

**HOSTAFORM® C 13021 - POM**
**Description**

Injection molding grade with moderate flow

Chemical abbreviation according to ISO 1043-1: POM Molding compound ISO 29988- POM-K, M-GNR, 04-002 POM copolymer Easy flowing Injection molding type for precision molded parts and thin-walled molded parts 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) UL = Underwriters Laboratories (USA) FMVSS = Federal Motor Vehicle Safety Standard (USA)

Physical properties	Value	Unit	Test Standard
Density	1410	kg/m <sup>3</sup>	ISO 1183
Melt volume rate, MVR	12	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	1.8	%	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

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	2900	MPa	ISO 527-1, -2
Tensile stress at yield, 50mm/min	65	MPa	ISO 527-1, -2
Tensile strain at yield, 50mm/min	9	%	ISO 527-1, -2
Tensile nominal strain at break, 50mm/min	28	%	ISO 527-1, -2
Tensile creep modulus, 1h	2500	MPa	ISO 899-1
Tensile creep modulus, 1000h	1300	MPa	ISO 899-1
Flexural modulus, 23 °C	2750	MPa	ISO 178
Flexural stress at 3.5% strain	72	MPa	ISO 178
Charpy impact strength, 23 °C	200	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30 °C	200	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
Ball indentation hardness, 30s	143	MPa	ISO 2039-1

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10 °C/min	166	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	106	°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)	1.5	mm	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
Dielectric constant (Dk), 100Hz	4	-	IEC 60250
Dielectric constant (Dk), 1MHz	4	-	IEC 60250
Dissipation factor, 100Hz	20	E-4	IEC 60250
Dissipation factor, 1MHz	50	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)	35	kV/mm	IEC 60243-1
Comparative tracking index	PLC 0	-	UL 746

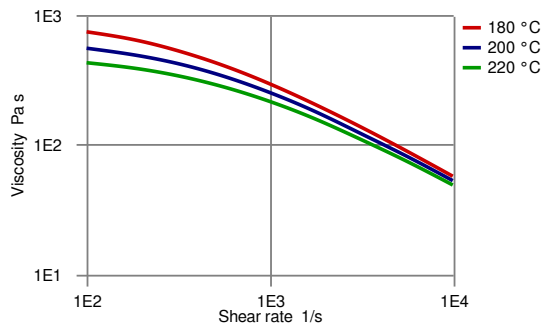
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## Rheological calculation properties

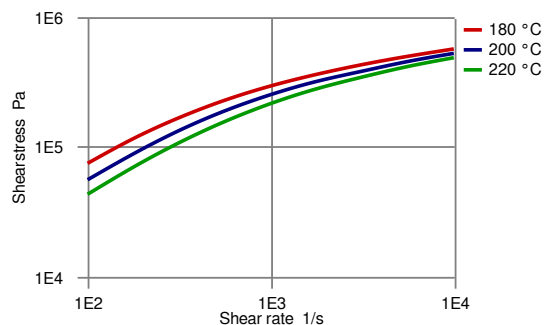
	Value	Unit	Test Standard
Density of melt	1200	kg/m <sup>3</sup>	Internal
Thermal conductivity of melt	0.155	W/(m K)	Internal
Spec. heat capacity melt	2210	J/(kg K)	Internal
Ejection temperature	140	°C	Internal

## Diagrams

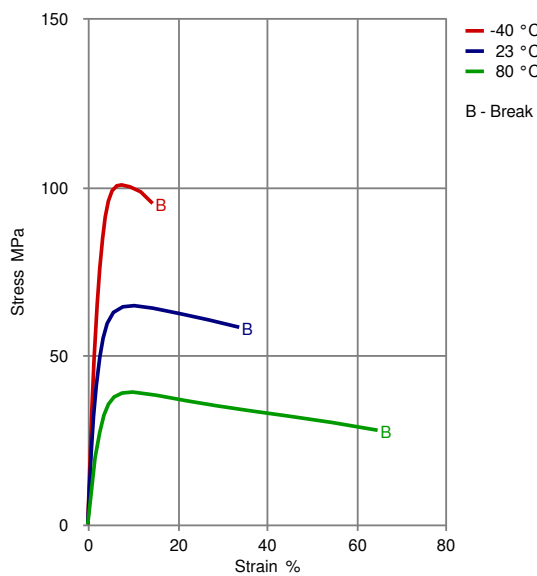
### Viscosity-shear rate



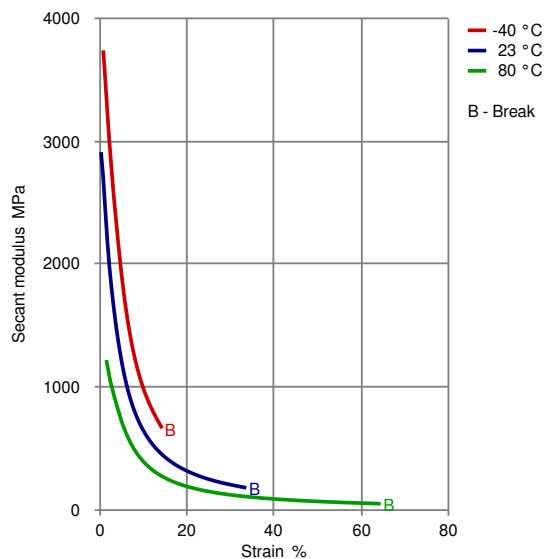
### Shear stress-shear rate



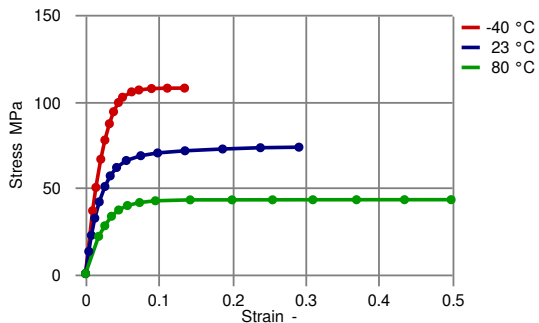
### Stress-strain



### Secant modulus-strain



**True Stress-strain**



-40 °C yield at 0.07282 strain, 106.415 stress  
 23 °C yield at 0.09847 strain, 69.936 stress  
 80 °C yield at 0.09541 strain, 42.200 stress

**Typical injection moulding processing conditions**

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

**Longer pre-drying times/storage**

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

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### Injection molding

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

### Injection Molding Preprocessing

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

Conditioning e.g. moisturizing is not necessary.

### Characteristics

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

### Other Approvals

OEM	Specification	Additional Information
BMW	GS 93016	
Bosch	N28 BN22-O024	Colors
Continental	TST N 055 54.07	
Mercedes-Benz Group (Daimler)	DBL 5403	(5403.00)
Mercedes-Benz Group (Daimler)	DBL 5405	(5405.01)
Mercedes-Benz Group (Daimler)	DBL 5406	(5406.00)
Mercedes-Benz Group (Daimler)	DBL 5410	(5410.00)
Mercedes-Benz Group (Daimler)	DBL 5420	(5420.00)
Mercedes-Benz Group (Daimler)	DBL 5410	Natural
Ford	WSK-M4D635-A2	Natural & Black 12
Renault		F 1605006/ 4901502
Renault	UB03f	PMR2020
Toyota	TSM5515G-1B	

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**General Disclaimer**

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