

# RILSAN® BESNO P40 TL

PA11-P, EHL, 22-003

**Rilsan® BESNO P40 TL resin** is a polyamide 11 produced from a renewable source. This natural grade is plasticized and designed for extrusion.

The percentage of renewable carbon according to ASTM D 6866 (calculated) is >89%.

| PROPERTIES                                   | DRY /<br>COND   | UNIT     | TEST<br>STANDARD |
|----------------------------------------------|-----------------|----------|------------------|
| MECHANICAL PROPERTIES                        |                 |          |                  |
| Tensile Modulus                              | - / 345         | MPa      | ISO 527-1/-2     |
|                                              | - /             | psi      |                  |
| Yield stress                                 | 50000<br>- / 26 | MPa      | ISO 527-1/-2     |
|                                              | - / 3770        | psi      |                  |
| Yield strain                                 | - / 50          | %        | ISO 527-1/-2     |
| Nominal Strain at Break                      | - / >50         | %        | ISO 527-1/-2     |
| Shore D Hardness                             | 60 / *          | -        | ISO 868          |
| Charpy Impact Strength, +23°C                | - / No<br>Break | kJ/m²    | ISO 179/1eU      |
| Charpy Impact Strength, -30°C                | - / No<br>Break | kJ/m²    | ISO 179/1eU      |
| Charpy Notched Impact Strength, +23°C        | - / No<br>Break | kJ/m²    | ISO 179/1eA      |
| Charpy Notched Impact Strength, -30°C        | - / 7           | kJ/m²    | ISO 179/1eA      |
|                                              | - / 3.33        | ftlb/in² |                  |
| 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                | 181 / *         | °C       | ISO 11357-1/-3   |
| Temp. of Deflection Under Load, 1.80 MPa     | 45 / *          | °C       | ISO 75-1/-2      |
|                                              | 113 / *         | °F       |                  |
| Temp. of Deflection Under Load, 0.45 MPa     | 130 / *         | °C       | ISO 75-1/-2      |
|                                              | 266 / *         | °F       |                  |
| Vicat Softening Temperature, 50°C/h 50N      | 140 / *         | °C       | ISO 306          |
|                                              | 284 / *         | °F       |                  |
| Coeff. of Linear Thermal Expansion, parallel | 110 / *         | E-6/K    | ISO 11359-1/-2   |
| ELECTRICAL PROPERTIES                        |                 |          |                  |
| Relative Permittivity, 100Hz                 | 9 / -           | -        | IEC 60250        |
| Relative Permittivity, 1MHz                  | 4 / -           | -        | IEC 60250        |

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|                                |             |       |                |
|--------------------------------|-------------|-------|----------------|
| Dissipation Factor, 100Hz      | 2440 / -    | E-4   | IEC 60250      |
| Dissipation Factor, 1MHz       | 1040 / -    | E-4   | IEC 60250      |
| Volume Resistivity             | - / 1E9     | Ohm*m | IEC 60093      |
| Surface Resistivity            | * / 5E11    | Ohm   | IEC 60093      |
| Dielectric (Electric) Strength | - / 23      | kV/mm | IEC 60243-1    |
|                                | - / 584     | kV/in |                |
| OTHER PROPERTIES               |             |       |                |
| Water Absorption               | 1.6 / *     | %     | Sim. to ISO 62 |
| Density                        | 1040 / 1040 | kg/m³ | ISO 1183       |
|                                | 1.04 / 1.04 | g/cm³ |                |
| %Bio-Based                     | 89          | -     | ASTM D6866     |

## MAIN APPLICATIONS:

- Fluid transportation
- Air brake line
- Fuel line
- Tubing for use in motor vehicle

## PACKAGING:

This grade is delivered dried in sealed packaging (25 kg bags, 44 lb bags, 550 kg rigid containers, 1000 lb rigid containers) ready to be processed.

