

## HOSTAFORM® C 9021 - POM

### Description

Chemical abbreviation according to ISO 1043-1: POM Molding compound ISO 9988- POM-K, M-GNR, 03-002 POM copolymer Standard-Injection molding type with high rigidity, hardness and toughness; good chemical resistance to solvents, fuel and strong alkalis as well as good hydrolysis resistance; high resistance to thermal and oxidative degradation. Monomers and additives are listed in EU-Regulation (EU) 10/2011 FDA compliant according to 21 CFR 177.2470 UL-registration for all colours and a thickness more than 1.5 mm as UL 94 HB, temperature index UL 746 B electrical 110 °C, mechanical 90 °C. Burning rate ISO 3795 and FMVSS 302 < 75 mm/min for a thickness more than 1 mm. Ranges of applications: automotive engineering, precision engineering, electric and electronical industry, domestic appliances. FDA = Food and Drug Administration (USA) FMVSS = Federal Motor Vehicle Safety Standard (USA) UL = Underwriters Laboratories (USA)

Physical properties	Value	Unit	Test Standard
Density	1410	kg/m <sup>3</sup>	ISO 1183
Melt volume rate, MVR	8	cm <sup>3</sup> /10min	ISO 1133
MVR temperature	190	°C	ISO 1133
MVR load	2,16	kg	ISO 1133
Molding shrinkage, parallel	2,0	%	ISO 294-4, 2577
Molding shrinkage, normal	1,9	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0,65	%	ISO 62
Humidity absorption, 23°C/50%RH	0,2	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	2850	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	64	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	9	%	ISO 527-2/1A
Tensile nominal strain at break, 50mm/min	30	%	ISO 527-2/1A
Tensile creep modulus, 1h	2500	MPa	ISO 899-1
Tensile creep modulus, 1000h	1300	MPa	ISO 899-1
Flexural modulus, 23°C	2700	MPa	ISO 178
Charpy impact strength, 23°C	220 <sup>[P]</sup>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	220	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	6,5	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	6	kJ/m <sup>2</sup>	ISO 179/1eA
Compressive stress at 1% strain	24	MPa	ISO 604
Compressive stress at 6% strain	86	MPa	ISO 604
Ball indentation hardness, 30s	144	MPa	ISO 2039-1

P: Partial Break

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	166	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	104	°C	ISO 75-1, -2
DTUL at 0.45 MPa	160	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 50N	150	°C	ISO 306
Coeff. of linear therm expansion, parallel	1,1	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	1,1	E-4/°C	ISO 11359-2
Flammability @1.6mm nom. thickn.	HB	class	UL 94
thickness tested (1.6)	1,5	mm	UL 94
UL recognition (1.6)	UL	-	UL 94
Flammability at thickness h	HB	class	UL 94
thickness tested (h)	3,00	mm	UL 94
UL recognition (h)	UL	-	UL 94

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 100Hz	4	-	IEC 60250
Relative permittivity, 1MHz	4	-	IEC 60250
Dissipation factor, 100Hz	20	E-4	IEC 60250
Dissipation factor, 1MHz	50	E-4	IEC 60250
Volume resistivity	1E12	Ohm*m	IEC 60093
Surface resistivity	1E14	Ohm	IEC 60093
Electric strength	35	kV/mm	IEC 60243-1
Comparative tracking index	600	-	IEC 60112

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## Test specimen production

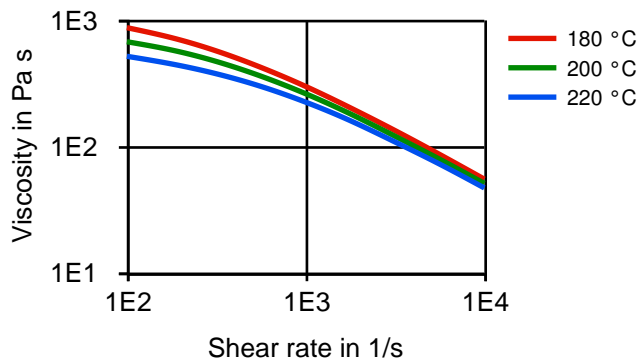
	Value	Unit	Test Standard
Processing conditions acc. ISO	9988	-	Internal
Injection Molding, melt temperature	205	°C	ISO 294
Injection Molding, mold temperature	90	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294
Injection Molding, pressure at hold	90	MPa	ISO 294

