tracking index - / 575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62				
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Electric strength - / 32 kV/mm IEC 60243-1 Comparative tracking index - / 575 - IEC 60112 Other properties dry / cond Unit Test Standard Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62	Volume resistivity	-/1E11	Ohm*m	IEC 60093
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Other properties dry / cond Unit Test Standard Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62	Electric strength	- / 32	kV/mm	IEC 60243-1
Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62	Comparative tracking index	- / 575	-	IEC 60112
Water absorption 1.4 / - % Sim. to ISO 62 Humidity absorption 0.6 / - % Sim. to ISO 62				
Humidity absorption0.6 / -%Sim. to ISO 62				
		-		
Density 1220 / - kg/m³ ISO 1183	Humidity absorption			
	Density	1220 / -	kg/m³	ISO 1183

Diagrams

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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, 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

Acids

- etic 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)

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Product Attributes

Hydrolysis resistant

Automotive

Cooling and climate control, Fuel systems

Industry & Consumer goods

Heating systems

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

Alcohols

- Usopropyl alcohol (23°C)
- UEthanol (23°C)

Hydrocarbons

- 🥴 n-Hexane (23°C)
- U Toluene (23°C)
- 🥴 iso-Octane (23°C)

Ketones

🙂 Acetone (23°C)

Ethers

Uiethyl ether (23°C)

Mineral oils

- USAE 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)
- Uiesel fuel (pref. ISO 1817 Liquid F) (23°C)
- Uiesel fuel (pref. ISO 1817 Liquid F) (90°C)
- Uiesel 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)
- Unc Chloride solution (50% by mass) (23°C)

Other

- Ethyl Acetate (23°C)
- UOT 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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9 50% Oleic acid + 50% Olive Oil (23°C)

Uater (23°C)

- 0°C) Deionized water
- Phenol solution (5% by mass) (23°C)

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