



## Makrolon® 2808

PC

Covestro Deutschland AG

- MVR (300 °C/1.2 kg) 9.0 cm³/10 min
- medical devices
- suitable for ETO and steam sterilization at 121 °C
- biocompatible according to many ISO 10993-1 test requirements
- medium viscosity
- available in transparent and opaque colors

| Rheological properties      | Value | Unit      | Test Standard   |
|-----------------------------|-------|-----------|-----------------|
| <b>ISO Data</b>             |       |           |                 |
| Melt volume-flow rate, MVR  | 9     | cm³/10min | ISO 1133        |
| Temperature                 | 300   | °C        | -               |
| Load                        | 1.2   | kg        | -               |
| Molding shrinkage, parallel | 0.7   | %         | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 0.8   | %         | ISO 294-4, 2577 |

| Mechanical Properties           | Value    | Unit  | Test Standard |
|---------------------------------|----------|-------|---------------|
| <b>ISO Data</b>                 |          |       |               |
| Tensile Modulus                 | 2350     | MPa   | ISO 527       |
| Yield stress                    | 65       | MPa   | ISO 527       |
| Yield strain                    | 6.1      | %     | ISO 527       |
| Nominal strain at break         | >50      | %     | ISO 527       |
| Tensile Creep Modulus, 1h       | 2200     | MPa   | ISO 899-1     |
| Tensile Creep Modulus, 1000h    | 1900     | MPa   | ISO 899-1     |
| Impact Strength (Charpy), +23°C | no break | kJ/m² | ISO 179/1eU   |
| Impact Strength (Charpy), -30°C | no break | kJ/m² | ISO 179/1eU   |
| Puncture - maximum force, +23°C | 5400     | N     | ISO 6603-2    |
| Puncture - maximum force, -30°C | 6300     | N     | ISO 6603-2    |
| Puncture energy, +23°C          | 60       | J     | ISO 6603-2    |
| Puncture energy, -30°C          | 65       | J     | ISO 6603-2    |

| Thermal Properties                          | Value | Unit  | Test Standard  |
|---------------------------------------------|-------|-------|----------------|
| <b>ISO Data</b>                             |       |       |                |
| Glass Transition Temperature (10°C/min)     | 148   | °C    | ISO 11357-1/-2 |
| Temp. of deflection under load (1.80 MPa)   | 128   | °C    | ISO 75-1/-2    |
| Temp. of deflection under load (0.45 MPa)   | 140   | °C    | ISO 75-1/-2    |
| Vicat softening temperature, 50°C/h 50N     | 147   | °C    | ISO 306        |
| Coeff. of Linear Therm. Expansion, parallel | 65    | E-6/K | ISO 11359-1/-2 |
| Coeff. of Linear Therm. Expansion, normal   | 65    | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at thickness h               | V-2   | class | UL 94          |
| Thickness tested                            | 0.8   | mm    | -              |
| UL recognition                              | yes   | -     | -              |
| Oxygen index                                | 28    | %     | ISO 4589-1/-2  |

| Electrical Properties        | Value | Unit  | Test Standard |
|------------------------------|-------|-------|---------------|
| <b>ISO Data</b>              |       |       |               |
| Relative permittivity, 100Hz | 3.1   | -     | IEC 62631-2-1 |
| Relative permittivity, 1MHz  | 3     | -     | IEC 62631-2-1 |
| Dissipation Factor, 100Hz    | 5     | E-4   | IEC 62631-2-1 |
| Dissipation Factor, 1MHz     | 95    | E-4   | IEC 62631-2-1 |
| Volume Resistivity           | >1E13 | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity          | >1E15 | Ohm   | IEC 62631-3-2 |
| Electric Strength            | 34    | kV/mm | IEC 60243-1   |
| Comparative tracking index   | 250   | -     | IEC 60112     |

| Other Properties    | Value | Unit  | Test Standard  |
|---------------------|-------|-------|----------------|
| <b>ISO Data</b>     |       |       |                |
| Water Absorption    | 0.3   | %     | Sim. to ISO 62 |
| Humidity absorption | 0.12  | %     | Sim. to ISO 62 |
| Density             | 1200  | kg/m³ | ISO 1183       |

