

**HOSTAFORM® C 9021 TF - POM**
**Description**

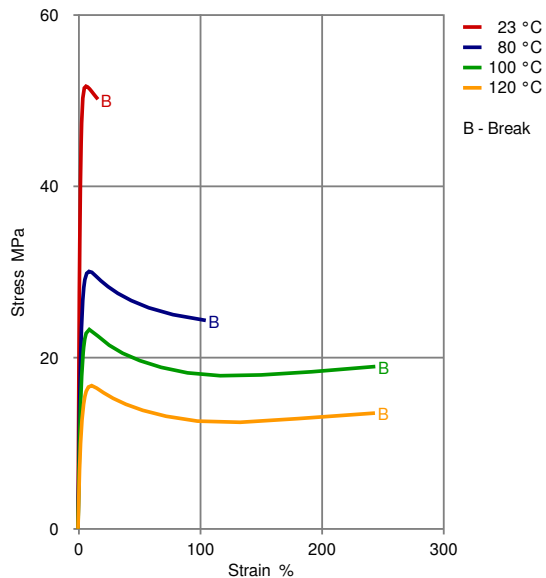
Injection molding type like C 9021, with PTFE modified

Chemical abbreviation according to ISO 1043-1: POM Molding compound ISO 29988- POM-K, M-GNS, 02-002 POM copolymer Injection molding type, modified with PTFE; good chemical resistance to solvents, fuel and strong alkalis as well as good hydrolysis resistance; high resistance to thermal and oxidative degradation; for sliding combinations with very low coefficient of friction. UL-registration in natural and a thickness more than 1.57 mm as UL 94 HB, temperature index UL 746 B electrical 105 °C, mechanical 95 °C (tensile impact) and 100 °C (tensile). Burning rate ISO 3795 and FMVSS 302 < 100 mm/min for a thickness more than 1 mm. Ranges of applications: For sliding combinations with very low coefficient of friction. FMVSS = Federal Motor Vehicle Safety Standard (USA) UL = Underwriters Laboratories (USA)

