

TECHNICAL DATA SHEET

RILSAN® MB 3000 NAT

POLYAMIDE 11 PELLET

RILSAN® MB 3000 NAT is a polyamide 11 compound. It is produced from a renewable & sustainable source (castor oil). This natural grade is designed for injection molding and is classified as Halogen Free Flame Retardant (HFFR). It combines very high flexibility with good impact resistance.

DESIGNATION

PA11-(FR)

MAIN APPLICATIONS

- Battery - Others Energies
- Oil And Gas - Others
- HHB - Others
- Cable
- Accessories
- Industry - Others
- Industry - Distribution
- Antistatics
- Auto - Others Injection
- Rotomolding
- Heavy Truck H2 & Gas Lines And Tanks

DELIVERY FORM

- Pellets

TRANSFORMATION PROCESSES

- Injection Molding

ADDITIVES

- Flame retarding agent
- Heat Stabilized
- Light Stabilized

RHEOLOGICAL PROPERTIES

PROPERTIES	VALUE	TEST STANDARD
Melt volume flow rate (MVR), 235°C / 2.16 kg (455°F / 4.4 lb)	95 cm ³ /10min	ISO 1133
Shrinkage, Parallel (t+24h)	1.0 %	ISO 294-4
Shrinkage, Normal (t+24h)	1.1 %	ISO 294-4

MECHANICAL PROPERTIES

PROPERTIES	DRY / COND VALUE*	TEST STANDARD
Hardness, Shore D, 15 s	- / 69	ISO 868
Charpy unnotched impact strength, 23°C (73°F)	- / 83 kJ/m ²	ISO 179 1eU
Charpy unnotched impact strength, -30°C (-22°F)	- / 38 kJ/m ²	ISO 179 1eU
Nominal strain at break, 23°C (73°F), 50 mm/min	> 50 / > 50 %	ISO 527-1/-2
Yield strain, 23°C (73°F), 50 mm/min	5 / 5 %	ISO 527-1/-2
Yield stress, 23°C (73°F), 50 mm/min	45 / 45 MPa	ISO 527-1/-2
Flexural modulus, 23°C (73°F)	- / 1140 MPa	ISO 178
Tensile modulus, 23°C (73°F), 1 mm/min	- / 1830 MPa	ISO 527-1/-2
Charpy notched impact strength, 23°C (73°F)	- / 4 kJ/m ²	ISO 179 1eA
Charpy notched impact strength, -30°C (-22°F)	- / 3 kJ/m ²	ISO 179 1eA

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

RILSAN® MB 3000 NAT

THERMAL PROPERTIES

PROPERTIES	VALUE	TEST STANDARD
Yellow card available	yes	
Melting temperature, 10°C/min	189 °C	ISO 11357-1/-3

ELECTRICAL PROPERTIES

PROPERTIES	DRY / COND VALUE*	TEST STANDARD
Surface resistivity, 23°C (73,4°F)	- / >1E15 ohm/sq	IEC 62631-3-2
Volumic (transversal) resistivity, 23°C (73,4°F)	- / >1E13 ohm/m	IEC 62631-3-1
Comparative tracking index, 23°C (73,4°F)	- / 600	IEC 60112
Dielectric stress, 23°C (73,4°F)	- / 28	IEC 60243-1
Relative permittivity, 100Hz	- / 3	IEC 60250
Relative permittivity, 1Mhz	- / 3	IEC 60250
Dissipation factor, 100Hz	- / 221	IEC 60250
Dissipation factor, 1Mhz	- / 221	IEC 60250

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OTHER PROPERTIES

PROPERTIES	VALUE	TEST STANDARD
Moisture absorption, At equilibrium at 23°C (73°F) / 50%HR	0.6 %	ISO 62
Water absorption, 23°C (73°F), immersion, equilibrium	2 %	ISO 62
Specific gravity, 23°C (73°F)	1.09 g/cm ³	ISO 1183-1

PACKAGING

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

- 25 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: 250°C / 270°C / 290°C (480°F / 520°F / 555°F)
- Typical mold temperature - Injection molding: 40-90°C (105-195°F)
- Drying time and temperature: 80-90°C (175-195°F) / 4-6 hours

