

Grilamid TR 55 LX

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	2000 / 1900	MPa	ISO 527-1/-2
Yield stress	75 / 70	MPa	ISO 527-1/-2
Yield strain	7 / 6	%	ISO 527-1/-2
Nominal strain at break	>50 / >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

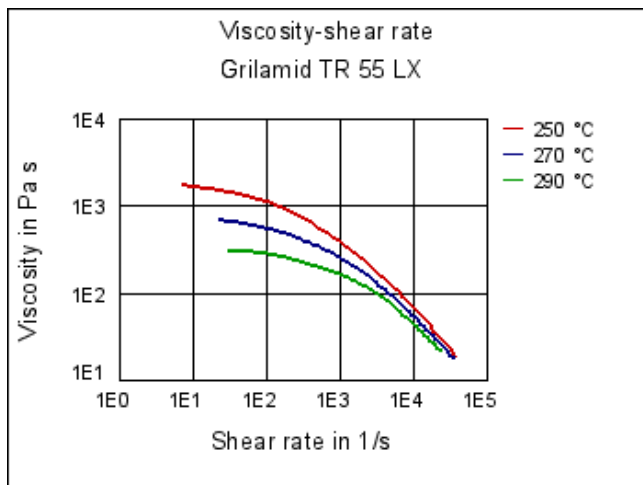
Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	- / 1E11	Ohm*m	IEC 60093
Surface resistivity	- / 1E12	Ohm	IEC 60093
Electric strength	- / 32	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

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

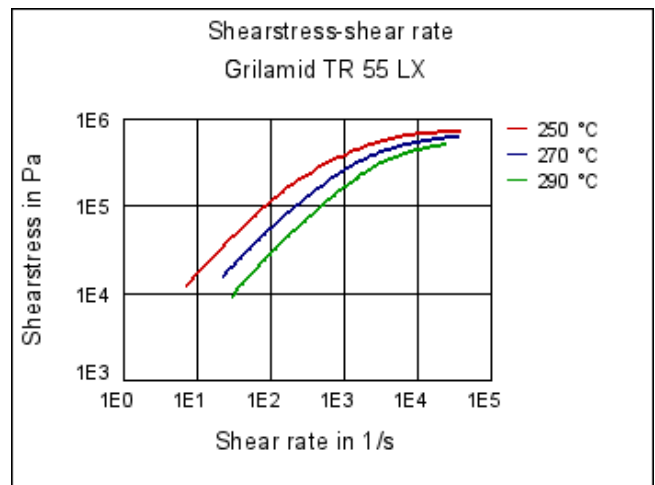
Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	0.5 / -	%	ISO 294-4, 2577
Molding shrinkage (normal)	0.6 / -	%	ISO 294-4, 2577

