

Grilamid TR 55 LY
PA12/MACMI

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Product Texts

Product designation according to ISO 1874:

PA 12/MACMI + PA 12, GHLT, 14-020

| Mechanical properties | dry / cond | Unit | Test Standard |
|--|-------------------|-------------------|---------------|
| Tensile Modulus | - / 1900 | MPa | ISO 527-1/-2 |
| Yield stress | - / 70 | MPa | ISO 527-1/-2 |
| Yield strain | - / 6 | % | ISO 527-1/-2 |
| Nominal strain at break | - / >50 | % | ISO 527-1/-2 |
| Stress at break | - / 40 | MPa | ISO 527-1/-2 |
| Charpy impact strength (+23°C) | - / N | kJ/m ² | ISO 179/1eU |
| Charpy impact strength (-30°C) | - / N | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength (+23°C) | - / 9 | kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength (-30°C) | - / 8 | kJ/m ² | ISO 179/1eA |

| Mechanical properties (TPE) | dry / cond | Unit | Test Standard |
|-----------------------------|----------------|------|---------------|
| Ball indentation hardness | - / 110 | MPa | ISO 2039-1 |

| Thermal properties | dry / cond | Unit | Test Standard |
|--|----------------|-------|-----------------|
| Glass transition temperature (10°C/min) | 110 / - | °C | ISO 11357-1/-2 |
| Temp. of deflection under load (1.80 MPa) | 80 / - | °C | ISO 75-1/-2 |
| Temp. of deflection under load (0.45 MPa) | 90 / - | °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) | 80 | °C | ISO 2578 |
| Max. usage temperature (short term) | 95 | °C | EMS |

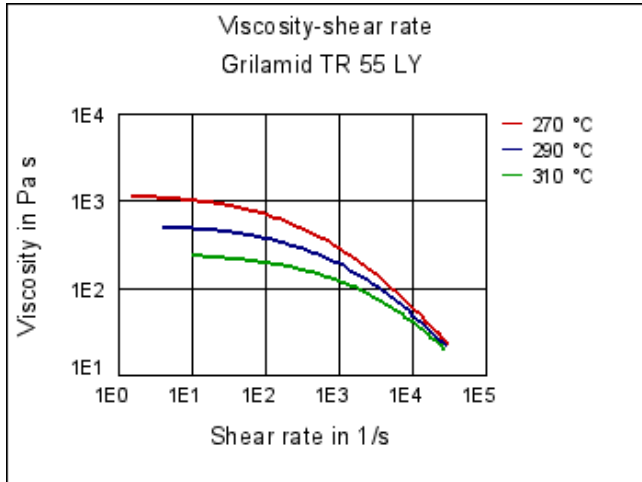
| Electrical properties | dry / cond | Unit | Test Standard |
|----------------------------|-----------------|-------|---------------|
| Volume resistivity | - / 1E11 | Ohm*m | IEC 60093 |
| Surface resistivity | - / 1E12 | Ohm | IEC 60093 |
| Electric strength | - / 32 | kV/mm | IEC 60243-1 |
| Comparative tracking index | - / 600 | - | IEC 60112 |

| Other properties | dry / cond | Unit | Test Standard |
|---------------------|-----------------|-------------------|----------------|
| Water absorption | 2.5 / - | % | Sim. to ISO 62 |
| Humidity absorption | 1 / - | % | Sim. to ISO 62 |
| Density | 1040 / - | kg/m ³ | ISO 1183 |

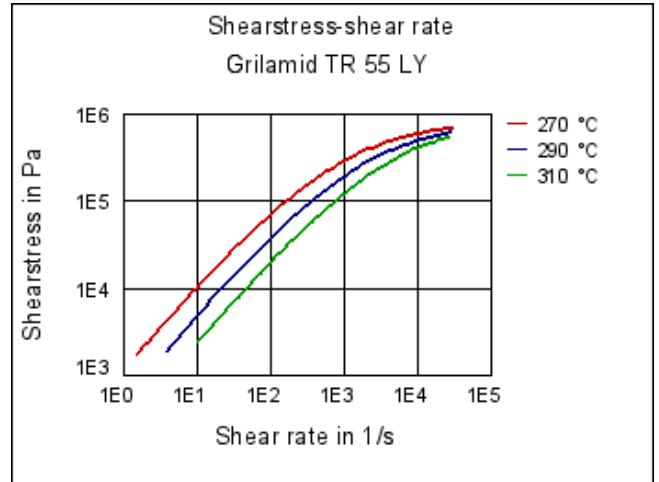
| Rheo/Phys properties | dry / cond | Unit | Test Standard |
|------------------------------|----------------|------|-----------------|
| Molding shrinkage (parallel) | 0.3 / - | % | ISO 294-4, 2577 |
| Molding shrinkage (normal) | 0.5 / - | % | ISO 294-4, 2577 |