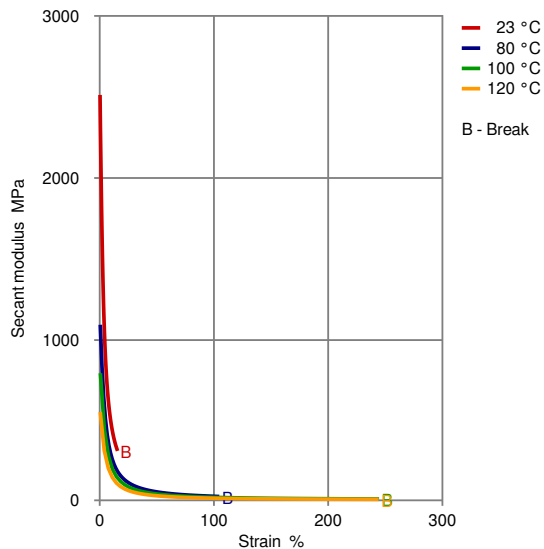
| <b>Physical properties</b>                 | <b>Value</b> | <b>Unit</b>            | <b>Test Standard</b> |
|--|--------------|------------------------|----------------------|
| Density                                    | 1510         | kg/m <sup>3</sup>      | ISO 1183             |
| Melt volume rate, MVR                      | 6            | cm <sup>3</sup> /10min | ISO 1133             |
| MVR temperature                            | 190          | °C                     | ISO 1133             |
| MVR load                                   | 2.16         | kg                     | ISO 1133             |
| Molding shrinkage, parallel (flow)         | 2.0          | %                      | ISO 294-4, 2577      |
| Molding shrinkage, transverse normal       | 1.7          | %                      | ISO 294-4, 2577      |
| Water absorption, 23 °C-sat                | 0.65         | %                      | Sim. to ISO 62       |
| Humidity absorption, 23 °C/50%RH           | 0.2          | %                      | ISO 62               |
| <b>Mechanical properties</b>               | <b>Value</b> | <b>Unit</b>            | <b>Test Standard</b> |
| Tensile modulus                            | 2500         | MPa                    | ISO 527-1, -2        |
| Tensile stress at yield, 50mm/min          | 48           | MPa                    | ISO 527-1, -2        |
| Tensile strain at yield, 50mm/min          | 7            | %                      | ISO 527-1, -2        |
| Tensile nominal strain at break, 50mm/min  | 16           | %                      | ISO 527-1, -2        |
| Tensile creep modulus, 1h                  | 2100         | MPa                    | ISO 899-1            |
| Tensile creep modulus, 1000h               | 1200         | MPa                    | ISO 899-1            |
| Flexural modulus, 23 °C                    | 2400         | MPa                    | ISO 178              |
| Charpy impact strength, 23 °C              | 60           | kJ/m <sup>2</sup>      | ISO 179/1eU          |
| Charpy impact strength, -30 °C             | 60           | kJ/m <sup>2</sup>      | ISO 179/1eU          |
| Charpy notched impact strength, 23 °C      | 4            | kJ/m <sup>2</sup>      | ISO 179/1eA          |
| Charpy notched impact strength, -30 °C     | 4            | kJ/m <sup>2</sup>      | ISO 179/1eA          |
| Ball indentation hardness, 30s             | 120          | MPa                    | ISO 2039-1           |
| <b>Thermal properties</b>                  | <b>Value</b> | <b>Unit</b>            | <b>Test Standard</b> |
| Melting temperature, 10 °C/min             | 166          | °C                     | ISO 11357-1/-3       |
| DTUL at 1.8 MPa                            | 98           | °C                     | ISO 75-1, -2         |
| Coeff. of linear therm expansion, parallel | 1.1          | E-4/°C                 | ISO 11359-2          |
| Flammability @1.6mm nom. thickn.           | HB           | class                  | UL 94                |
| thickness tested (1.6)                     | 1.6          | mm                     | UL 94                |
| Flammability at thickness h                | HB           | class                  | UL 94                |
| thickness tested (h)                       | 3.18         | mm                     | UL 94                |
| UL recognition (h)                         | UL           | -                      | UL 94                |
| <b>Electrical properties</b>               | <b>Value</b> | <b>Unit</b>            | <b>Test Standard</b> |
| Dielectric constant (Dk), 100Hz            | 3.7          | -                      | IEC 60250            |
| Dielectric constant (Dk), 1MHz             | 3.7          | -                      | IEC 60250            |
| Dissipation factor, 100Hz                  | 20           | E-4                    | IEC 60250            |
| Dissipation factor, 1MHz                   | 80           | E-4                    | IEC 60250            |
| Volume resistivity, 23 °C                  | 1E12         | Ohm*m                  | IEC 62631-3-1        |
| Surface resistivity, 23 °C                 | 1E14         | Ohm                    | IEC 62631-3-2        |
| Electric strength, 23 °C (AC)              | 33           | kV/mm                  | IEC 60243-1          |
| Comparative tracking index                 | PLC 0        | -                      | UL 746               |

