

RILSAN®

BESNO TL

PA11,EHL,22-010

Rilsan® BESNO TL resin is a polyamide 11 produced from a renewable source. This natural grade is designed for extrusion.

The percentage of **renewable carbon is 96%** (calculated value, based on ASTM D6866).

MAIN CHARACTERISTICS

| PROPERTIES | DRY / COND | UNIT | TEST STANDARD |
|---|--------------|------------------------|-----------------|
| RHEOLOGICAL PROPERTIES | | | |
| Melt Volume-Flow Rate | 1 / * | cm ³ /10min | ISO 1133 |
| Temperature | 235 / * | °C | - |
| Load | 2.16 / * | kg | - |
| MECHANICAL PROPERTIES | | | |
| Tensile Modulus | - / 1280 | MPa | ISO 527-1/-2 |
| Yield stress | - / 38 | MPa | ISO 527-1/-2 |
| Yield strain | - / 5 | % | ISO 527-1/-2 |
| Nominal Strain at Break | - / >50 | % | ISO 527-1/-2 |
| Shore D Hardness | 72 / * | - | ISO 868 |
| Charpy Impact Strength, +23°C | - / No Break | kJ/m ² | ISO 179/1eU |
| Charpy Impact Strength, -30°C | - / No Break | kJ/m ² | ISO 179/1eU |
| Charpy Notched Impact Strength, +23°C | - / 11 | kJ/m ² | ISO 179/1eA |
| Charpy Notched Impact Strength, -30°C | - / 12 | kJ/m ² | ISO 179/1eA |
| Puncture - Maximum Force, -30°C | - / 6000 | N | ISO 6603-2 |
| Puncture Energy, -30°C | - / 70 | J | ISO 6603-2 |
| THERMAL PROPERTIES | | | |
| Melting Temperature, 10°C/min | 186 / * | °C | ISO 11357-1/-3 |
| Temp. of Deflection Under Load, 1.80 MPa | 50 / * | °C | ISO 75-1/-2 |
| Temp. of Deflection Under Load, 0.45 MPa | 145 / * | °C | ISO 75-1/-2 |
| Vicat Softening Temperature, 50°C/h 50N | 160 / * | °C | ISO 306 |
| Coeff. of Linear Thermal Expansion, parallel | 85 / * | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at 1.5 mm Nominal Thickness | HB / * | class | IEC 60695-11-10 |
| Thickness Tested | 1.6 / * | mm | - |
| Yellow Card available | yes / * | - | - |
| ELECTRICAL PROPERTIES | | | |
| Relative Permittivity, 100Hz | 3 / - | - | IEC 60250 |
| Relative Permittivity, 1MHz | 3 / - | - | IEC 60250 |

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| | | | |
|---------------------------------------|-------------|-------------------|----------------|
| Dissipation Factor, 100Hz | 308 / - | E-4 | IEC 60250 |
| Dissipation Factor, 1MHz | 183 / - | E-4 | IEC 60250 |
| Volume Resistivity | - / 1E12 | Ohm*m | IEC 60093 |
| Surface Resistivity | * / 1E14 | Ohm | IEC 60093 |
| Dielectric (Electric) Strength | - / 30 | kV/mm | IEC 60243-1 |
| OTHER PROPERTIES | | | |
| Water Absorption | 1.9 / * | % | Sim. to ISO 62 |
| Density | 1020 / 1020 | kg/m ³ | ISO 1183 |
| %Bio-Based | 96 | - | ASTM D6866 |

MAIN APPLICATIONS:

- Fluid transportation

PACKAGING:

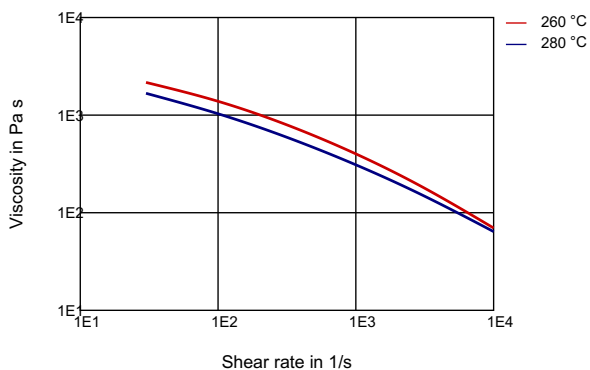
This grade is delivered dried in sealed packaging (25 kg bags, 44 lb bags, 1000 lb rigid containers) ready to be processed.

