

HOSTAFORM® C 27021 - POM
Description

Injection molding grade with high flow

Chemical abbreviation according to ISO 1043-1: POM Molding compound ISO 29988- POM-K, M-GNR, 05-002 POM copolymer Very easy flowing Injection molding type with high rigidity and hardness; 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: thin-walled molded parts with unfavourable flow-path-wall thickness relation; multicavity moulds; complicated precision molded parts; short cycle time. 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 ³	ISO 1183
Melt volume rate, MVR	24	cm ³ /10min	ISO 1133
MVR temperature	190	°C	ISO 1133
MVR load	2.16	kg	ISO 1133
Molding shrinkage, parallel (flow)	1.9	%	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	7.5	%	ISO 527-1, -2
Tensile nominal strain at break, 50mm/min	17	%	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	73	MPa	ISO 178
Charpy impact strength, 23°C	170	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	170	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	5.5	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	5.5	kJ/m ²	ISO 179/1eA
Ball indentation hardness, 30s	147	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	25	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

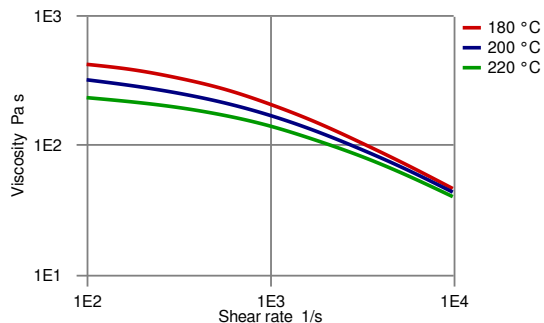
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Rheological calculation properties

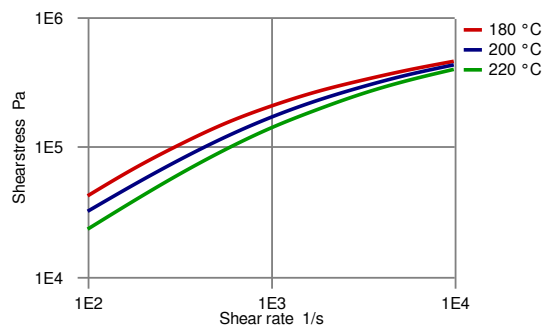
	Value	Unit	Test Standard
Density of melt	1200	kg/m ³	Internal
Thermal conductivity of melt	0.155	W/(m K)	Internal
Spec. heat capacity melt	2210	J/(kg K)	Internal
Ejection temperature	140	°C	Internal