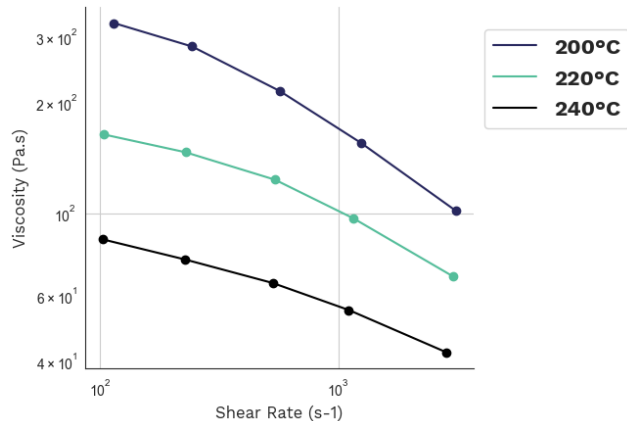
SPECIAL CHARACTERISTICS

- Bio-based
- Halogen Free Flame Retardant (HFFR)

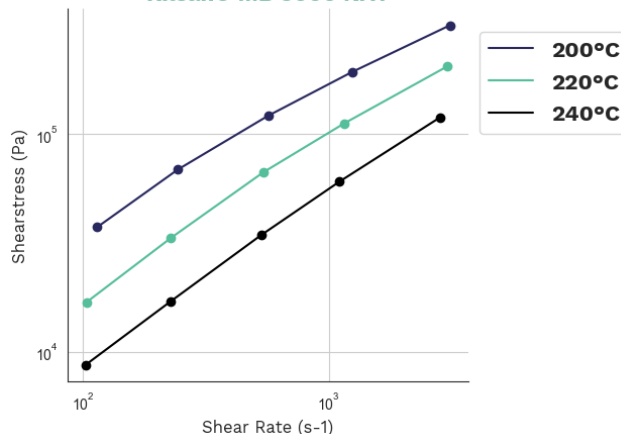
RILSAN® MB 3000 NAT

DIAGRAMS

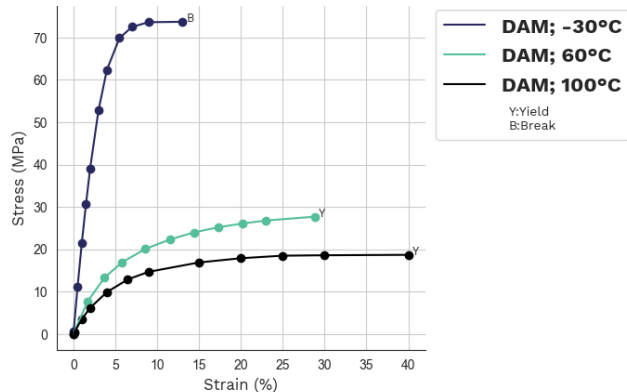
Viscosity-shear rate
Rilsan® MB 3000 NAT



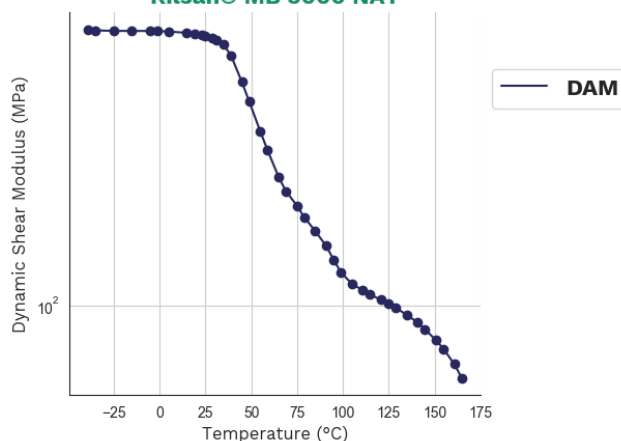
Shearstress-shear rate
Rilsan® MB 3000 NAT



Stress-strain
Rilsan® MB 3000 NAT



Dynamic Shear modulus-temperature
Rilsan® MB 3000 NAT



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