

Rilsan® BESNO P20 TL

PA11

Rilsan® BESNO P20 TL (PA11-P, EHL, 22-005) resin

Rilsan® BESNO P20 TL resin is a polyamide produced from a renewable source.

This grade is plasticized and designed for extrusion.

Rheological properties

	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	2 / *	cm ³ /10min	ISO 1133
Temperature	235 / *	°C	-
Load	5 / *	kg	-

Mechanical properties

	dry / cond	Unit	Test Standard
Tensile Modulus	500 / 440	MPa	ISO 527-1/-2
Yield stress	32 / 29	MPa	ISO 527-1/-2
Yield strain	20 / 20	%	ISO 527-1/-2
Nominal strain at break	>50 / >50	%	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	- / N	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	- / 9	kJ/m ²	ISO 179/1eA

Thermal properties

	dry / cond	Unit	Test Standard
Melting temperature, 10°C/min	187 / *	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.80 MPa	47 / *	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	135 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	146 / *	°C	ISO 306
Coeff. of linear therm. expansion, parallel	100 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.6 / *	mm	-
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3.2 / *	mm	-
Oxygen index	22 / *	%	ISO 4589-1/-2

Electrical properties

	dry / cond	Unit	Test Standard
Volume resistivity	- / 1E10	Ohm*m	IEC 60093
Surface resistivity	* / 2E12	Ohm	IEC 60093
Electric strength	- / 24	kV/mm	IEC 60243-1