## Rheological calculation properties

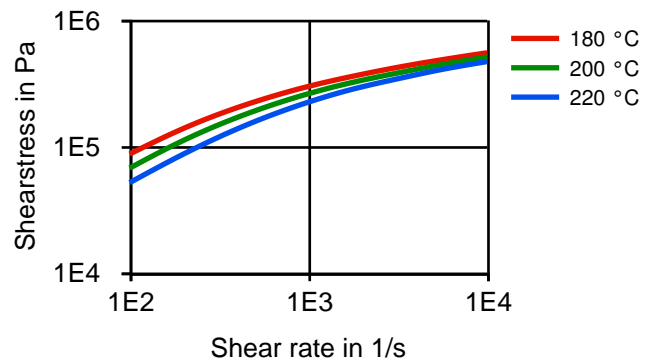
	Value	Unit	Test Standard
Density of melt	1200	kg/m <sup>3</sup>	Internal
Thermal conductivity of melt	0,155	W/(m K)	Internal
Spec. heat capacity melt	2210	J/(kg K)	Internal
Eff. thermal diffusivity	4,85E-8	m <sup>2</sup> /s	Internal
Ejection temperature	140	°C	Internal

## Diagrams

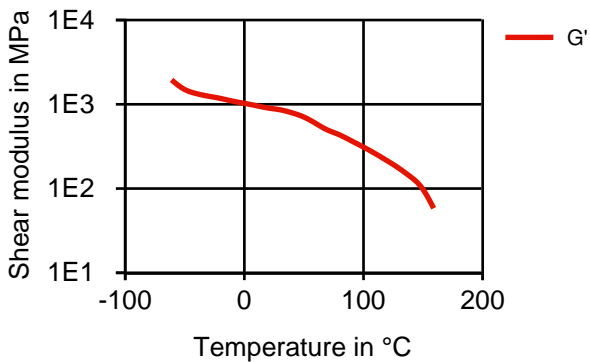
### Viscosity-shear rate



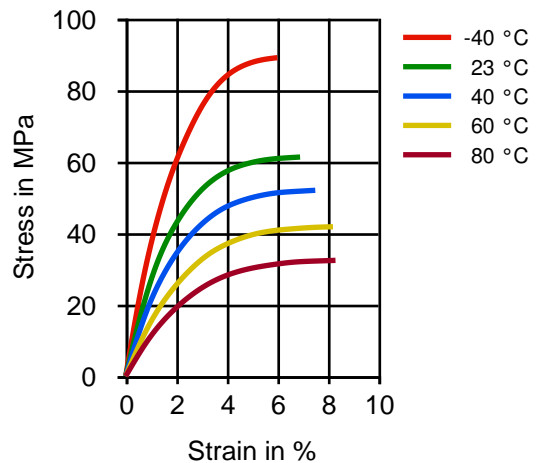
### Shearstress-shear rate



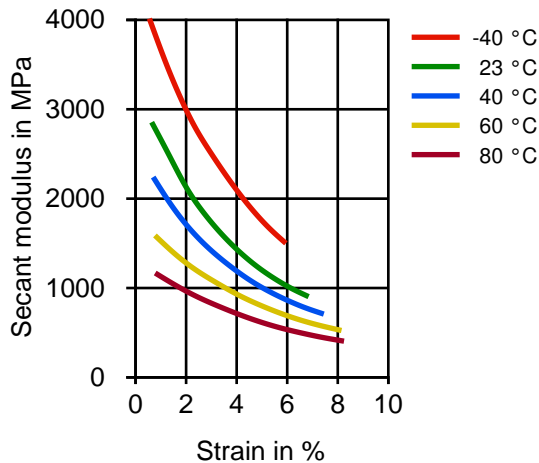
### Dynamic Shear modulus-temperature



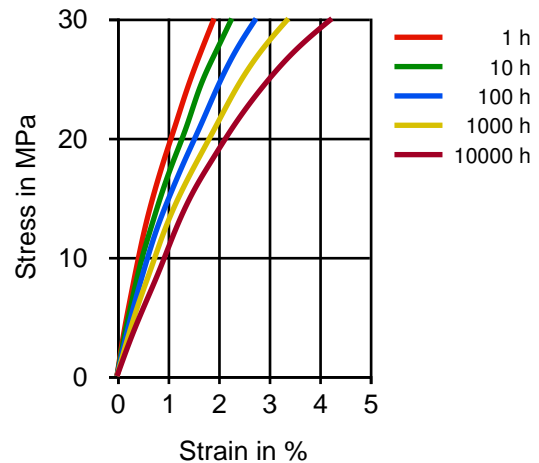
### Stress-strain



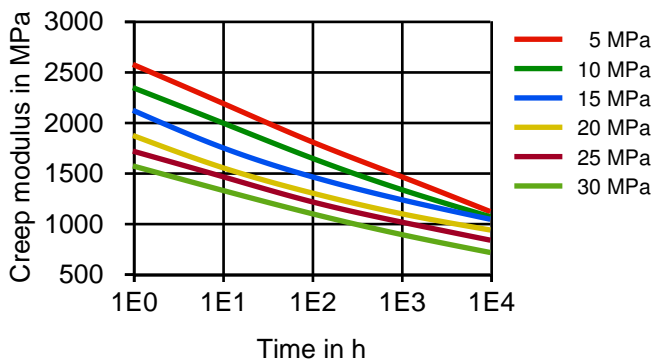
**Secant modulus-strain**



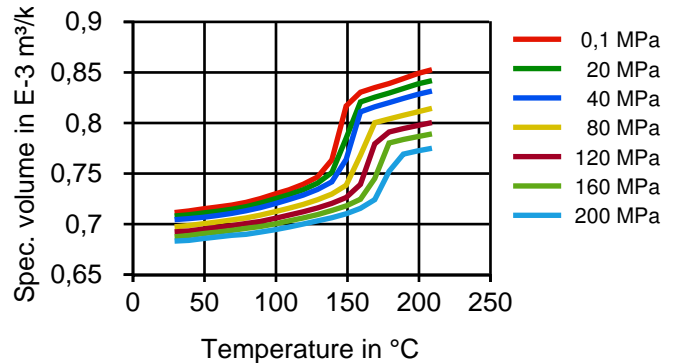
**Stress-strain (isochronous) 23 °C**



**Creep modulus-time 23 °C**



**Specific volume-temperature (pVT)**



**Typical injection moulding processing conditions**

	Value	Unit	Test Standard
<b>Pre Drying</b>			
Necessary low maximum residual moisture content	0,15	%	-
Drying time	3 - 4	h	-
Drying temperature	100 - 120	°C	-
<b>Temperature</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	-
Die temperature	190 - 210	°C	-
Melt temperature	190 - 210	°C	-
Cavity temperature	80 - 120	°C	-
Hot runner temperature	190 - 210	°C	-
<b>Pressure</b>			
Back pressure max.	40	bar	-
<b>Speed</b>			
Injection speed	slow-medium	-	-
<b>Screw Speed</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.

Melt temperature 190-210 °C  
Mould temperature 80-120 °C

### Film extrusion

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Standard extruders with grooved feed zone and short compression screws (minimum 25 D) will fit.

Melt temperature 180-190 °C

### Other extrusion

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Standard extruders with grooved feed zone and short compression screws (minimum 25 D) will fit.

Melt temperature 180-190 °C

### Sheet extrusion

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Standard extruders with grooved feed zone and short compression screws (minimum 25 D) will fit.

Melt temperature 180-190 °C

### Characteristics

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#### Product Categories

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Unfilled

#### Contact Information

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##### Americas

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#### General Disclaimer

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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. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional

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## **HOSTAFORM® C 9021 - POM**

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technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. The products mentioned herein are not intended for use in medical or dental implants.

### **Trademark**

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