# 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 |

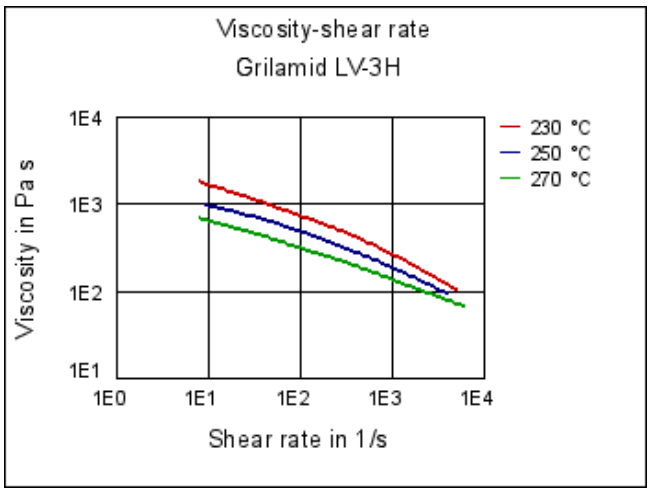
| Electrical properties | dry / cond | Unit | Test Standard |
|---|---|---|---|
| Volume resistivity | **- / 1E11** | Ohm*m | IEC 60093 |
| Surface resistivity | **- / 1E12** | Ohm | IEC 60093 |
| Electric strength | **- / 35** | kV/mm | IEC 60243-1 |
| Comparative tracking index | **- / 600** | - |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

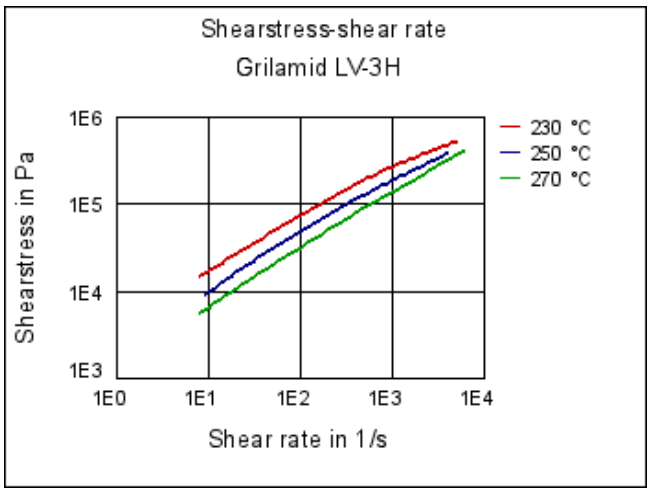
| Rheo/Phys properties | dry / cond | Unit | Test Standard |
|---|---|---|---|
| Molding shrinkage (parallel) | **0.1 / -** | % | ISO 294-4, 2577 |
| Molding shrinkage (normal) | **0.8 / -** | % | ISO 294-4, 2577 |

