

Grilon ELX 40 HNZ

TPA

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Product Texts

Product designation according to ISO 1874:

PA 6/X-HI, BGH, 32-005

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	550 / 250	MPa	ISO 527-1/-2
Stress at 50% strain	21 / 16	MPa	ISO 527-1/-2
Strain at break	>50 / >50	%	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)	N / N	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	25 / 25	kJ/m ²	ISO 179/1eA

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Shore D hardness (15s)	58 / 50	-	ISO 868

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	210 / -	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	45 / -	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	60 / -	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	160 / -	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	170 / -	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)	100 - 120	°C	ISO 2578
Max. usage temperature (short term)	180	°C	EMS

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	1E9 / 1E8	Ohm*m	IEC 60093
Surface resistivity	- / 1E10	Ohm	IEC 60093
Electric strength	28 / 26	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	6.5 / -	%	Sim. to ISO 62
Humidity absorption	2 / -	%	Sim. to ISO 62
Density	1030 / -	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

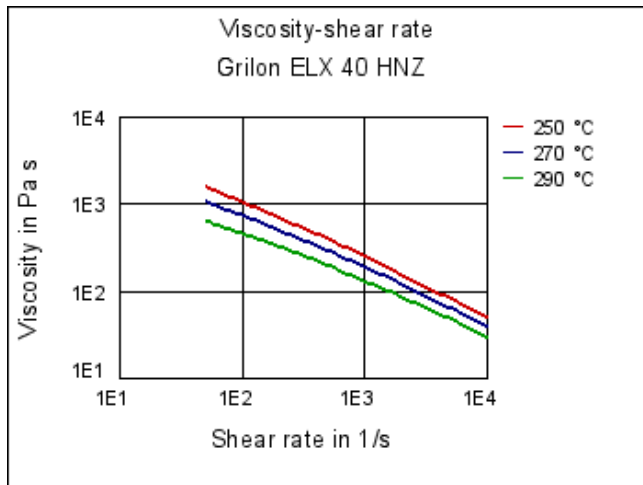
Diagrams

Grilon ELX 40 HNZ

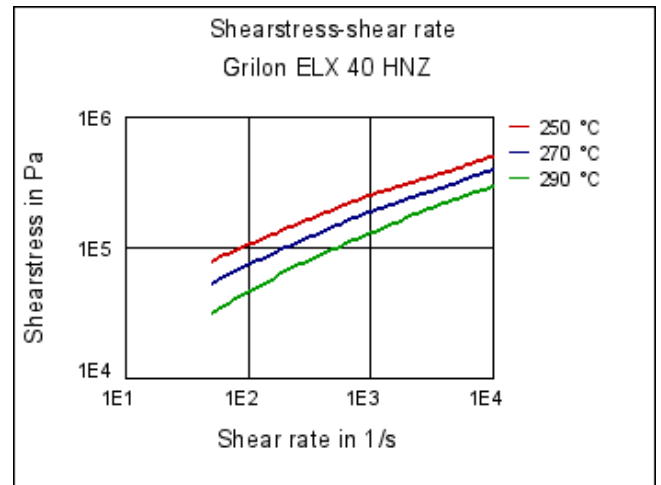
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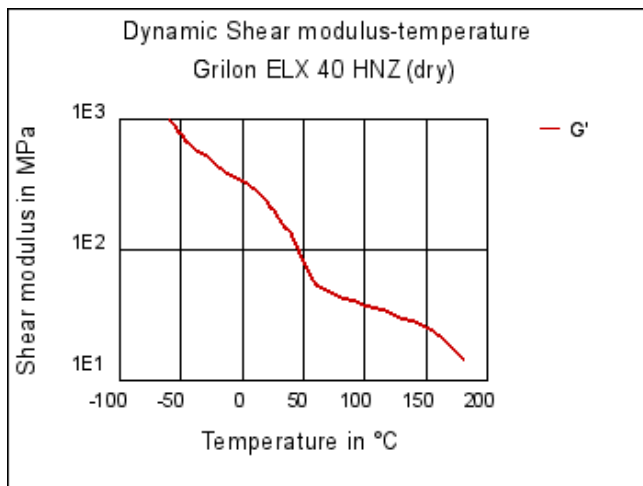
Viscosity-shear rate