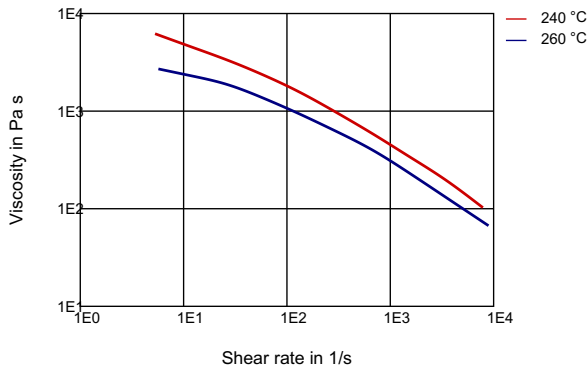
## SHELF LIFE:

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

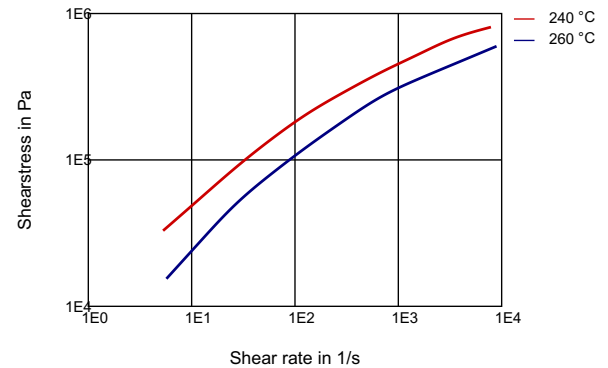
# RILSAN® BESNO P40 TL

## DIAGRAMS

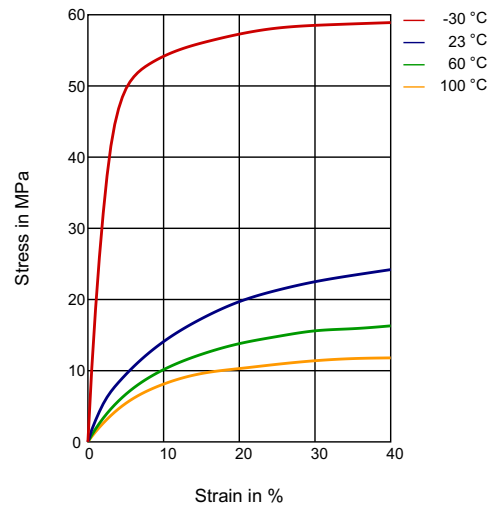
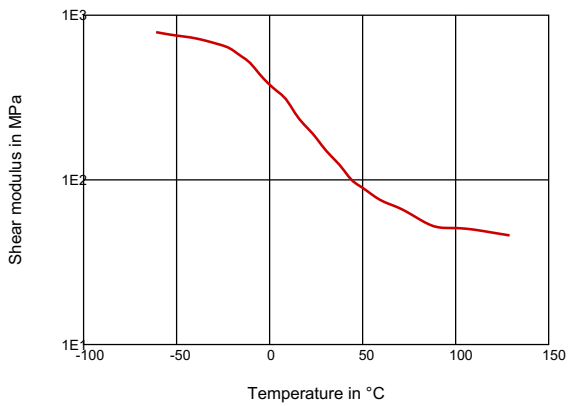
### VISCOSITY-SHEAR RATE



