

# RILSAN® BESVO A MED

## PA11, E, 22-010

Rilsan® BESVO A MED resin is a polyamide 11 produced from a renewable source. This natural grade, dedicated to extrusion, contains a negligible amount of oligomers. Rilsan® BESVO A MED resin offers the highest quality and it is specially designed to meet the stringent requirements of the medical applications such as minimally invasive devices.

Upon request letters regarding USP Class VI compliance can be provided.

The percentage of renewable carbon according to ASTM D 6866 (calculated) is 100%.

### Main applications:

- Nutritional bags.
- Catheters.

### Packaging:

This grade is delivered dried in sealed packaging (25 kg bags) ready to be processed.

### Shelf Life:

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

## MAIN CHARACTERISTICS

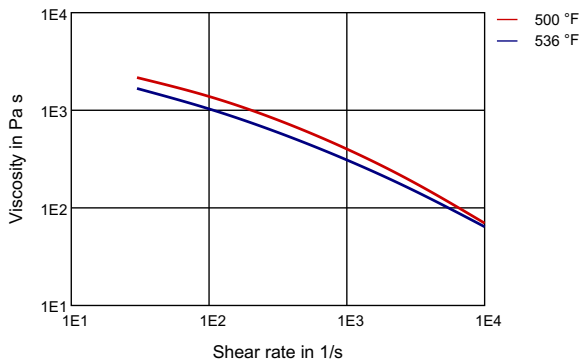
PROPERTIES	DRY / COND	UNIT	TEST STANDARD
Melt volume-flow rate, MVR	6 / *	cm <sup>3</sup> /10min	ISO 1133
Temperature	455 / *	°F	-
Load	22 / *	lb	-
Tensile Modulus	- / 171000	psi	ISO 527-1/-2
Yield stress	- / 5220	psi	ISO 527-1/-2
Yield strain	- / 5	%	ISO 527-1/-2
Nominal strain at break	- / >50	%	ISO 527-1/-2
Charpy impact strength, +23°C	- / N	ftlb/in <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	- / N	ftlb/in <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	- / 7.14	ftlb/in <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	- / 6.18	ftlb/in <sup>2</sup>	ISO 179/1eA
Melting temperature, 10°C/min	367 / *	°F	ISO 11357-1/-3
Temp. of deflection under load, 1.80 MPa	122 / *	°F	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	293 / *	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	320 / *	°F	ISO 306
Coeff. of linear therm. expansion, parallel	85 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.0630 / *	in	-
Burning Behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.1260 / *	in	-
Oxygen index	25 / *	%	ISO 4589-1/-2
Electric strength	- / 762	kV/in	IEC 60243-1

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SDC/11-2018

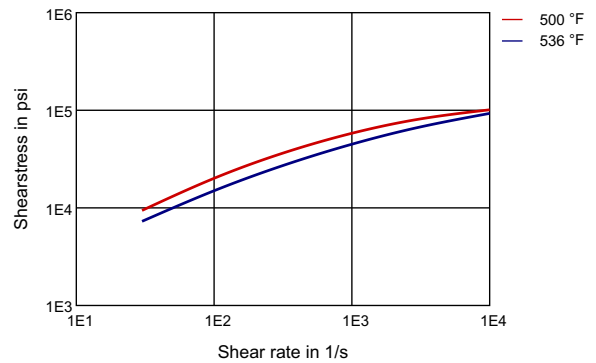
Water absorption	1.9 / *	%	Sim. to ISO 62
Density	1.02 / 1.02	g/cm <sup>3</sup>	ISO 1183
Injection Molding, melt temperature	500	°F	ISO 294
Injection Molding, mold temperature	122	°F	ISO 10724
Injection Molding, pressure at hold	2320	psi	ISO 294
Shore D hardness, 15s	71 / *	-	ISO 7619-1

## Diagrams

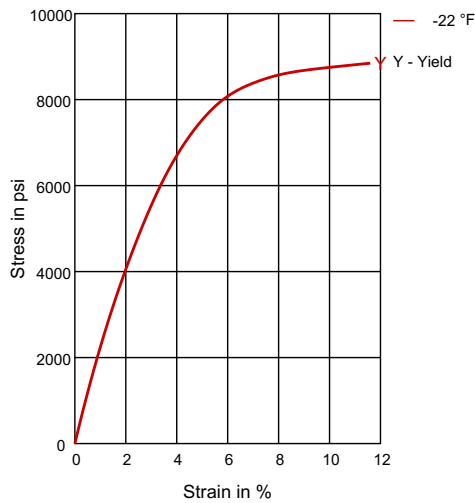
### Viscosity-shear rate



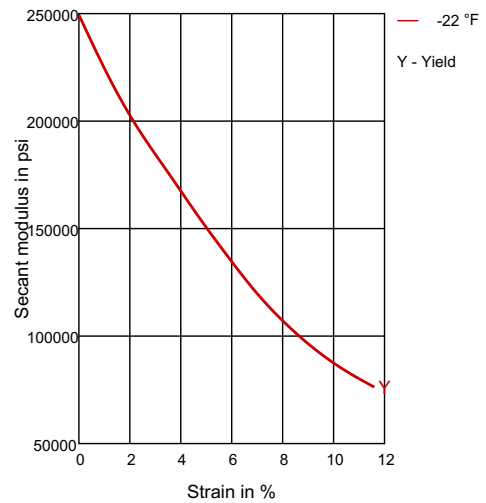
### Shearstress-shear rate



### Stress-strain



### Secant modulus-strain



## 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) : 4-6 hours at 65-80°C.

## Processing

Injection Molding, Film Extrusion, Profile Extrusion, Other Extrusion

## Regional Availability

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

## Delivery form

Pellets

## Chemical Media Resistance

### Acids

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

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