## Makrolon® 2808

### PC

Covestro Deutschland AG

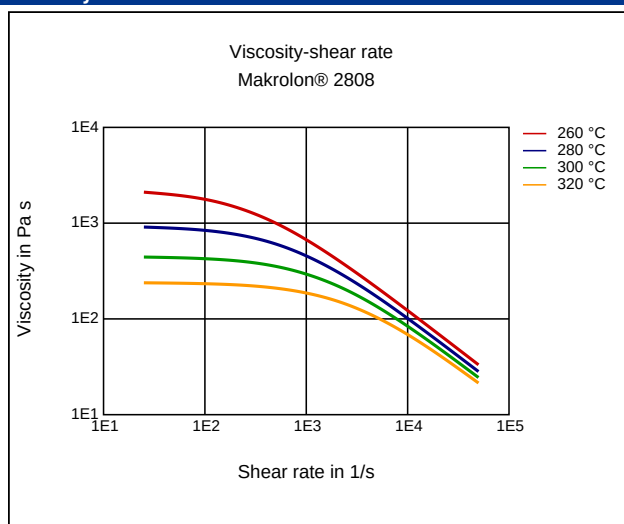
| Material Specific Properties | Value | Unit | Test Standard   |
|------------------------------|-------|------|-----------------|
| <b>ISO Data</b>              |       |      |                 |
| Luminous transmittance       | 89    | %    | ISO 13468-1, -2 |

| Rheological calculation properties | Value | Unit     | Test Standard |
|------------------------------------|-------|----------|---------------|
| <b>ISO Data</b>                    |       |          |               |
| Density of melt                    | 1020  | kg/m³    | -             |
| Thermal Conductivity of Melt       | 0.214 | W/(m K)  | -             |
| Spec. heat capacity of melt        | 2100  | J/(kg K) | -             |
| Eff. thermal diffusivity           | 1E-7  | m²/s     | -             |
| Ejection temperature               | 130   | °C       | -             |

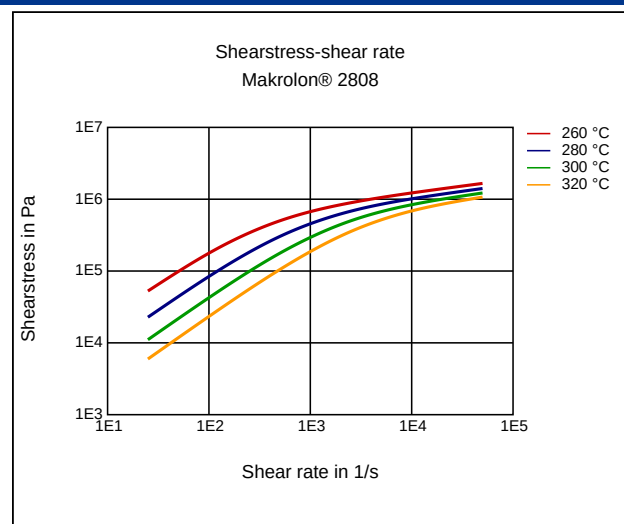
| Test specimen production              | Value | Unit | Test Standard |
|---------------------------------------|-------|------|---------------|
| <b>ISO Data</b>                       |       |      |               |
| Injection Molding, melt temperature   | 300   | °C   | ISO 294       |
| Injection Molding, mold temperature   | 80    | °C   | ISO 294       |
| Injection Molding, injection velocity | 200   | mm/s | ISO 294       |

