

## Rilsan® Clear G170 MED

PA\*

ARKEMA

PA,,MT,C12-020

**Rilsan® Clear G170 MED** is a high performance transparent polyamide resin with outstanding thermal resistance. This grade offers the highest quality and is specifically designed to meet the stringent requirements of the medical applications. Upon request letters regarding USP class VI compliance can be provided.

### Main applications:

- Medical perfusion tube accessories
- Breathing mask

### 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.

| Rheological properties      | dry / cond | Unit                   | Test Standard   |
|-----------------------------|------------|------------------------|-----------------|
| <b>ISO Data</b>             |            |                        |                 |
| Melt volume-flow rate, MVR  | 2 / *      | cm <sup>3</sup> /10min | ISO 1133        |
| Temperature                 | 275 / *    | °C                     | -               |
| Load                        | 2.16 / *   | kg                     | -               |
| Molding shrinkage, parallel | 1.1 / *    | %                      | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 1.1 / *    | %                      | ISO 294-4, 2577 |

| Mechanical Properties                   | dry / cond  | Unit              | Test Standard |
|-----------------------------------------|-------------|-------------------|---------------|
| <b>ISO Data</b>                         |             |                   |               |
| Tensile Modulus                         | 2100 / 2020 | MPa               | ISO 527       |
| Yield stress                            | 76 / 74     | MPa               | ISO 527       |
| Yield strain                            | 8 / 9       | %                 | ISO 527       |
| Nominal strain at break                 | >50 / >50   | %                 | ISO 527       |
| Notched Impact Strength (Charpy), +23°C | - / 13      | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Notched Impact Strength (Charpy), -30°C | - / 13      | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Shore Hardness D (15s)                  | 79 / -      | -                 | ISO 868       |

| Thermal Properties                          | dry / cond | Unit  | Test Standard  |
|---------------------------------------------|------------|-------|----------------|
| <b>ISO Data</b>                             |            |       |                |
| Glass Transition Temperature (10°C/min)     | 168 / *    | °C    | ISO 11357-1/-2 |
| Temp. of deflection under load (1.80 MPa)   | 136 / *    | °C    | ISO 75-1/-2    |
| Temp. of deflection under load (0.45 MPa)   | 150 / *    | °C    | ISO 75-1/-2    |
| Vicat softening temperature, 50°C/h 50N     | 160 / *    | °C    | ISO 306        |
| Coeff. of Linear Therm. Expansion, parallel | 70 / *     | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at 1.5 mm Nom. Thickn.       | V-2 / *    | class | UL 94          |
| Thickness tested                            | 1.6 / *    | mm    | -              |
| Burning Behav. at thickness h               | HB / *     | class | UL 94          |
| Thickness tested                            | 0.8 / *    | mm    | -              |
| Oxygen index                                | 26 / *     | %     | ISO 4589-1/-2  |

| Electrical Properties      | dry / cond | Unit  | Test Standard |
|----------------------------|------------|-------|---------------|
| <b>ISO Data</b>            |            |       |               |
| Volume Resistivity         | - / 1E11   | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity        | * / 1E12   | Ohm   | IEC 62631-3-2 |
| Electric Strength          | - / 50     | kV/mm | IEC 60243-1   |
| Comparative tracking index | - / 600    | -     | IEC 60112     |

| Other Properties | dry / cond | Unit | Test Standard  |
|------------------|------------|------|----------------|
| <b>ISO Data</b>  |            |      |                |
| Water Absorption | 3.8 / *    | %    | Sim. to ISO 62 |

