

Grilon BT 40 Z

PA6

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Product Texts

Product designation according to ISO 1874:

PA6-HI+PA12/X, MH, 18-020 N

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	2400 / 1600	MPa	ISO 527-1/-2
Yield stress	70 / 50	MPa	ISO 527-1/-2
Yield strain	6 / 7	%	ISO 527-1/-2
Nominal strain at break	15 / >50	%	ISO 527-1/-2
Stress at break	50 / 45	MPa	ISO 527-1/-2
Charpy impact strength (+23°C)	N / N	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	N / N	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	15 / 20	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	10 / 12	kJ/m ²	ISO 179/1eA

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Ball indentation hardness	120 / 80	MPa	ISO 2039-1

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	220 / -	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	105 / -	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	135 / -	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	70 / -	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	100 / -	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 - 100	°C	ISO 2578
Max. usage temperature (short term)	130	°C	EMS

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	1E12 / 1E11	Ohm*m	IEC 60093
Surface resistivity	- / 1E12	Ohm	IEC 60093
Electric strength	37 / 34	kV/mm	IEC 60243-1
Comparative tracking index	- / 550	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	6 / -	%	Sim. to ISO 62
Humidity absorption	2.5 / -	%	Sim. to ISO 62
Density	1060 / -	kg/m ³	ISO 1183

Rheo/Phys properties	dry / cond	Unit	Test Standard
Molding shrinkage (parallel)	0.7 / -	%	ISO 294-4, 2577
Molding shrinkage (normal)	0.9 / -	%	ISO 294-4, 2577

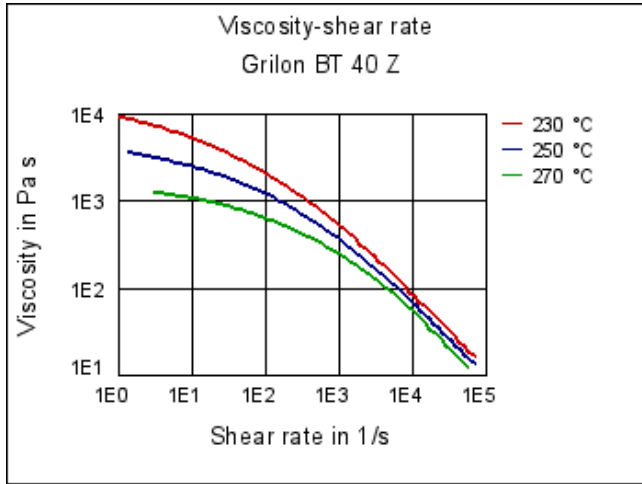
Diagrams

Grilon BT 40 Z

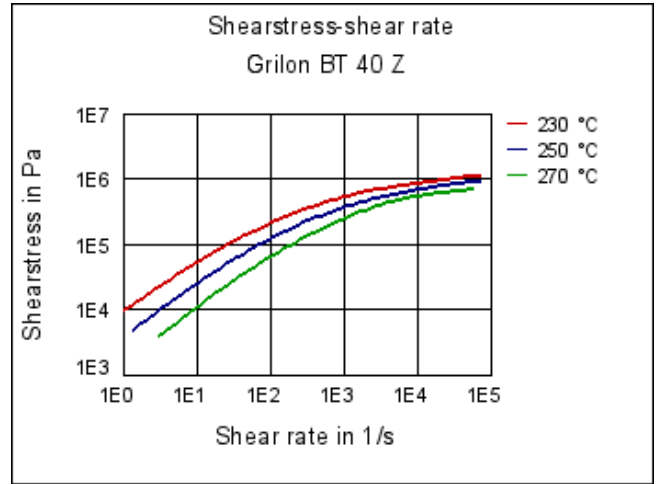
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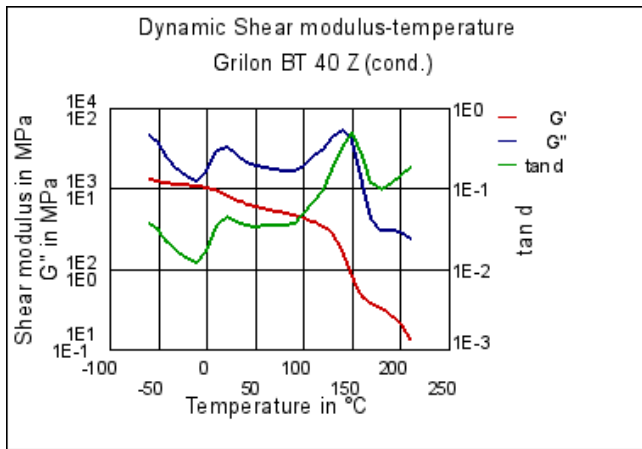
Viscosity-shear rate