## Diagrams

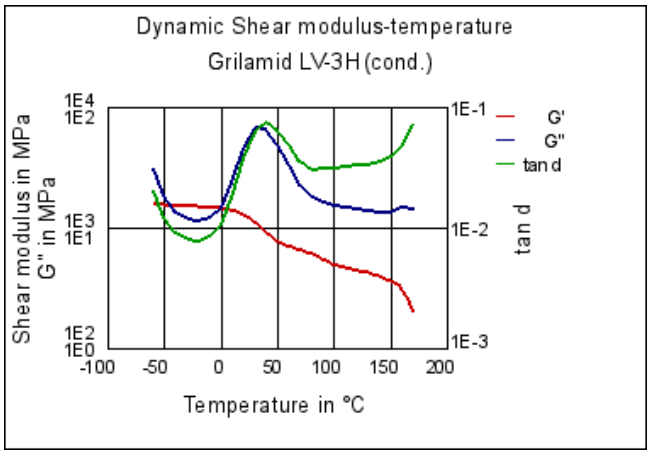
### Viscosity-shear rate



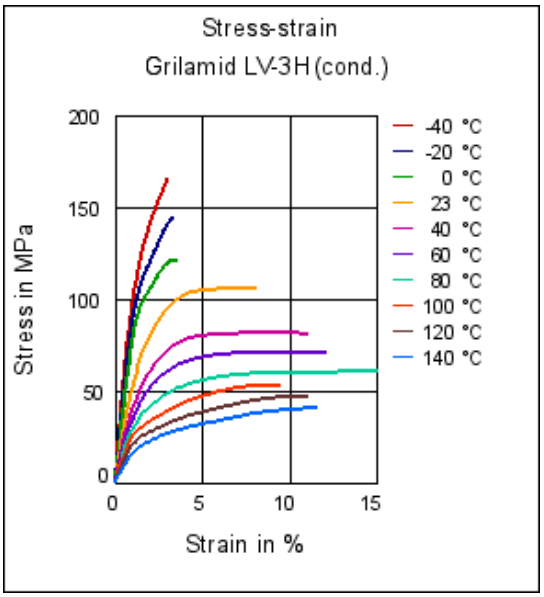

### Shearstress-shear rate



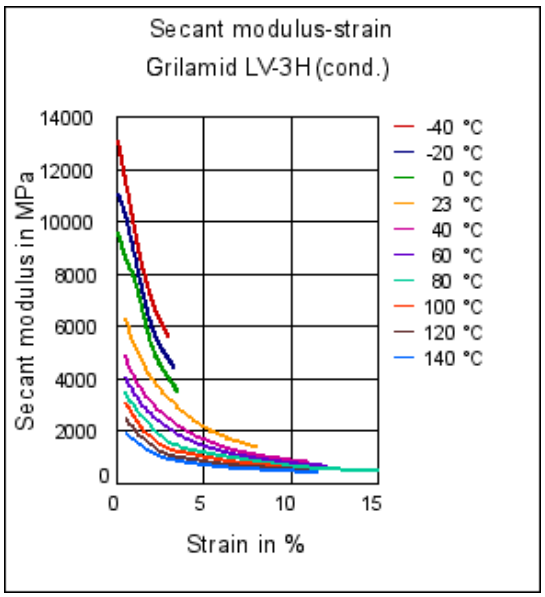
## Dynamic Shear modulus-temperature



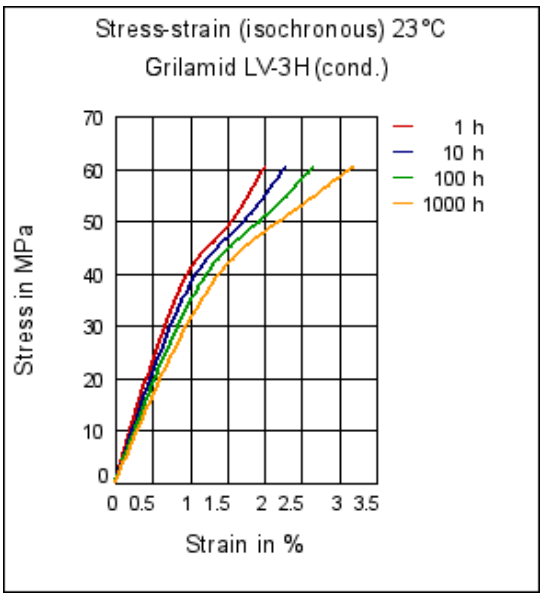

## Stress-strain



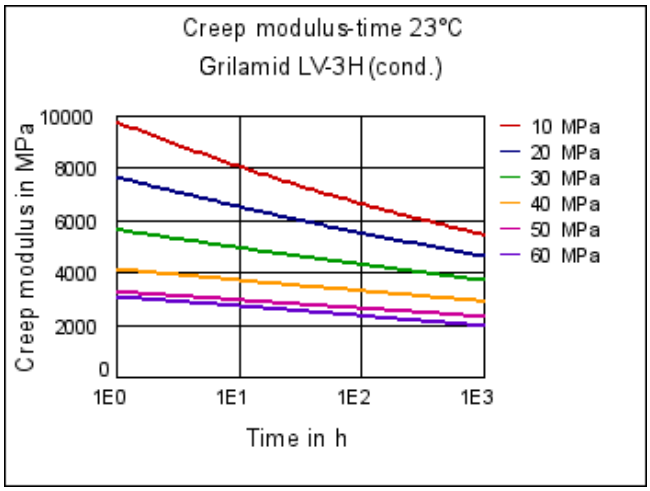

## Secant modulus-strain



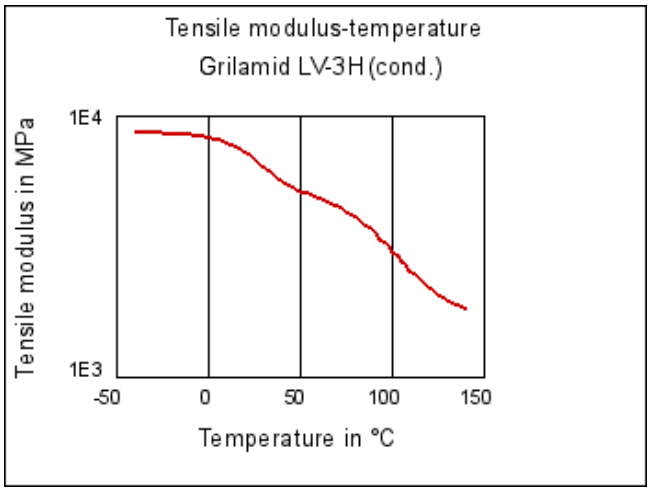

## Stress-strain (isochronous) 23°C



## 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

- 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

- 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)