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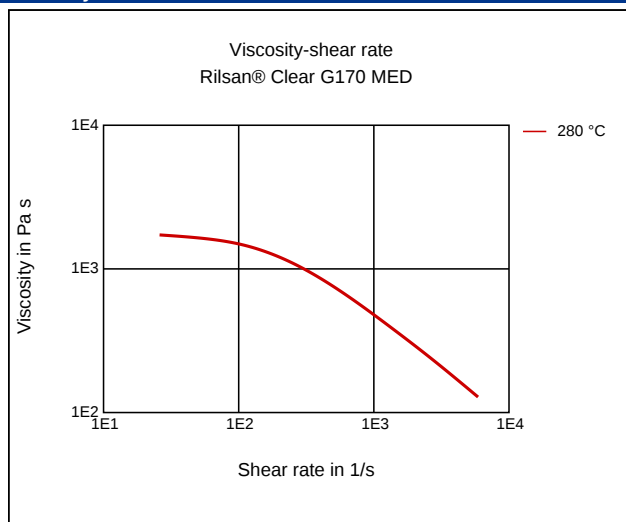
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|                     |             |                   |                |
|---------------------|-------------|-------------------|----------------|
| Humidity absorption | 1.7 / *     | %                 | Sim. to ISO 62 |
| Density             | 1050 / 1050 | kg/m <sup>3</sup> | ISO 1183       |

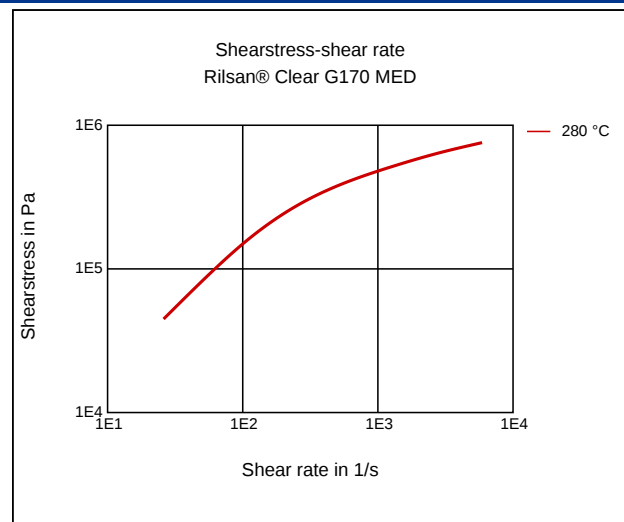
| Processing Recommendation Injection Molding | Value     | Unit | Test Standard |
|---------------------------------------------|-----------|------|---------------|
| Pre-drying - Temperature                    | 90        | °C   | -             |
| Pre-drying - Time                           | 4 - 6     | h    | -             |
| Melt temperature                            | 270 - 310 | °C   | -             |
| Mold temperature                            | 40 - 80   | °C   | -             |