Diagrams

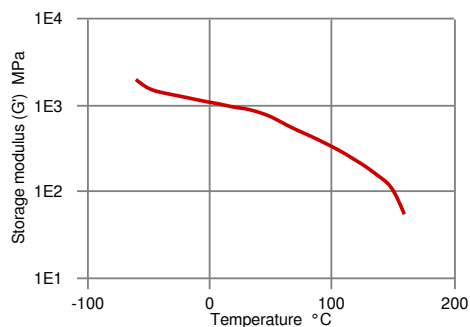
Viscosity-shear rate



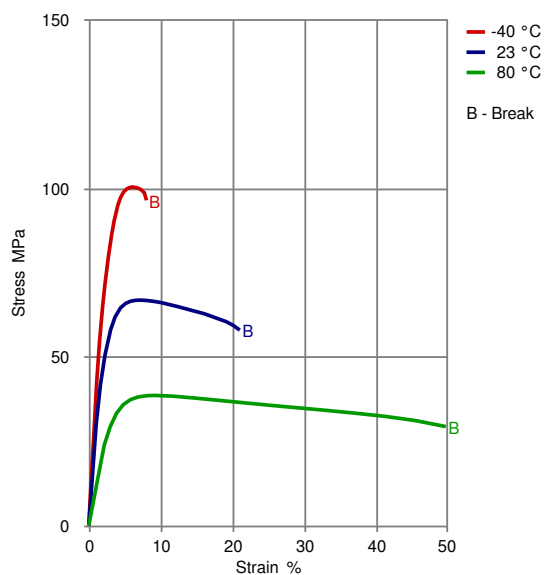
Shear stress-shear rate



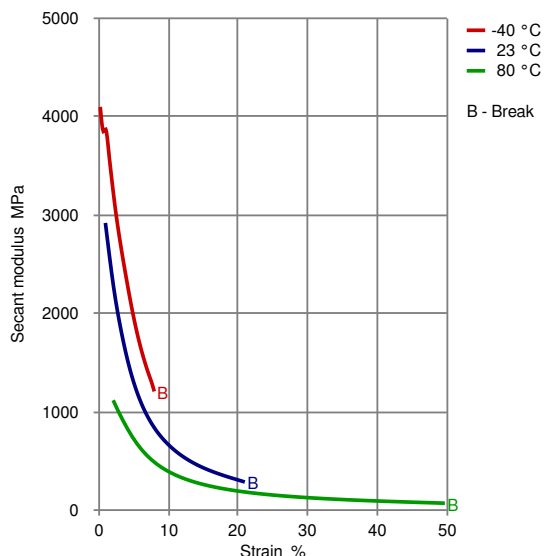
Dynamic Shear modulus-temperature



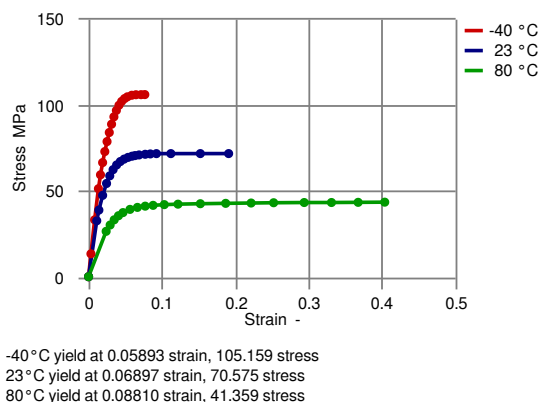
Stress-strain



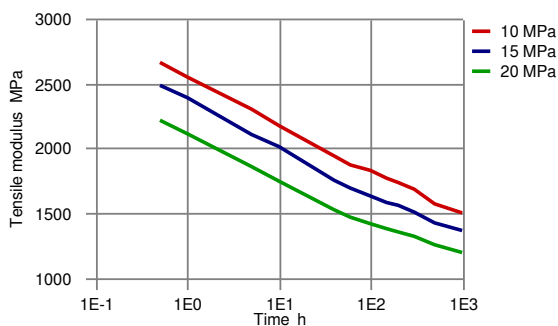
Secant modulus-strain



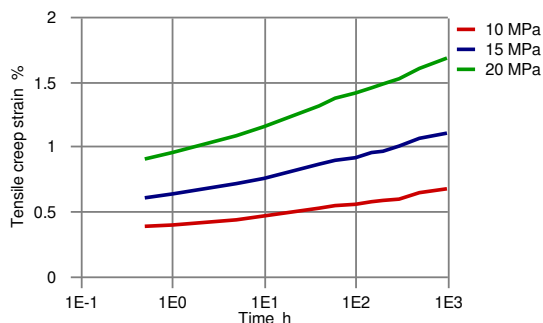
True Stress-strain



Creep modulus-time 23 °C



Creep strain-time 23 °C



Typical injection moulding processing conditions

Pre Drying

	Value	Unit
Necessary low maximum residual moisture content	0.15	%
Drying time	3 - 4	h
Drying temperature	100 - 120	°C

Temperature

	Value	Unit
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

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Nozzle temperature	190 - 210	°C
Melt temperature	190 - 210	°C
Mold temperature	80 - 120	°C
Hot runner temperature	190 - 210	°C

Pressure	Value	Unit
Back pressure max.	40	bar

Speed	Value
Injection speed	slow-medium

Screw Speed	Value	Unit
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.

Longer pre-drying times/storage

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

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

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

Other Approvals

OEM	Specification	Additional Information
BMW	GS 93016	
Bosch	N28 BN22-O028	Natural & Black
Continental	TST N 055 54.12	

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Continental	TST N 055 54.12	(TST N 055 54.12-001)
Continental	TST N 055 54.12	(TST N 055 54.12-005) + 4 % HOSTAFORM FK 33 (grey coloured masterbatch)
Continental	TST N 055 54.12	(TST N 055 54.12-004) + 4 % HOSTAFORM FK 87 (blue coloured masterbatch)
Ford	WSK-M4D635-A3	Natural & Black
Nissan	POM-IHx-1	
Toyota	TSM5515G-1B	

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General Disclaimer

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