

## HOSTAFORM® C 9021 TF | POM | Tribological

### Description

Chemical abbreviation according to ISO 1043-1: POM  
Molding compound ISO 9988- 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)

| Physical properties         | Value       | Unit                   | Test Standard |
|-----------------------------|-------------|------------------------|---------------|
| Density                     | <b>1510</b> | kg/m <sup>3</sup>      | ISO 1183      |
| Melt volume rate (MVR)      | <b>6</b>    | cm <sup>3</sup> /10min | ISO 1133      |
| MVR test temperature        | <b>190</b>  | °C                     | ISO 1133      |
| MVR test load               | <b>2.16</b> | kg                     | ISO 1133      |
| Mold shrinkage - parallel   | <b>2</b>    | %                      | ISO 294-4     |
| Mold shrinkage - normal     | <b>1.7</b>  | %                      | ISO 294-4     |
| Water absorption (23°C-sat) | <b>0.65</b> | %                      | ISO 62        |

| Mechanical properties                  | Value       | Unit              | Test Standard |
|--|-------------|-------------------|---------------|
| Tensile modulus (1mm/min)              | <b>2500</b> | MPa               | ISO 527-2/1A  |
| Tensile stress at yield (50mm/min)     | <b>48</b>   | MPa               | ISO 527-2/1A  |
| Tensile strain at yield (50mm/min)     | <b>7</b>    | %                 | ISO 527-2/1A  |
| Nominal strain at break (50mm/min)     | <b>16</b>   | %                 | ISO 527-2/1A  |
| Tensile creep modulus (1h)             | <b>2100</b> | MPa               | ISO 899-1     |
| Tensile creep modulus (1000h)          | <b>1200</b> | MPa               | ISO 899-1     |
| Flexural modulus (23°C)                | <b>2400</b> | MPa               | ISO 178       |
| Charpy impact strength @ 23°C          | <b>60</b>   | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Charpy impact strength @ -30°C         | <b>60</b>   | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Charpy notched impact strength @ 23°C  | <b>4</b>    | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Charpy notched impact strength @ -30°C | <b>4</b>    | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Ball indentation hardness 30 sec value | <b>120</b>  | N/mm <sup>2</sup> | ISO 2039-1    |

| Thermal properties                           | Value      | Unit | Test Standard     |
|--|------------|------|-------------------|
| Melting temperature (10°C/min)               | <b>166</b> | °C   | ISO 11357-1,-2,-3 |
| DTUL @ 1.8 MPa                               | <b>98</b>  | °C   | ISO 75-1/-2       |
| Vicat softening temperature B50 (50°C/h 50N) | <b>145</b> | °C   | ISO 306           |

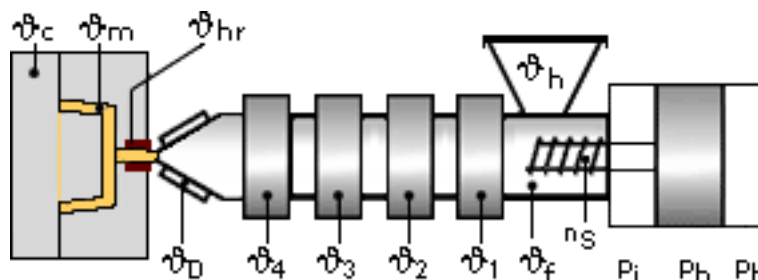
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| Thermal properties                           | Value | Unit   | Test Standard |
|--|-------|--------|---------------|
| Coeff. of linear therm. expansion (parallel) | 1.1   | E-4/°C | ISO 11359-2   |
| Flammability @ 1.6mm nom. thckn.             | HB    | class  | UL94          |
| thickness tested (1.6)                       | 1.57  | mm     | UL94          |
| UL recognition (1.6)                         | UL    | -      | UL94          |
| Flammability at thickness h                  | HB    | class  | UL94          |
| thickness tested (h)                         | 3.18  | mm     | UL94          |
| UL recognition (h)                           | UL    | -      | UL94          |

| Electrical properties          | Value | Unit  | Test Standard |
|--------------------------------|-------|-------|---------------|
| Relative permittivity - 100 Hz | 3.7   | -     | IEC 60250     |
| Relative permittivity - 1 MHz  | 3.7   | -     | IEC 60250     |
| Dissipation factor - 100 Hz    | 20    | E-4   | IEC 60250     |
| Dissipation factor - 1 MHz     | 80    | E-4   | IEC 60250     |
| Volume resistivity             | 1E12  | Ohm*m | IEC 60093     |
| Surface resistivity            | 1E14  | Ohm   | IEC 60093     |
| Electric strength              | 33    | kV/mm | IEC 60243-1   |
| Comparative tracking index CTI | 600   | -     | IEC 60112     |

| Test specimen production       | Value | Unit | Test Standard |
|--------------------------------|-------|------|---------------|
| Processing conditions acc. ISO | 9988  | -    | Internal      |

### Typical injection moulding processing conditions



#### Pre Drying:

#### Necessary low maximum residual moisture content: 0.15%

It is normally not necessary to dry HOSTAFORM. However, should there be surface moisture (condensate) on the molding compound as a result of incorrect storage, drying is required. A circulating air drying cabinet can be used for this purpose. The product can then be stored in standard conditions until processed.

**Drying time: 3 - 4 h**

**Drying temperature: 100 - 120 °C**

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### Temperature:

|          | ϑ <sub>Manifold</sub> | ϑ <sub>Mold</sub> | ϑ <sub>Melt</sub> | ϑ <sub>Nozzle</sub> | ϑ <sub>Zone4</sub> | ϑ <sub>Zone3</sub> | ϑ <sub>Zone2</sub> | ϑ <sub>Zone1</sub> | ϑ <sub>Feed</sub> | ϑ <sub>Hopper</sub> |
|----------|-----------------------|-------------------|-------------------|---------------------|--------------------|--------------------|--------------------|--------------------|-------------------|---------------------|
| min (°C) | 190                   | 80                | 190               | 190                 | 190                | 190                | 180                | 170                | 60                | 20                  |
| max (°C) | 210                   | 120               | 210               | 210                 | 210                | 200                | 190                | 180                | 80                | 30                  |

### Pressure:

|           | Inj press | Hold press | Back pressure |
|-----------|-----------|------------|---------------|
| min (bar) | 600       | 600        | 0             |
| max (bar) | 1200      | 1200       | 20            |

### Speed:

#### Injection speed: slow

#### Screw speed

|                     |    |     |     |    |    |
|---------------------|----|-----|-----|----|----|
| Screw diameter (mm) | 16 | 25  | 40  | 55 | 75 |
| Screw speed (RPM)   | -  | 150 | 100 | 70 | -  |

## Injection Molding

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

Melt temperature 190-230 °C  
Mould temperature 60-120 °C

## Contact Information

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### General Disclaimer

**NOTICE TO USERS:** Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values.

Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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