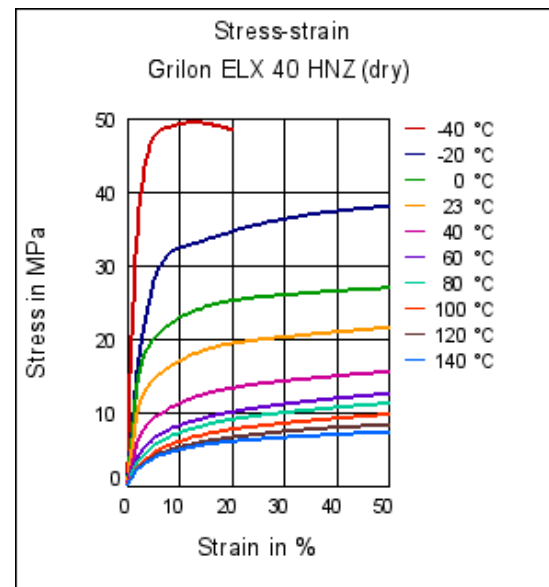
Shearstress-shear rate



Dynamic Shear modulus-temperature



Stress-strain

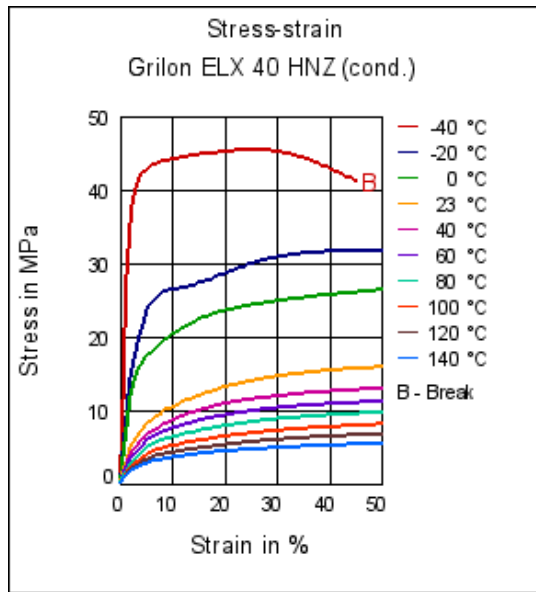


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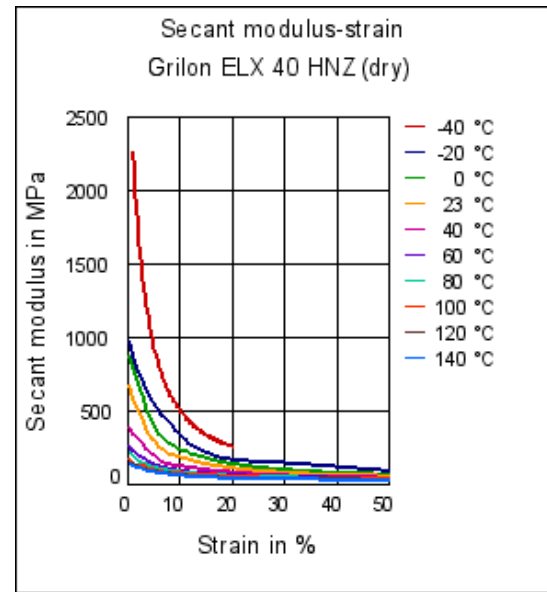
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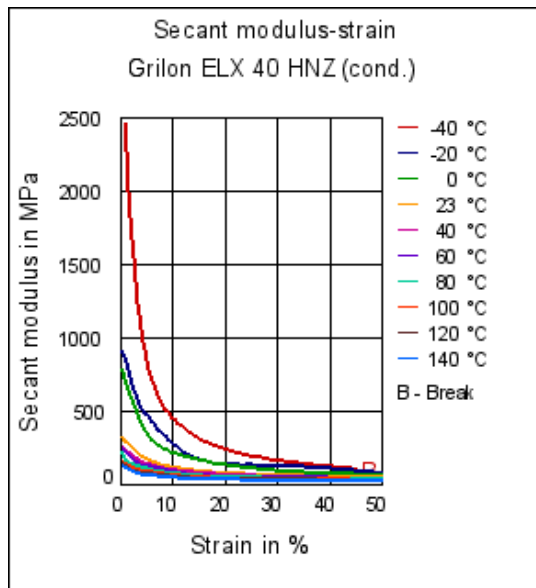
Stress-strain



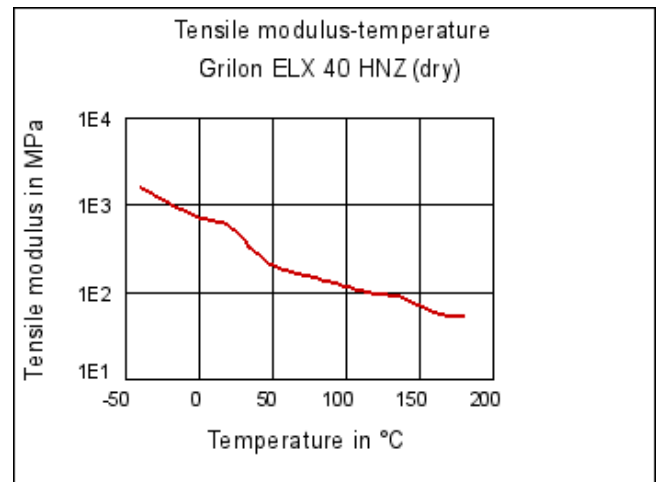
Secant modulus-strain



Secant modulus-strain



Tensile modulus-temperature



Characteristics

Processing

Extrusion - blow molding, Other Extrusion

Delivery form

Granules

Special Characteristics

High impact or impact modified, Improved heat resistance

Automotive

Air intake systems, Cooling and climate control

Electricals & Electronics

Cables & Tubes

Industry & Consumer goods

Hydraulics & Pneumatics

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Regional Availability

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




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)
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- 😊 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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