### Diagrams

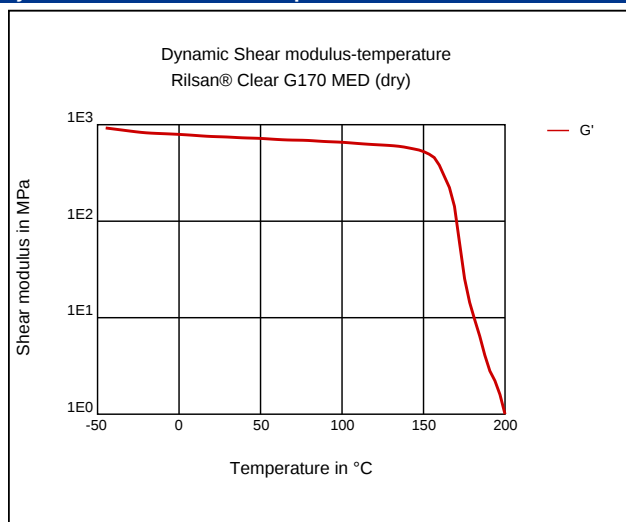
#### Viscosity-shear rate



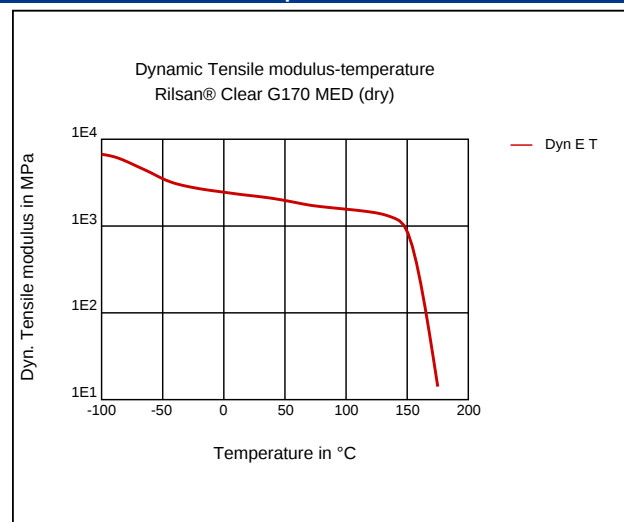
#### Shearstress-shear rate



#### Dynamic Shear modulus-temperature



#### Dynamic Tensile Modulus-temperature

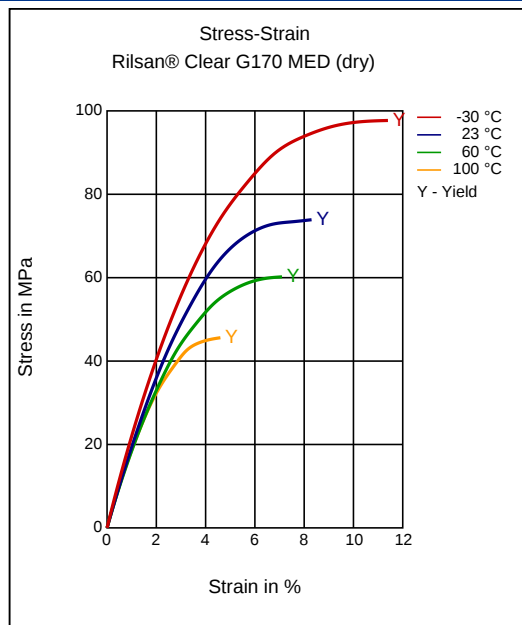


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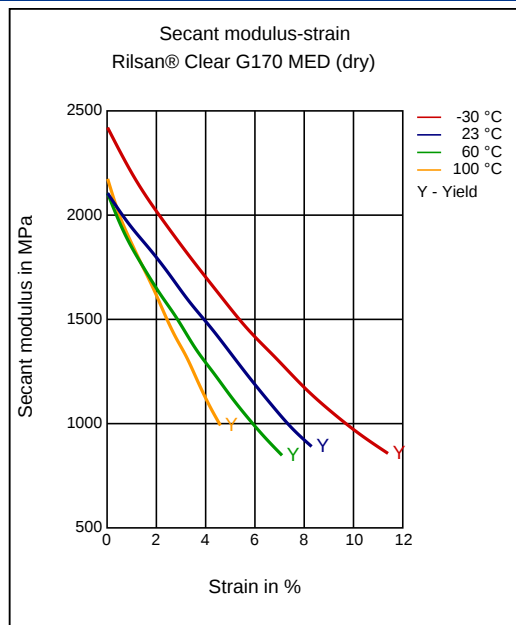
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### Stress-strain



### Secant modulus-strain



### Characteristics

#### Processing

Injection Molding, Other Extrusion

#### Delivery form

Pellets

#### Special Characteristics

Transparent

#### Certifications

Medical, US Pharmacopeia Class VI Approved

### Injection Molding

#### Injection molding conditions:

- Typical melt temperature (Min / Recommended / Max) : 270 °C / 290 °C / 310 °C.
- Typical mold temperature : 40 - 80 °C.
- Drying time and temperature (only for bags opened for more than two hours): 4 - 6 hours at 90 °C.

### Film Extrusion

#### Extrusion conditions:

- Typical melt temperature (Min / Recommended / Max) : 270 °C / 280 °C / 290 °C.
- Drying time and temperature (only for bags opened for more than two hours): 4 - 6 hours at 90 °C.