

# Zytel® LC6210 BK010

## LONG CHAIN POLYAMIDE RESIN

Zytel® LCPA long chain polyamide resins provide an innovative and growing portfolio of flexible polymers with excellent thermal, chemical, and hydrolysis resistance. The diverse selection of Zytel® LCPA grades is targeted for a range of performance characteristics, balancing temperature resistance, flexibility and low permeation.

Zytel® LC6210 BK010 is a toughened polyamide 612 resin for extrusion applications.

### Product information

|                      |                                     |           |
|----------------------|-------------------------------------|-----------|
| Resin Identification | PA612-HI                            | ISO 1043  |
| Part Marking Code    | >PA612-HI<                          | ISO 11469 |
| ISO designation      | ISO 16396-PA612-I,,M1CG1HL1,S18-010 |           |

### Typical mechanical properties

|                                       | dry/cond.   |                   |              |
|---------------------------------------|-------------|-------------------|--------------|
| Tensile Modulus                       | 1100 / 750  | MPa               | ISO 527-1/-2 |
| Yield stress, 50mm/min                | 33 / 29     | MPa               | ISO 527-1/-2 |
| Yield strain, 50mm/min                | 12 / 30     | %                 | ISO 527-1/-2 |
| Nominal strain at break               | >50 / >50   | %                 | ISO 527-1/-2 |
| Strain at break, 50mm/min             | 100 / 280   | %                 | ISO 527-1/-2 |
| Charpy notched impact strength, 23°C  | 35 / 80     | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy notched impact strength, -30°C | 13 / 12     | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Poisson's ratio                       | 0.45 / 0.46 |                   |              |

### Thermal properties

|                                             | dry/cond. |       |                |
|---------------------------------------------|-----------|-------|----------------|
| Melting temperature, 10°C/min               | 216 / *   | °C    | ISO 11357-1/-3 |
| Temp. of deflection under load, 1.8 MPa     | 47 / *    | °C    | ISO 75-1/-2    |
| Temp. of deflection under load, 0.45 MPa    | 83 / *    | °C    | ISO 75-1/-2    |
| Coeff. of linear therm. expansion, parallel | 250 / *   | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal   | 120 / *   | E-6/K | ISO 11359-1/-2 |

### Flammability

|                              |            |                      |
|------------------------------|------------|----------------------|
| FMVSS Class                  | B          | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm | <80 mm/min | ISO 3795 (FMVSS 302) |

### Other properties

|                          | dry/cond. |                   |                |
|--------------------------|-----------|-------------------|----------------|
| Humidity absorption, 2mm | 0.65 / *  | %                 | Sim. to ISO 62 |
| Density                  | 1010 / -  | kg/m <sup>3</sup> | ISO 1183       |

### Extrusion

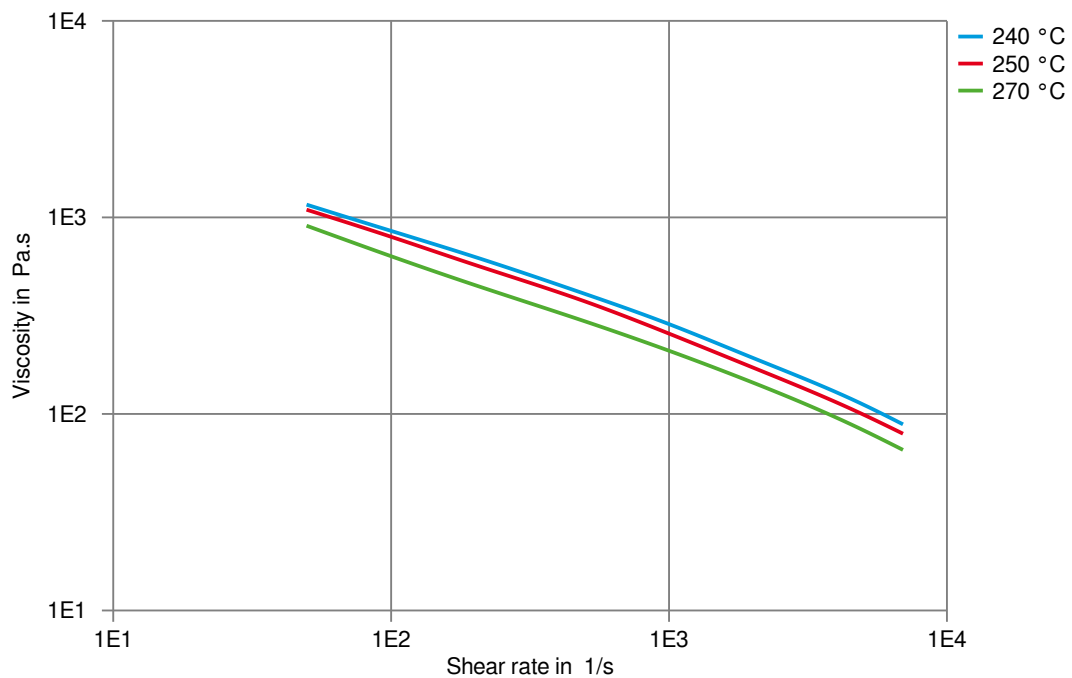
|                                 |              |
|---------------------------------|--------------|
| Drying Temperature              | 75 - 80 °C   |
| Drying Time, Dehumidified Dryer | 3 - 4 h      |
| Processing Moisture Content     | ≤0.06 %      |
| Melt Temperature Optimum        | 240 °C       |
| Melt Temperature Range          | 235 - 250 °C |