SHELF LIFE:

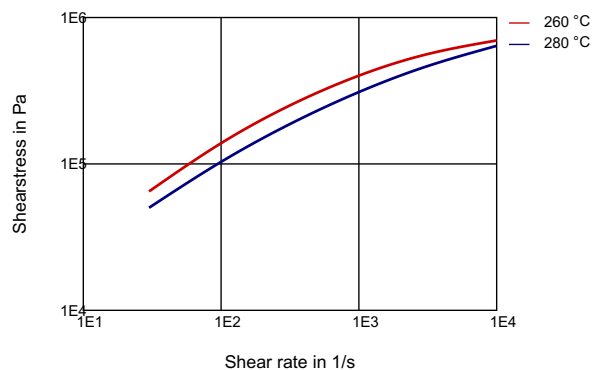
Two years from the delivery. For any use above this limit, please refer to our technical services.

DIAGRAMS

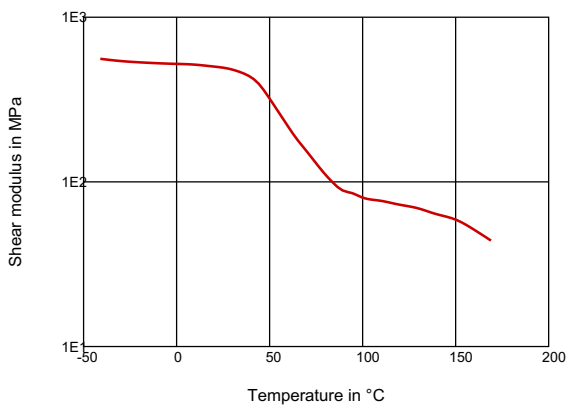
VISCOSITY-SHEAR RATE



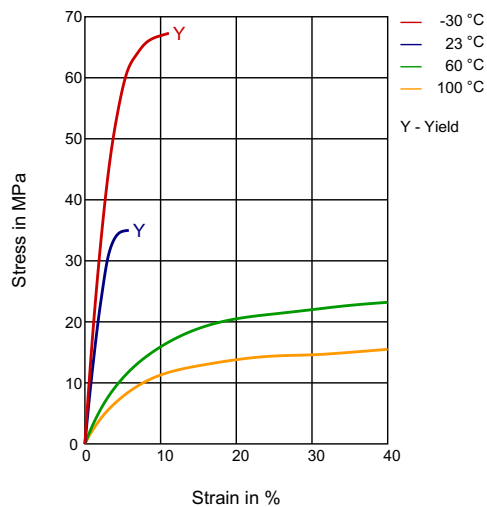
SHEARSTRESS-SHEAR RATE



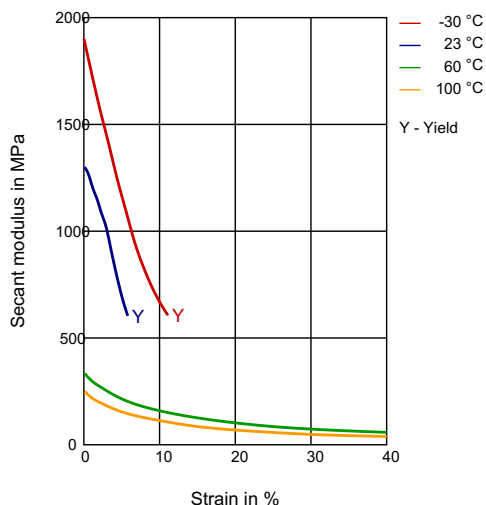
DYNAMIC SHEAR MODULUS-TEMPERATURE



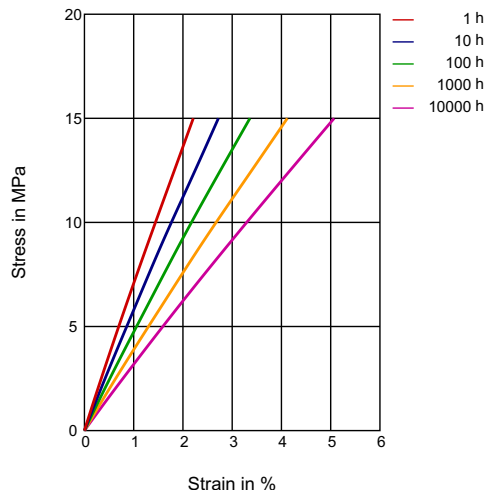
STRESS-STRAIN



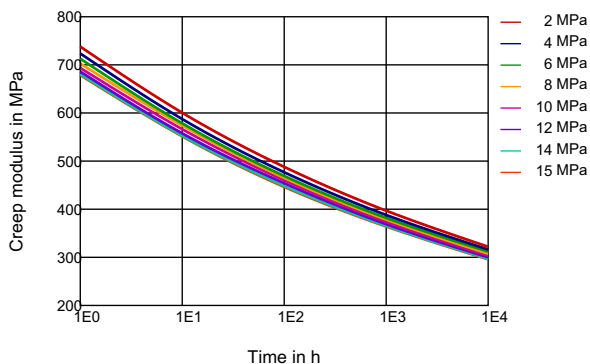
SECANT MODULUS-STRAIN



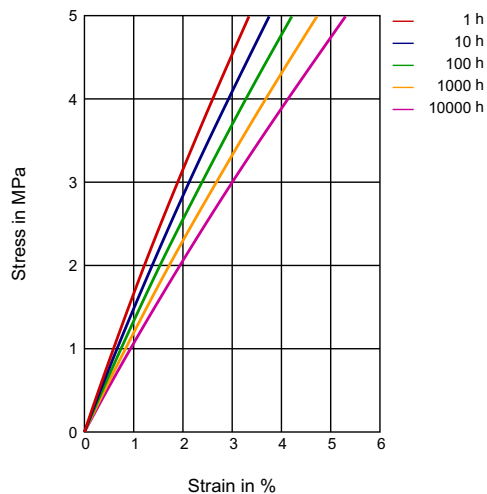
STRESS-STRAIN (ISOCHRONOUS) 23°C



CREEP MODULUS-TIME 23°C



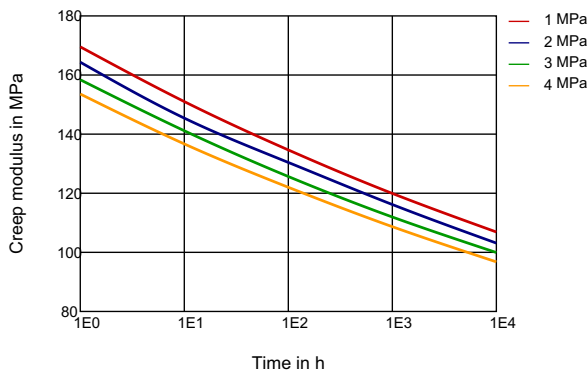
STRESS-STRAIN (ISOCHRONOUS) 80°C



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CREEP MODULUS-TIME 80°C



Processing conditions:

- Typical melt temperature (Min / Recommended / Max) : 230°C / 250°C / 280°C.
- Drying time and temperature (only necessary for bags opened for more than two hours) : 4-8 hours at 80-90°C.

PROCESSING

Film Extrusion, Profile Extrusion, Sheet Extrusion, Other Extrusion

DELIVERY FORM

Pellets

ADDITIVES

Lubricants

SPECIAL CHARACTERISTICS

Bio-Based, Heat Stabilized, Light Stabilized

REGIONAL AVAILABILITY

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

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