

## TECHNICAL DATA SHEET RILSAN® BMNO TLD

### POLYAMIDE 11 PELLET

RILSAN® BMNO TLD is a polyamide 11. It is produced from a renewable & sustainable source (castor oil). This natural grade is designed for injection molding and is used to produce automotive fittings & quick connectors.

Designation : ISO 16396 - PA11, M1G1HLR, C12-010

#### DESIGNATION

PA11

#### DELIVERY FORM

- Pellets

#### TRANSFORMATION PROCESSES

- Injection Molding

#### ADDITIVES

- Heat Stabilized
- Light Stabilized
- Release agent

### RHEOLOGICAL PROPERTIES

속성	값	테스트 표준
Shrinkage, Normal (t+24h)	1.0 %	ISO 294-4
Shrinkage, Parallel (t+24h)	1.1 %	ISO 294-4
Melt volume flow rate (MVR), 235°C / 2.16 kg (455°F / 4.4 lb)	30 cm³/10min	ISO 1133

### MECHANICAL PROPERTIES

속성	DRY / COND VALUE*	테스트 표준
Tensile modulus, 23°C (73°F), 1 mm/min	1320 / 1250 MPa	ISO 527-1/-2
Yield stress, 23°C (73°F), 50 mm/min	- / 41 MPa	ISO 527-1/-2
Yield strain, 23°C (73°F), 50 mm/min	- / 5 %	ISO 527-1/-2
Nominal strain at break, 23°C (73°F), 50 mm/min	- / > 50 %	ISO 527-1/-2
Flexural modulus, 23°C (73°F)	- / 1140 MPa	ISO 178
Charpy unnotched impact strength, 23°C (73°F)	- / No Break	ISO 179 1eU
Charpy unnotched impact strength, -30°C (-22°F)	- / No Break	ISO 179 1eU
Charpy notched impact strength, 23°C (73°F)	- / 8.3 kJ/m2	ISO 179 1eA
Charpy notched impact strength, -30°C (-22°F)	- / 10.5 kJ/m2	ISO 179 1eA
Hardness, Shore D, 15 s	- / 68	ISO 868

\*DRY: Dry As Molded (DAM) if pellet / Dry if powder.  
COND: Conditionned.

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속성	값	테스트 표준
Melting temperature, 10°C/min	189 °C	ISO 11357-1/-3
Vicat softening temperature, 50N at 50°C/h	160 °C	ISO 306
Heat deflection temperature, 0.45 MPa	145 °C	ISO 75-1/-2
Heat deflection temperature, 1.8 MPa	50 °C	ISO 75-1/-2

## THERMAL PROPERTIES ELECTRICAL PROPERTIES

속성	DRY / COND VALUE*	테스트 표준
Surface resistivity, 23°C (73,4°F)	- / 1.0E+14 ohm/sq	IEC 62631-3-2
Volumic (transversal) resistivity, 23°C (73,4°F)	- / 1.0E+12 ohm/m	IEC 62631-3-1
Comparative tracking index, 23°C (73,4°F)	- / 600	IEC 60112
Dielectric stress, 23°C (73,4°F)	- / 30	IEC 60243-1
Relative permittivity, 100Hz	- / 4	IEC 60250
Relative permittivity, 1Mhz	- / 3	IEC 60250
Dissipation factor, 100Hz	- / 598	IEC 60250
Dissipation factor, 1Mhz	- / 598	IEC 60250

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COND: Conditionned.

## OTHER PROPERTIES

속성	값	테스트 표준
Specific gravity, 23°C (73°F)	1.03 g/cm <sup>3</sup>	ISO 1183-1
Moisture absorption, At equilibrium at 23°C (73°F) / 50%HR	0.8 %	ISO 62
Water absorption, 23°C (73°F), immersion, equilibrium	1.9 %	ISO 62

## PACKAGING

This grade is delivered dried in sealed packaging ready to be processed. Available packaging:

- 26 kg / 55 lb bags

## SHELF LIFE

Two years from the date of delivery, when stored properly (sealed bags, appropriate moisture, UV protection and temperature). For any use above this limit, please refer to our technical services.