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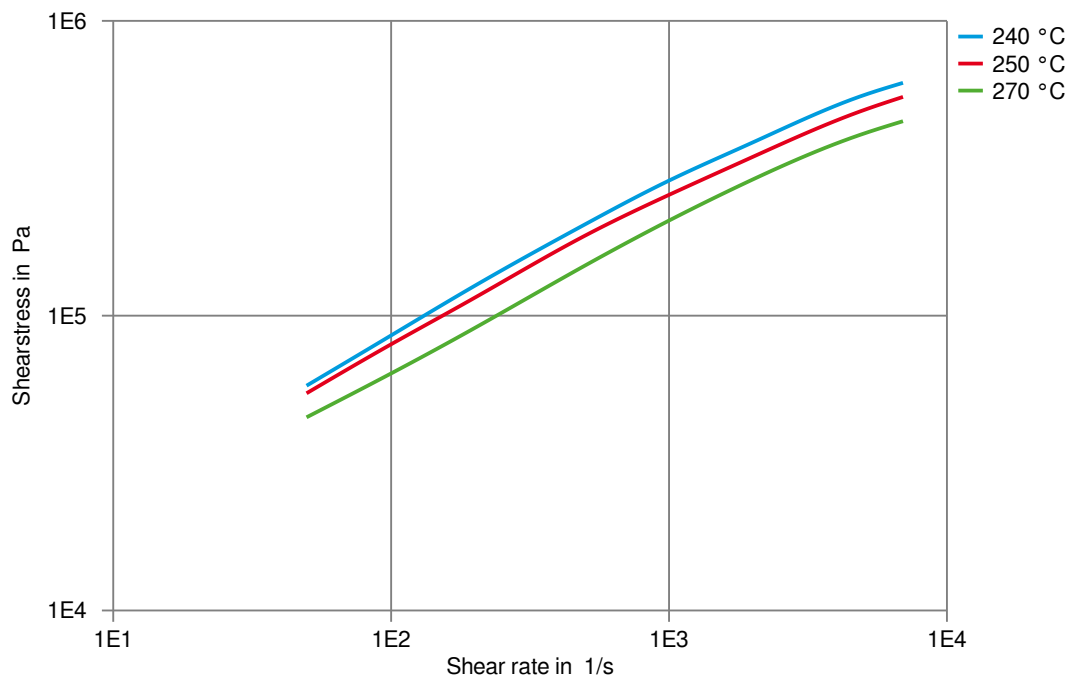
Viscosity-shear rate