Diagrams

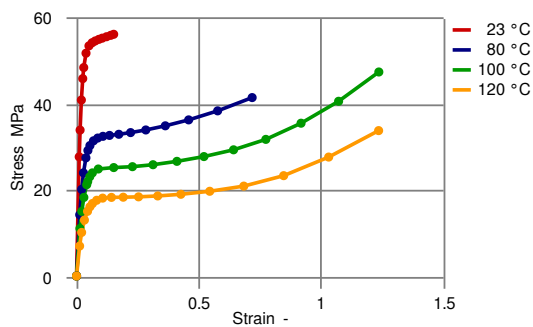
Stress-strain



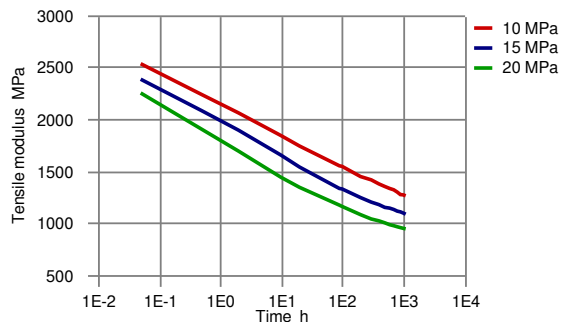
Secant modulus-strain



True Stress-strain

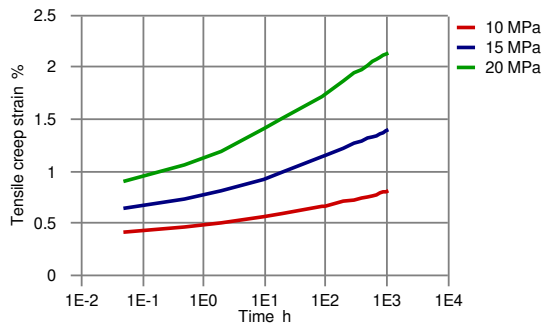


Creep modulus-time 23 °C



23 °C yield at 0.06374 strain, 54.087 stress  
 80 °C yield at 0.03840 strain, 27.404 stress  
 100 °C yield at 0.04163 strain, 21.181 stress  
 120 °C yield at 0.04499 strain, 15.006 stress  
 Poisson's ratio used is 0.37

**Creep strain-time 23°C**



**Typical injection moulding processing conditions**

| <b>Pre Drying</b>                               | <b>Value</b> | <b>Unit</b> |
|---|--------------|-------------|
| Necessary low maximum residual moisture content | 0.15         | %           |
| Drying time                                     | 3 - 4        | h           |
| Drying temperature                              | 100 - 120    | °C          |
| <b>Temperature</b>                              | <b>Value</b> | <b>Unit</b> |
| Hopper temperature                              | 20 - 30      | °C          |
| Feeding zone temperature                        | 60 - 80      | °C          |
| Zone1 temperature                               | 170 - 180    | °C          |
| Zone2 temperature                               | 180 - 190    | °C          |
| Zone3 temperature                               | 190 - 200    | °C          |
| Zone4 temperature                               | 190 - 210    | °C          |
| Nozzle temperature                              | 190 - 210    | °C          |
| Melt temperature                                | 190 - 200    | °C          |
| Mold temperature                                | 80 - 120     | °C          |
| Hot runner temperature                          | 190 - 210    | °C          |
| <b>Pressure</b>                                 | <b>Value</b> | <b>Unit</b> |
| Back pressure max.                              | 20           | bar         |
| <b>Speed</b>                                    | <b>Value</b> |             |
| Injection speed                                 | slow         |             |
| <b>Screw Speed</b>                              | <b>Value</b> | <b>Unit</b> |
| Screw speed diameter, 25mm                      | 150          | RPM         |
| Screw speed diameter, 40mm                      | 100          | RPM         |
| Screw speed diameter, 55mm                      | 70           | RPM         |

**Other text information**

**Pre-drying**

Drying is not normally required. If material has come in contact with moisture through improper storage or handling or through regrind use, drying may be necessary to prevent splay and odor problems.

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### Longer pre-drying times/storage

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The product can then be stored in standard conditions until processed.

### Injection molding

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Standard injection moulding machines with three phase (15 to 25 D) plasticating screws will fit.

### Injection Molding Preprocessing

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General drying is not necessary due to low moisture absorption of the resin.

In case of bad storage conditions (water contact or condensed water) the use of a recirculating air dryer (100 to 120 °C / max. 40 mm layer / 3 to 6 hours) is recommended.

Max. Water content 0,2 %

### Injection Molding Postprocessing

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Conditioning e.g. moisturizing is not necessary.

### Characteristics

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|                                |  |
|--------------------------------|--|
| <b>Special Characteristics</b> | Auto spec approved, Chemical resistant, Fuel resistant, Hydrolysis resistant |
| <b>Product Categories</b>      | Tribological   |
| <b>Processing</b>              | Injection molding, Other extrusion   |
| <b>Regulatory</b>              | Drinking water approved, FDA food contact compliant                          |
| <b>Delivery Form</b>           | Pellets  |
| <b>Additives</b>               | Lubricants, Release agent  |

### Other Approvals

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| OEM                           | Specification   | Additional Information |
|-------------------------------|-----------------|------------------------|
| BMW                           | GS 93016        |                        |
| Bosch                         | N28 BN22-X017   | Natural                |
| Continental                   | TST N 055 54.18 |                        |
| Mercedes-Benz Group (Daimler) | DBL 5410        | (5410.00)              |
| GM                            | GMW22P-POM-C2S  | Natural & Black        |
| Nissan                        | POM(0xx)-Ixx-1  |                        |
| SAIC Motor                    | SMTC 5 310 020  |                        |

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**General Disclaimer**

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