## PROCESSING CONDITIONS:

- Typical melt temperature (Min / Recommended / Max) - Injection Molding: 210°C / 230°C / 260°C (410°F / 445°F / 500°F)
- Typical mold temperature - Injection molding: 20-60°C (70-140°F)
- Drying time and temperature: 80-90°C (175-195°F) / 4-6 hours

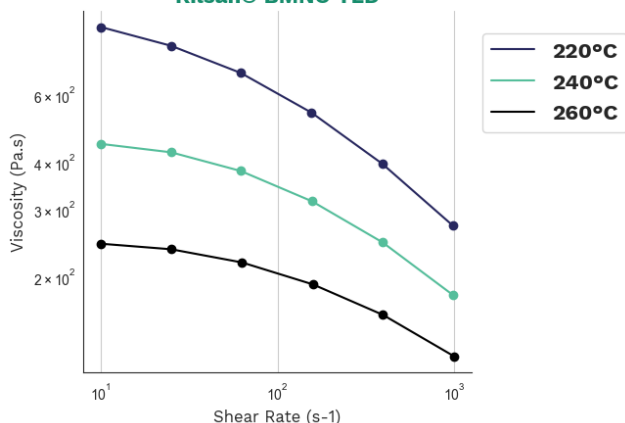
## SPECIAL CHARACTERISTICS

- Bio-based
- Low oligomers

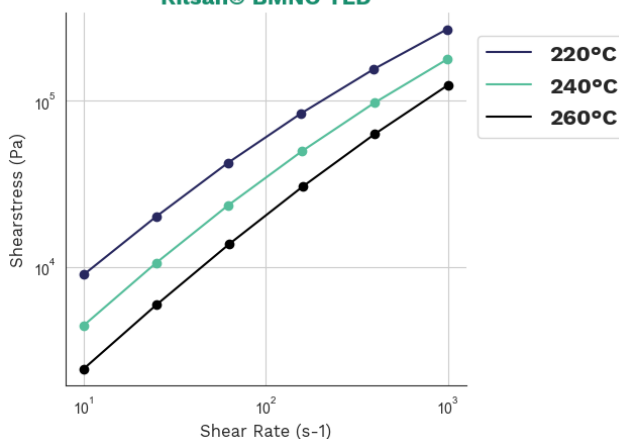
# RILSAN® BMNO TLD

## DIAGRAMS

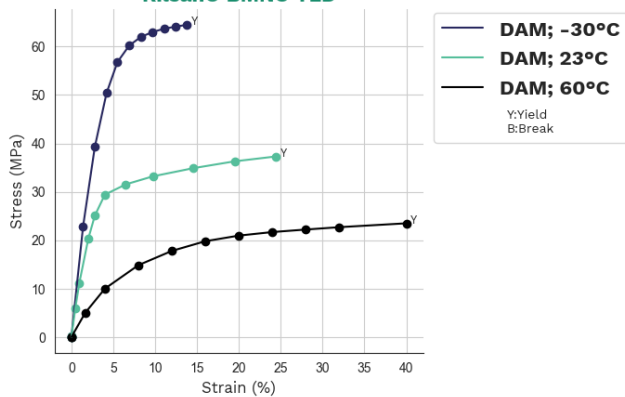
**Viscosity-shear rate**  
Rilsan® BMNO TLD



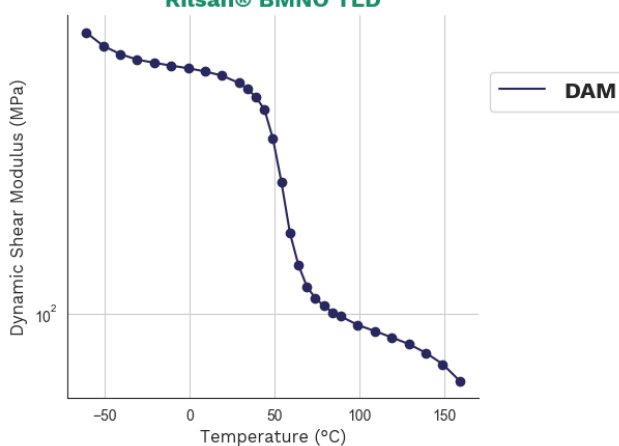
**Shearstress-shear rate**  
Rilsan® BMNO TLD



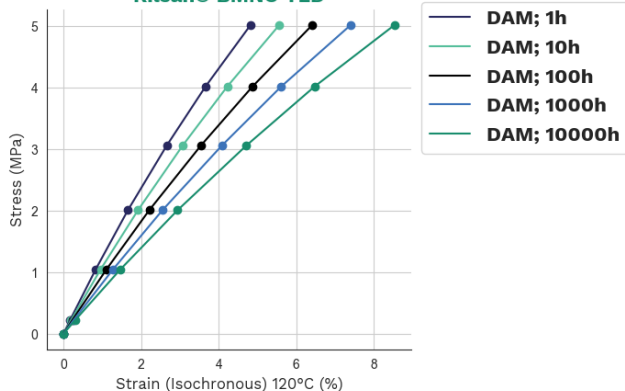
**Stress-strain**  
Rilsan® BMNO TLD



**Dynamic Shear modulus-temperature**  
Rilsan® BMNO TLD



**Stress-strain (Isochronous) 120°C**  
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# RILSAN® BMNO TLD

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