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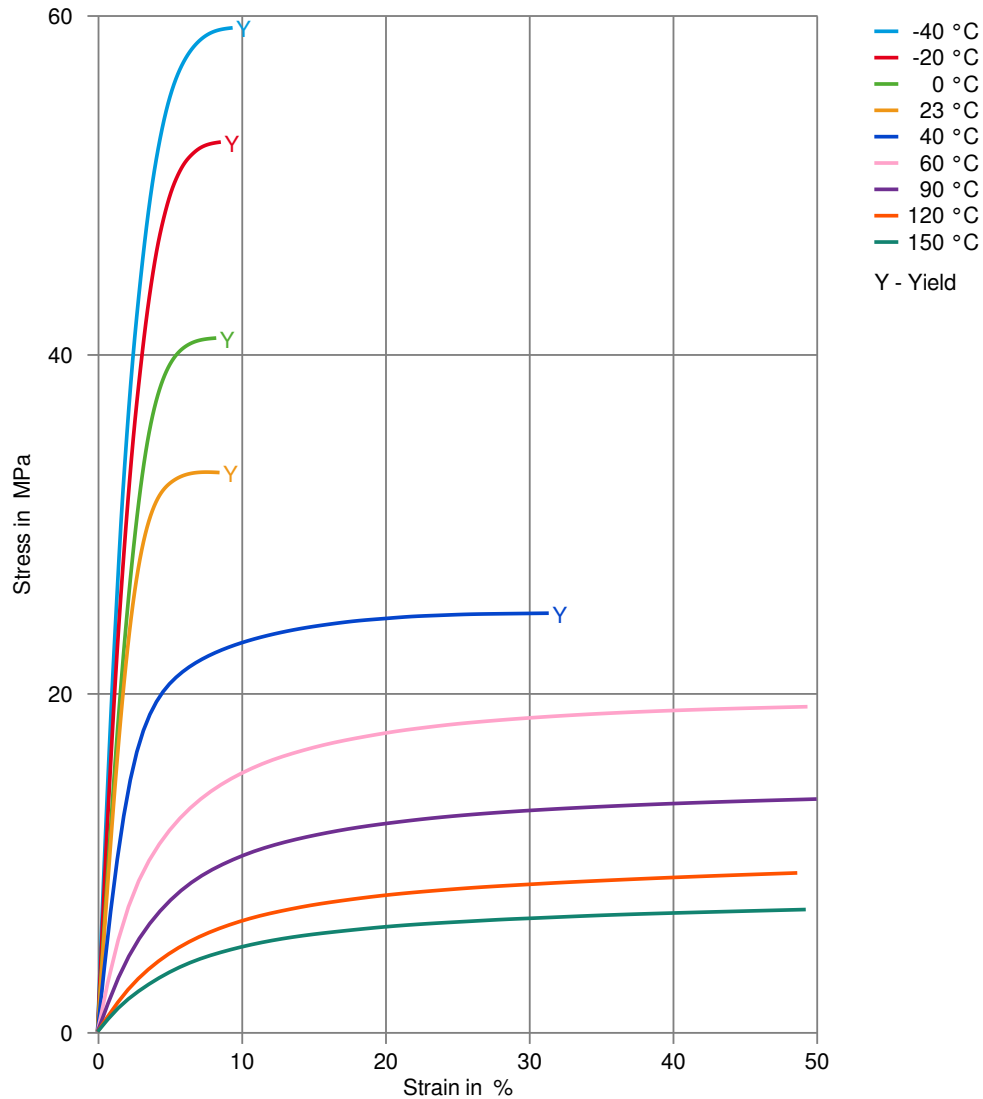
Shearstress-shear rate