## Diagrams

### Viscosity-shear rate



### Shearstress-shear rate

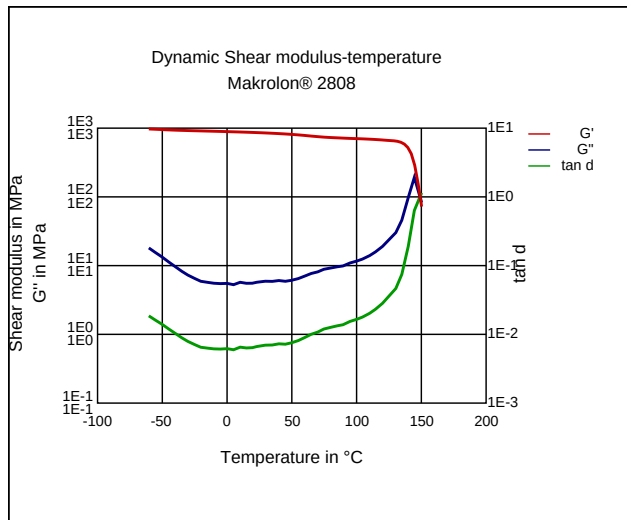


# Makrolon® 2808

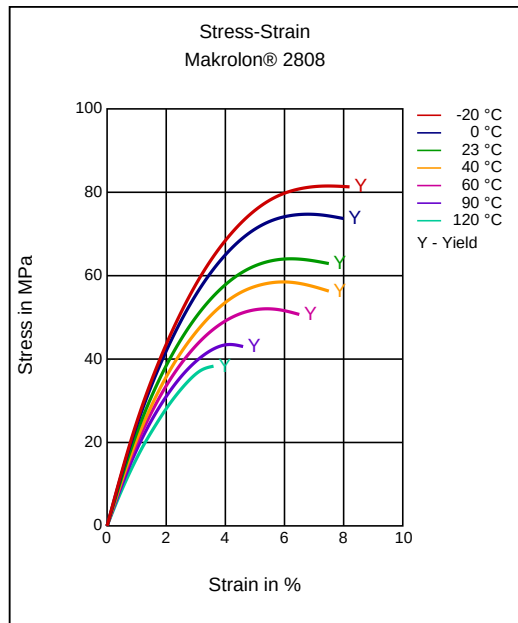
## PC

Covestro Deutschland AG

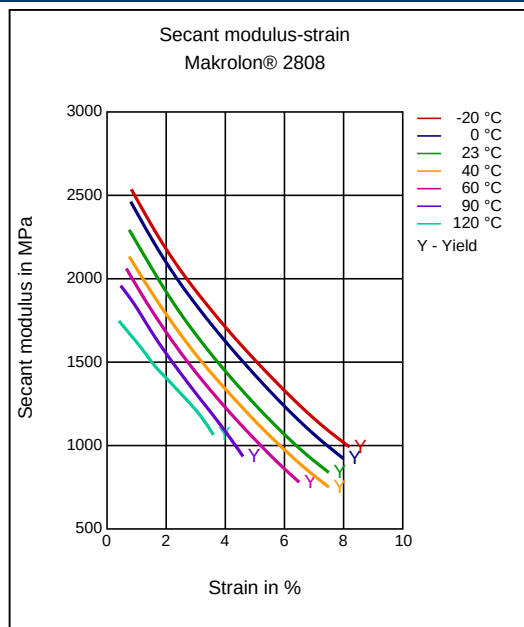
### Dynamic Shear modulus-temperature



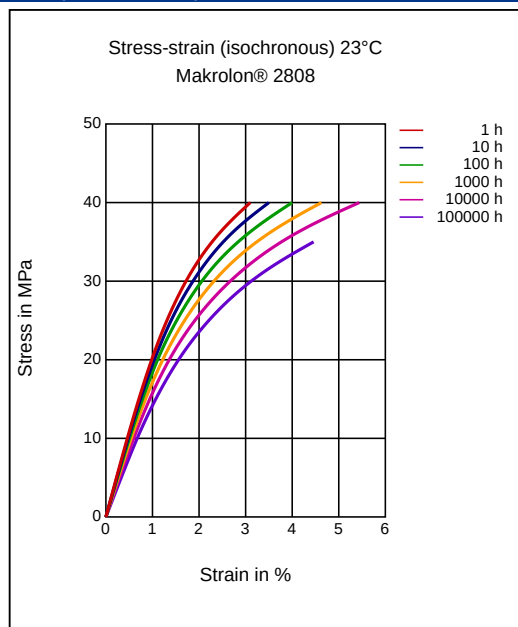
### Stress-strain



### Secant modulus-strain



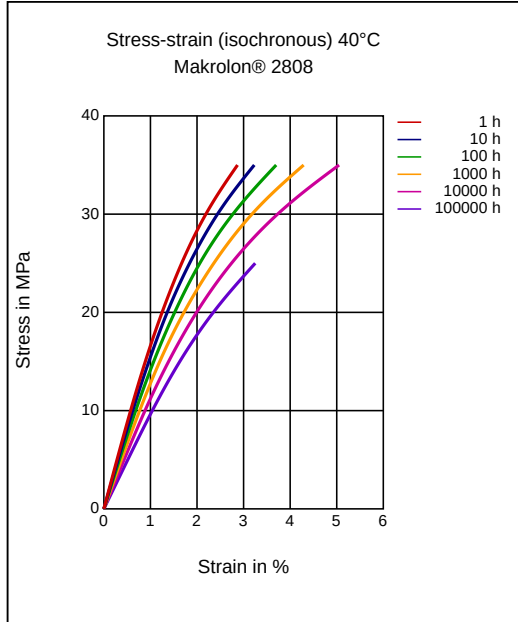