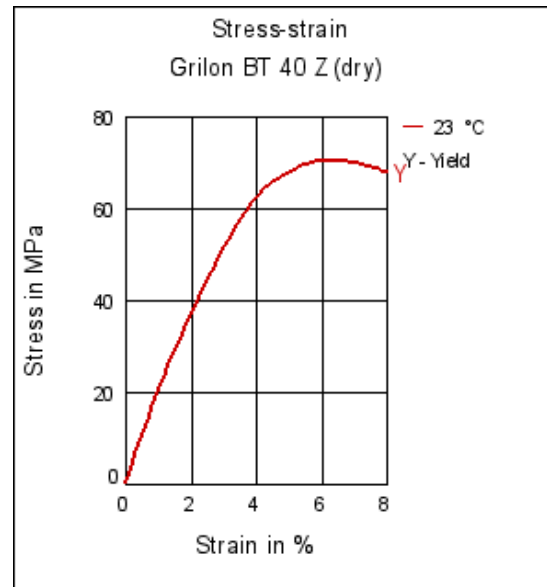
Shearstress-shear rate



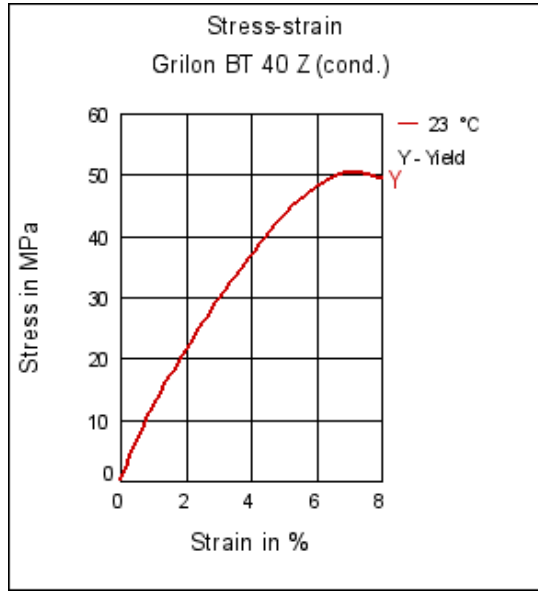
Dynamic Shear modulus-temperature



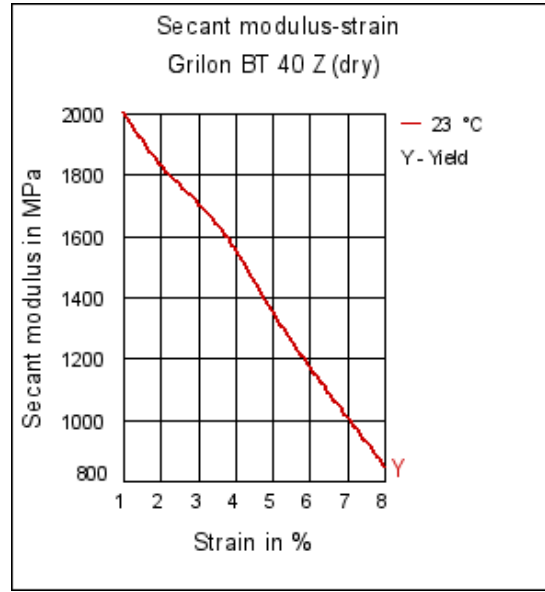
Stress-strain



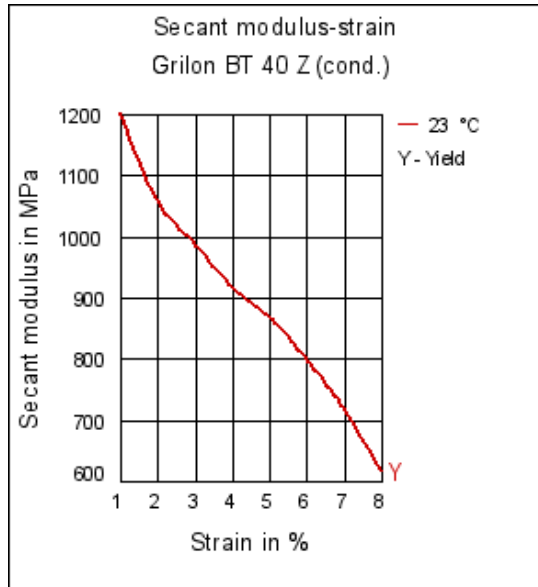
Stress-strain



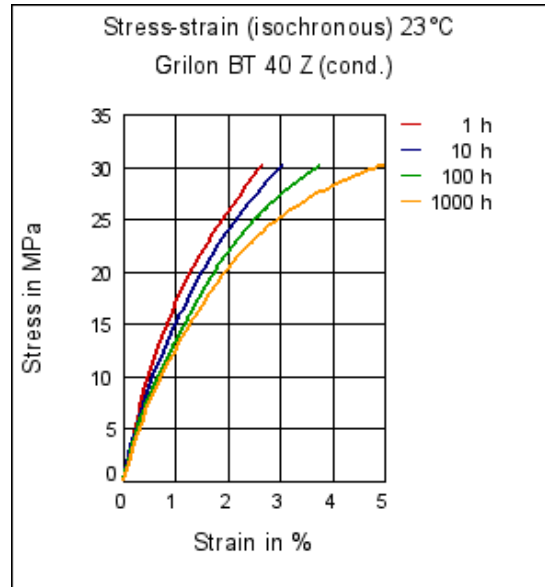
Secant modulus-strain



Secant modulus-strain



Stress-strain (isochronous) 23°C

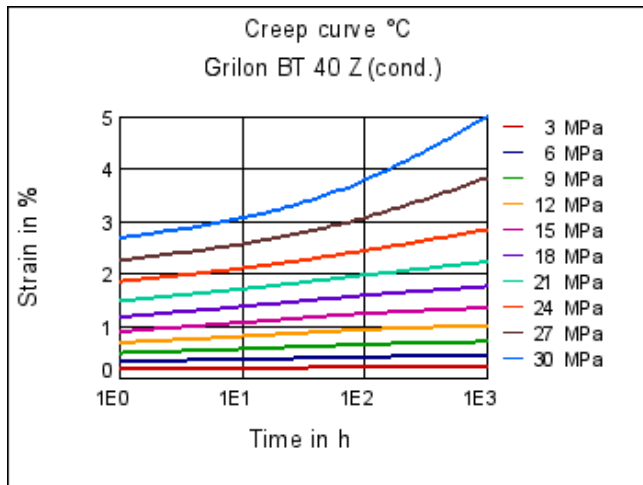


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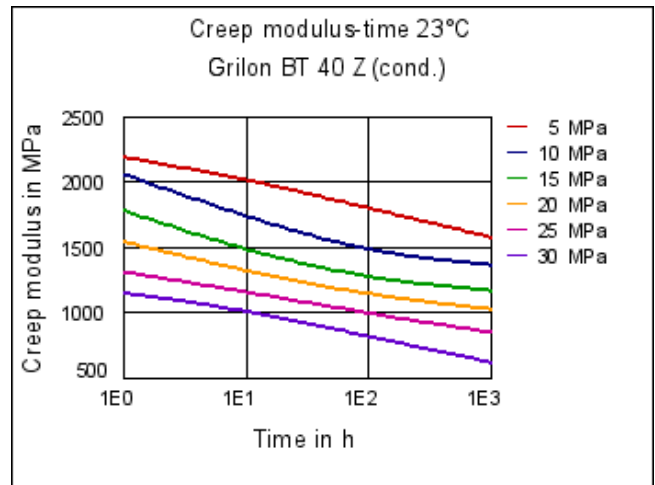
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Creep curve °C



Creep modulus-time 23°C



Characteristics

Processing

Injection Molding

Delivery form

Granules

Special Characteristics

High impact or impact modified

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)

Regional Availability

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

Industry & Consumer goods

Housewares, Sports & Leisure, Tools & Accessories

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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)
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