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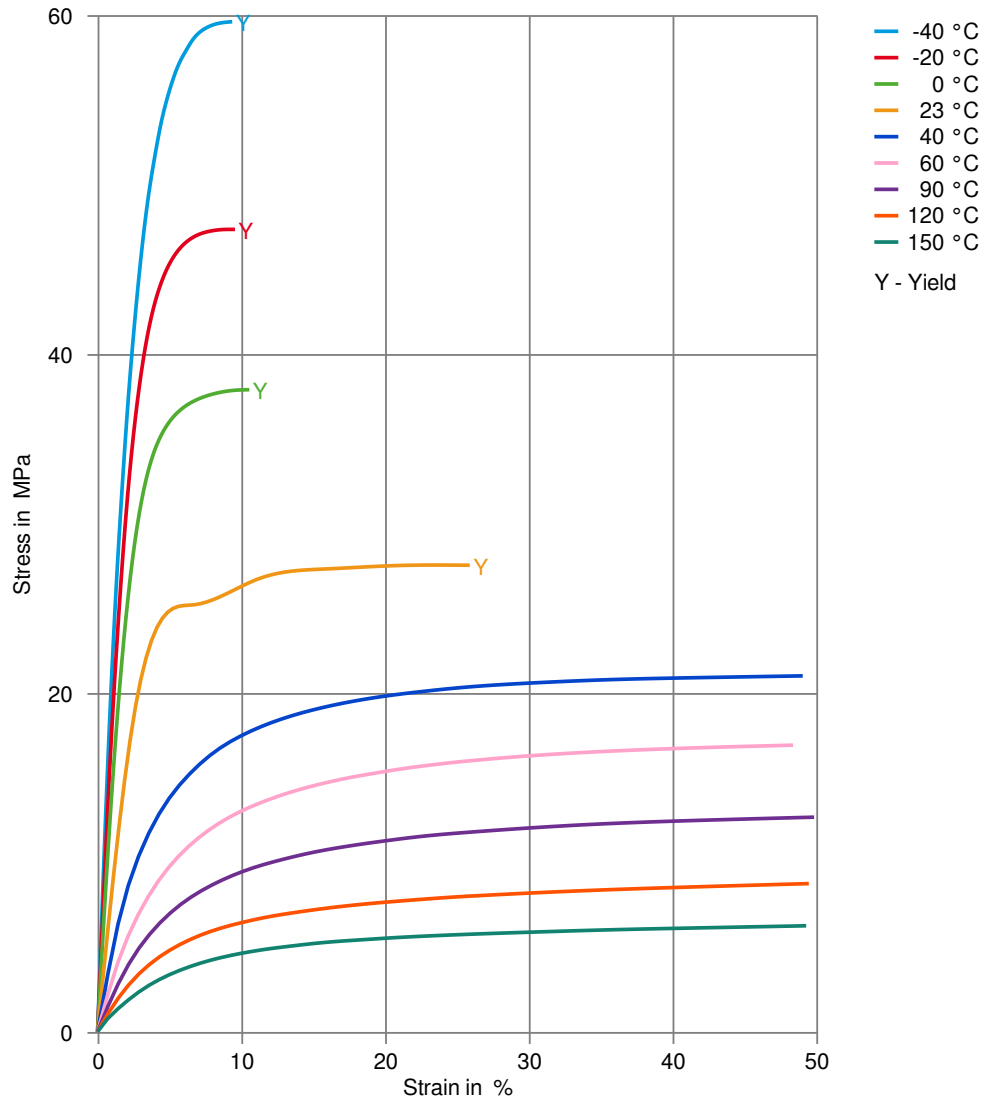
Stress-strain (dry)