Rilsan® BESNO P20 TL

PA11

Other properties

Water absorption

dry / cond

1.8 / *

Unit

%

Test Standard

Sim. to ISO 62

Density

1040 / 1040

kg/m³

ISO 1183

Test specimen production

Injection Molding, melt temperature

Value

270

Unit

°C

Test Standard

ISO 294

Injection Molding, mold temperature

50

°C

ISO 10724

Injection Molding, pressure at hold

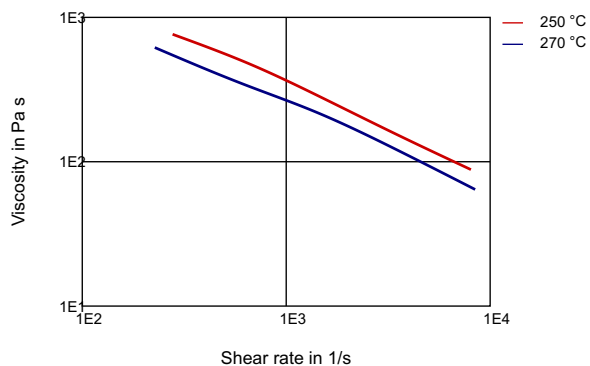
16

MPa

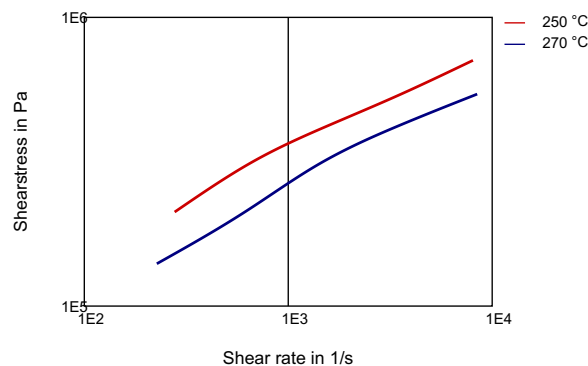
ISO 294

Diagrams

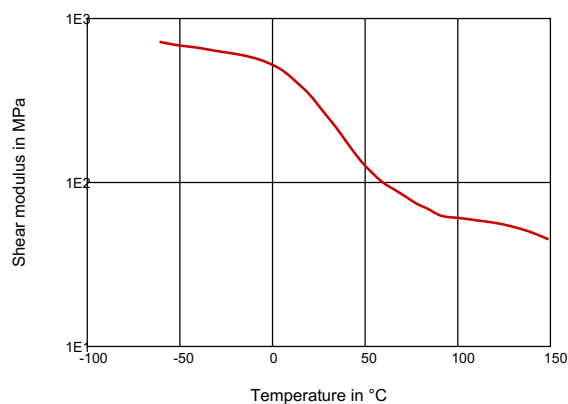
Viscosity-shear rate



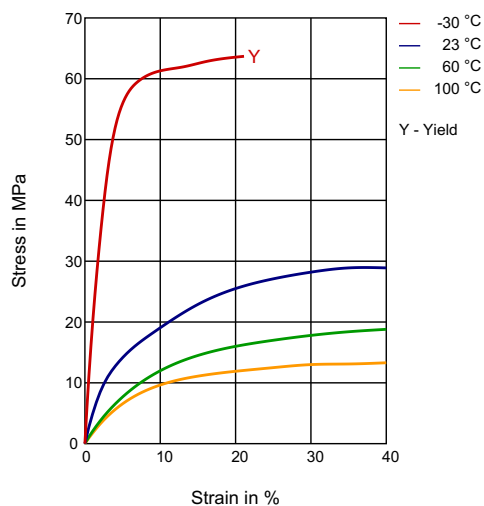
Shearstress-shear rate



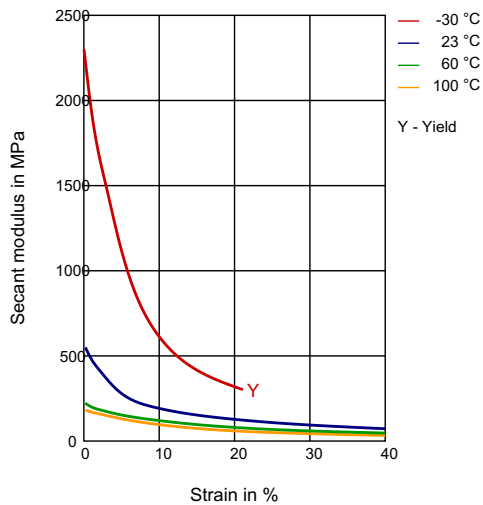
Dynamic Shear modulus-temperature



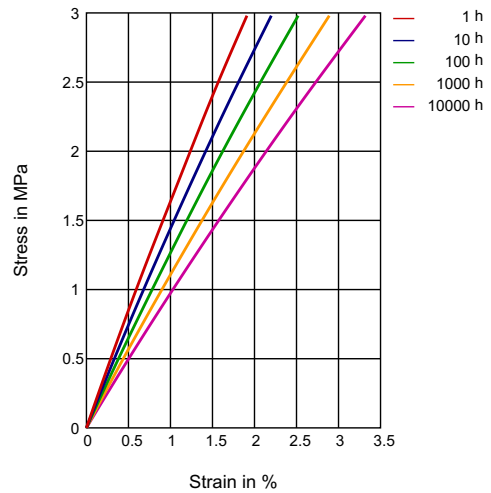
Stress-strain



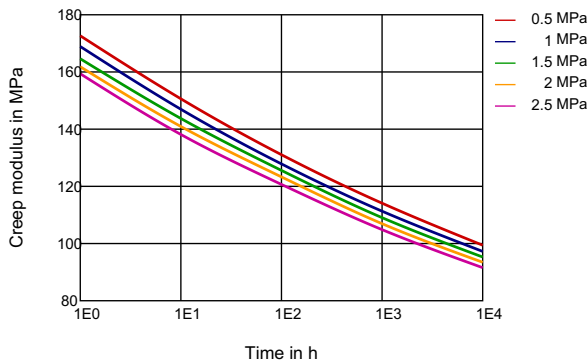
Secant modulus-strain



Stress-strain (isochronous) 40°C



Creep modulus-time 40°C



Characteristics

Processing

Injection Molding, Profile Extrusion, Other Extrusion

Delivery form

Pellets

Additives

Lubricants, Plasticizer

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass) (23°C)
- ✓ Citric Acid solution (10% by mass) (23°C)

Special Characteristics

Light stabilized or stable to light, U.V. stabilized or stable to weather, Heat stabilized or stable to heat

Regional Availability

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

Rilsan® BESNO P20 TL

PA11

- ✓ 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

- ✓ Methanol (23°C)
- ✓ Ethanol (23°C)

Hydrocarbons

- ✓ n-Hexane (23°C)
- ✓ Toluene (23°C)

Ketones

- ✓ Acetone (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)
- ✓ 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)