Diagrams

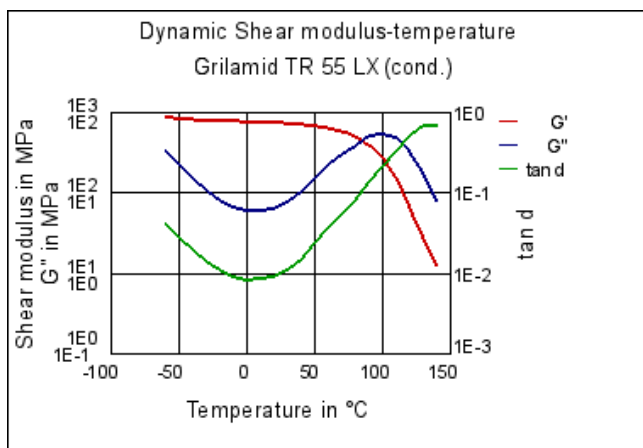
Viscosity-shear rate



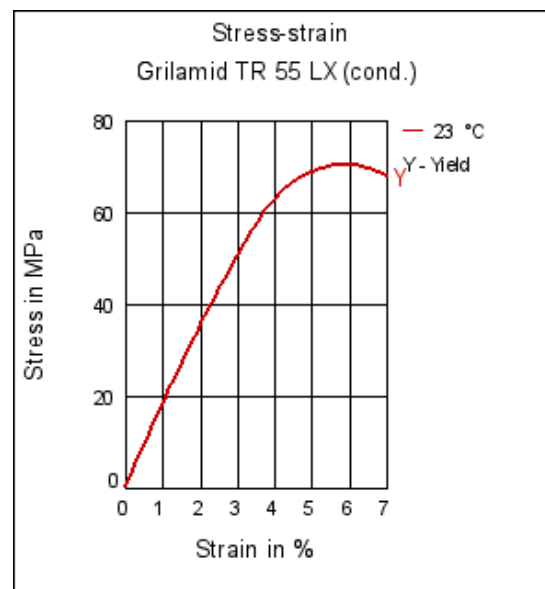
Shearstress-shear rate



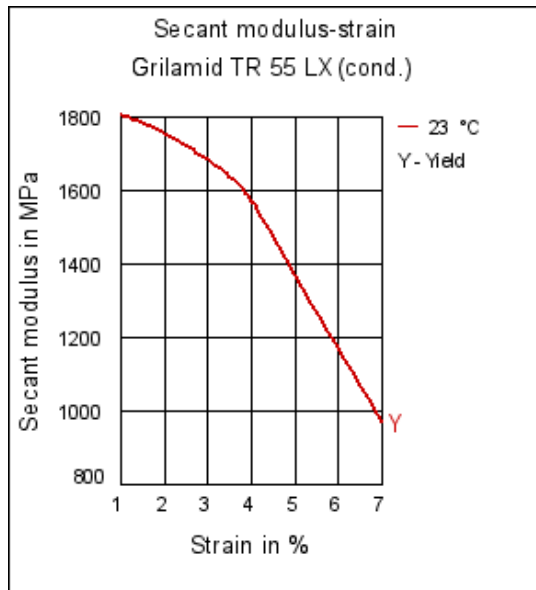
Dynamic Shear modulus-temperature



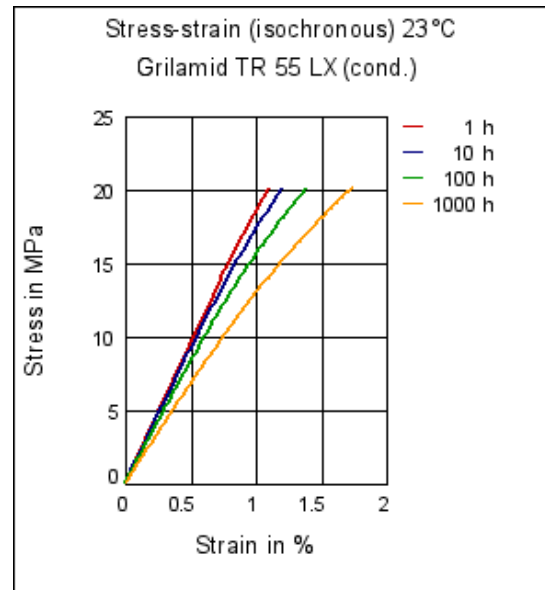
Stress-strain



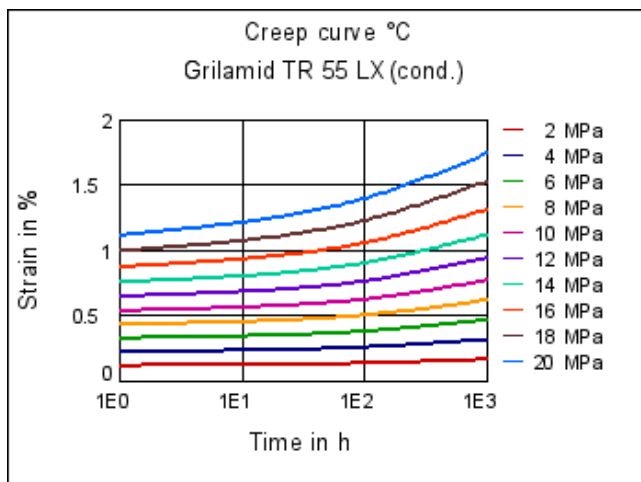
Secant modulus-strain



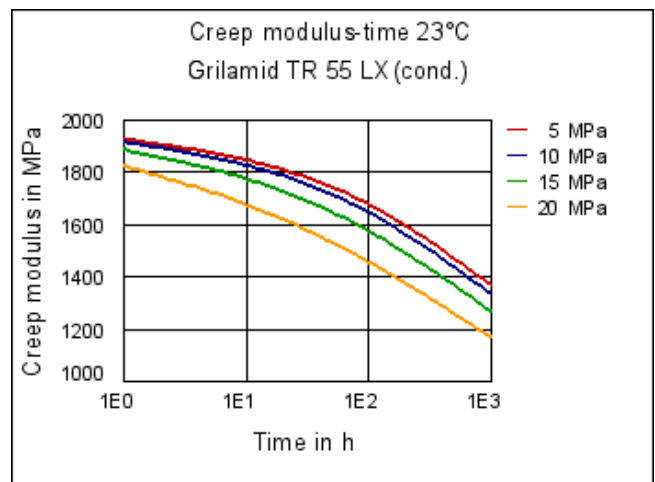
Stress-strain (isochronous) 23°C



Creep curve °C



Creep modulus-time 23°C



Characteristics

Processing

Injection Molding

Delivery form

Granules

Special Characteristics

Transparent

Regional Availability

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

Electricals & Electronics

Electrical appliances, Electrical equipment, Cables & Tubes, Energy distribution, Lighting, Mobile phones and other portable devices

Industry & Consumer goods

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

Optics

Optical components, Sunglasses, Spectacle frames

Product Attributes

Improved alcohol resistance

Burning Behaviour

UL V2

Automotive

Automotive electr. and electronics, lighting, Cooling and climate control, Fuel systems, Powertrain and Chassis , Interior

Biocompatibility









ISO 10993

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)




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

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The values are intended to serve as an aid in preselecting materials and for an overview of the EMS-GRIVORY product range. The information contained in this publication is based on our present knowledge and experience. The given figures and data are guidance values and do not represent binding material specifications. No warranties of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are given regarding products, design, data and information. The customer is not released from his obligation to investigate the products fitness and the suitability for the intended application, compliance with legal requirements and intellectual property rights. We reserve the right to change the information at any time and without prior notice. The information in this publication is not to be considered a contractual obligation and any liability whatsoever is expressly declined.

For further questions about our products please contact our experts.

- ☹ 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)