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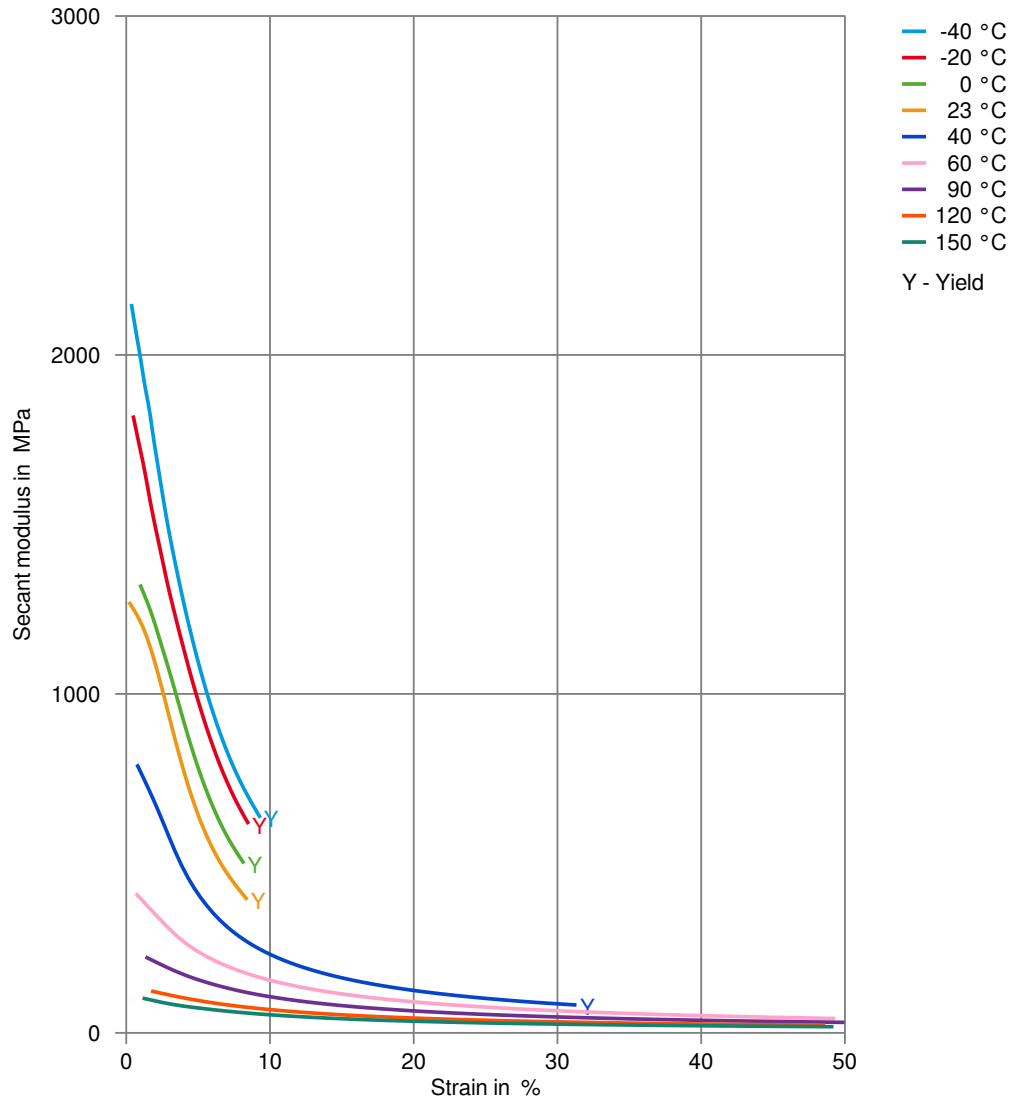
Stress-strain (cond.)