### SHEARSTRESS-SHEAR RATE

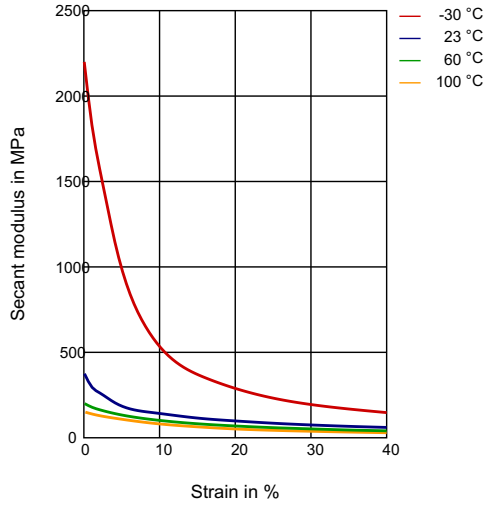


### DYNAMIC SHEAR MODULUS-TEMPERATURE & STRESS-STRAIN

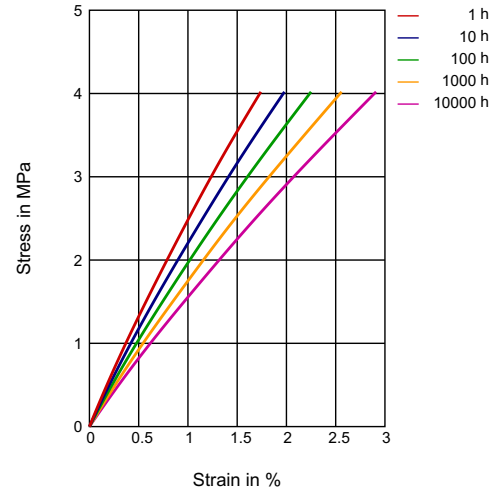


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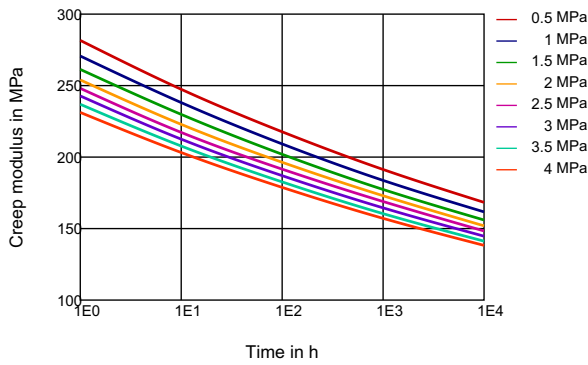
## SECANT MODULUS-STRAIN



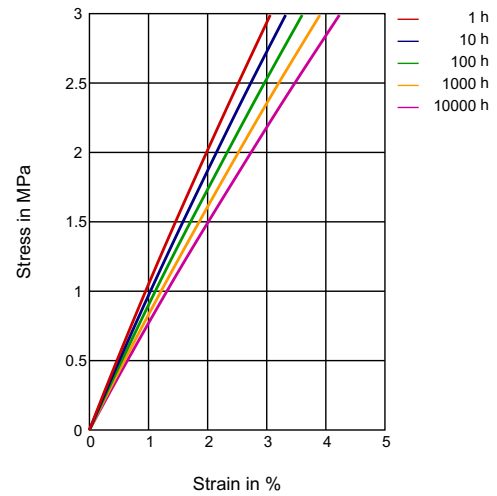
## STRESS-STRAIN (ISOCHRONOUS) 73°F



## CREEP MODULUS-TIME 73°F

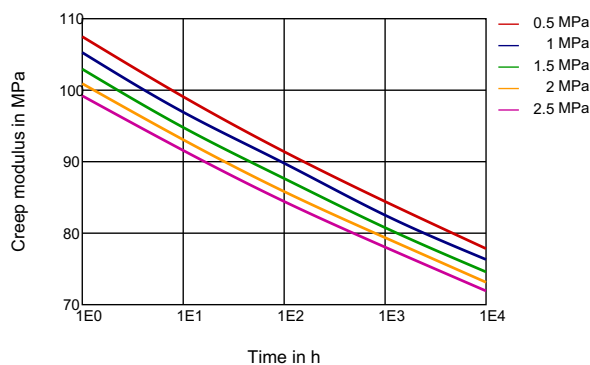


## STRESS-STRAIN (ISOCHRONOUS) 212°F

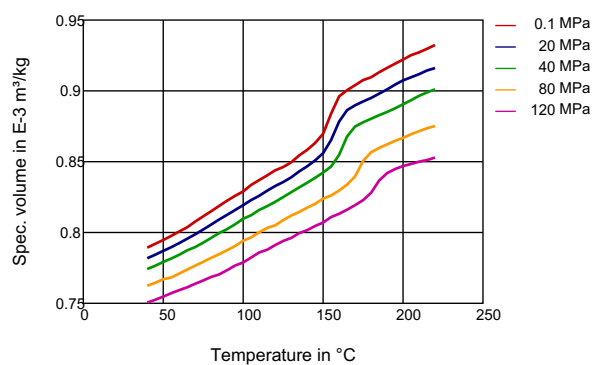


# RILSAN® BESNO P40 TL

## CREEP MODULUS-TIME 212°F



## SPECIFIC VOLUME-TEMPERATURE (PVT)



### 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

Profile Extrusion, Other Extrusion

### DELIVERY FORM

Pellets

### ADDITIVES

Lubricants, Plasticizer

### SPECIAL CHARACTERISTICS

Bio-Based, Heat Stabilized, Light Stabilized

### REGIONAL AVAILABILITY

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