### Stress-strain (isochronous) 23 °C



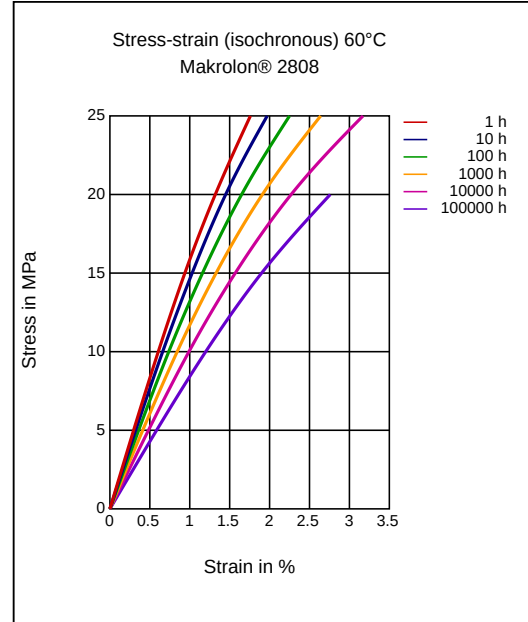
**Makrolon® 2808**  
PC

Covestro Deutschland AG

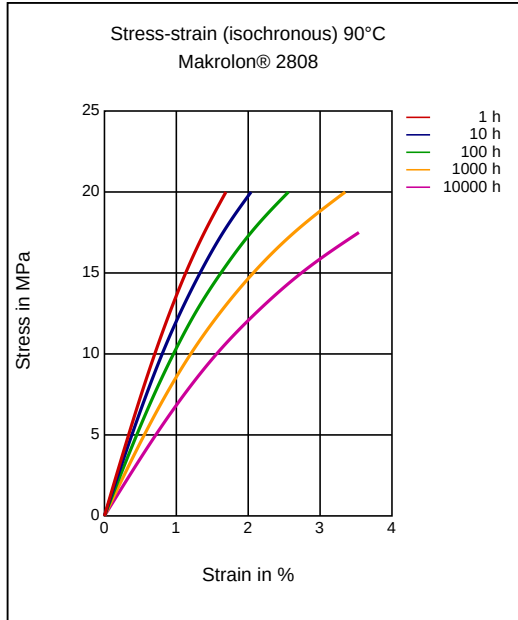
**Stress-strain (isochronous) 40 °C**



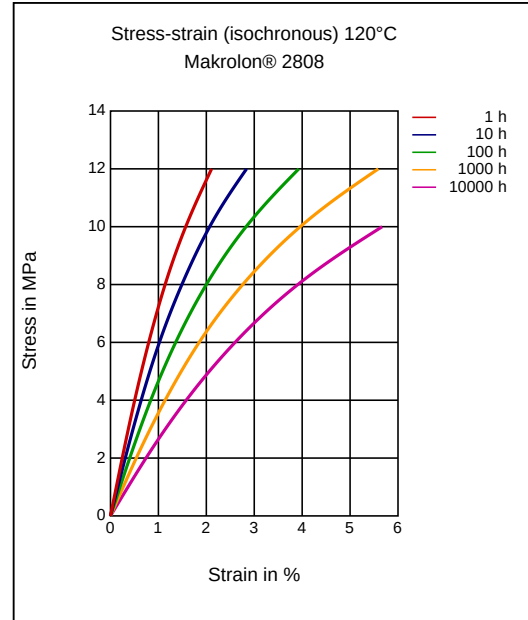
**Stress-strain (isochronous) 60 °C**



**Stress-strain (isochronous) 90 °C**



**Stress-strain (isochronous) 120 °C**

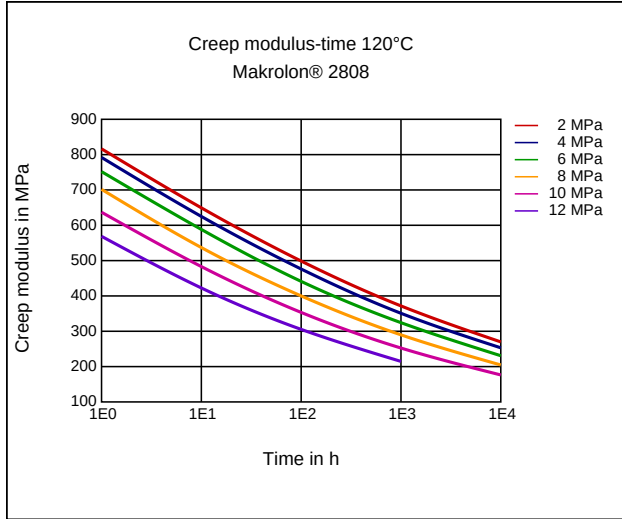


## Makrolon® 2808

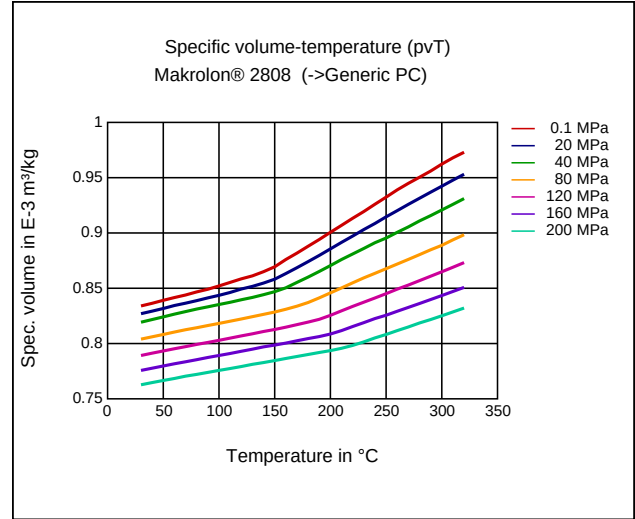
### PC

Covestro Deutschland AG

#### Creep modulus-time 120 °C



#### Specific volume-temperature (pvT)



#### Characteristics

##### Processing

Injection Molding

##### Delivery form

Pellets

##### Special Characteristics

Transparent, Opaque, Sterilizable, Ethylene Oxide (EtO)  
Sterilization, Steam sterilization

##### Certifications

Medical, Biocompatibility ISO 10993

##### Applications

Medical