Diagrams

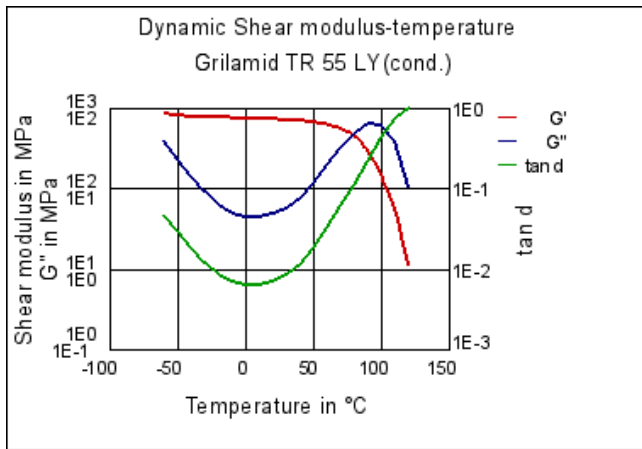
Viscosity-shear rate



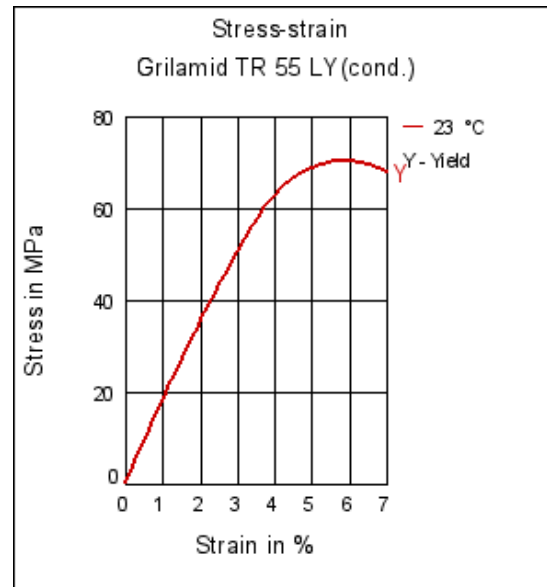
Shearstress-shear rate



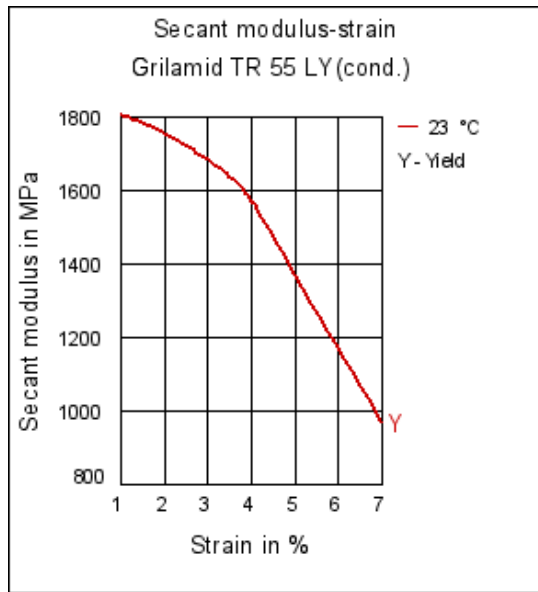
Dynamic Shear modulus-temperature



Stress-strain



Secant modulus-strain



Characteristics

Processing

Injection Molding

Delivery form

Granules

Special Characteristics

Transparent

Regional Availability

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

Product Attributes

Improved alcohol resistance

Automotive

Cooling and climate control, Fuel systems, Powertrain and Chassis

Industry & Consumer goods

Housewares, Mechanical Engineering, Sports & Leisure, Tools & Accessories

Optics

Optical components, Sunglasses, Spectacle frames

Burning Behaviour

UL V2

Potable Water Contact

NSF 61

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)

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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)

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-  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)
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