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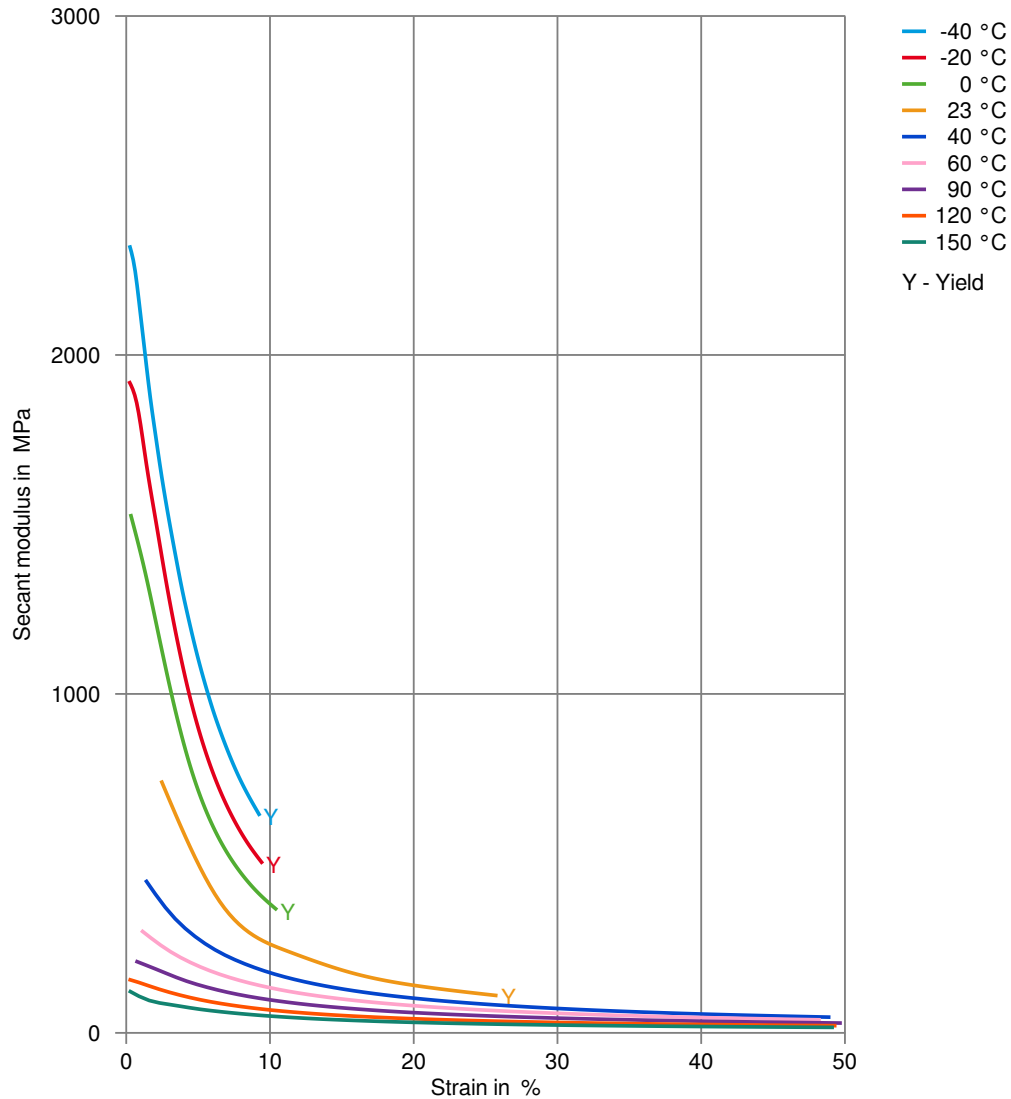
Secant modulus-strain (dry)



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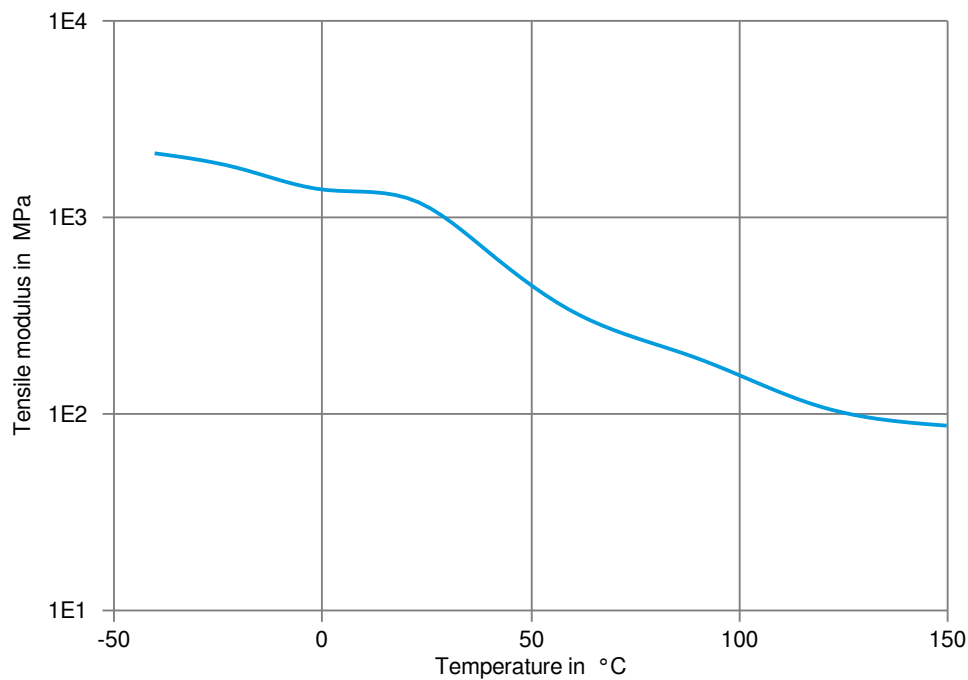
Secant modulus-strain (cond.)



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Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)

