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Advanced Modified Polymers

Ticona
Performance Driven Solutions™

HOSTAFORM® C 52021 | POM | Unfilled

Description

Chemical abbreviation according to ISO 1043-1: POM
Molding compound ISO 9988- POM-K, M-GNR, 06-002

POM copolymer

Extremly easy flowing Injection molding type for very thin-walled precision molded parts with unfavourite flow-path-wallthickness relation; permits processing at reduced temperature and also shorter cycle times; for mechanical lower requirements; good chemical resistance to solvents, fuel and strong alkalis as well as good hydrolysis resistance; high esistance to thermal and oxidative degradation.

Fulfils EG-directive 2002/72/EU as well as the recommendation XXXIII for consumer goods of the BgVV,
FDA compliant according to 21 CFR 177.2470

UL-registration in natural a thickness more than 0.81 mm, in black a thickness more than 1.5 mm as UL 94 HB, temperature index UL 746 B for a thickness of 1.5 mm, electrical 105 °C, mechanical 90 °C

Burning rate ISO 3795 and FMVSS 302 < 75 mm/min for a thickness more than 1 mm.

Ranges of applications: For very thin-walled precision molded parts with unfavourite flow-path-wallthickness relation; permits processing at reduced temperature and also shorter cycle times.

FDA = Food and Drug Administration (USA)
BgVV = Bundesinstitut fr gesundheitlichen Verbraucherschutz und Veterin rmedizin
FMVSS = Federal Motor Vehicle Safety Standard (USA)
UL = Underwriters Laboratories (USA)

Physical properties	Value	Unit	Test Standard
Density	**1410**	kg/m³	ISO 1183
Melt volume rate (MVR)	**39**	cm³/10min	ISO 1133
MVR test temperature	**190**	°C	ISO 1133
MVR test load	**2.16**	kg	ISO 1133
Mold shrinkage - parallel	**1.9**	%	ISO 294-4
Mold shrinkage - normal	**1.8**	%	ISO 294-4
Water absorption (23°C-sat)	**0.65**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**3000**	MPa	ISO 527-2/1A
Tensile stress at yield (50mm/min)	**65**	MPa	ISO 527-2/1A
Tensile strain at yield (50mm/min)	**7**	%	ISO 527-2/1A
Nominal strain at break (50mm/min)	**15**	%	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)	**2800**	MPa	ISO 178
Charpy impact strength @ 23°C	**100**	kJ/m²	ISO 179/1eU

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Mechanical properties	Value	Unit	Test Standard
Charpy impact strength @ -30°C	**100**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**5.0**	kJ/m²	ISO 179/1eA
Charpy notched impact strength @ -30°C	**5**	kJ/m²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	**166**	°C	ISO 11357-1,-2,-3
DTUL @ 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	UL94
thickness tested (1.6)	**1.5**	mm	UL94
UL recognition (1.6)	**UL**	-	UL94
Flammability at thickness h	**HB**	class	UL94
thickness tested (h)	**0.81**	mm	UL94
UL recognition (h)	**UL**	-	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 100 Hz	**4**	-	IEC 60250
Relative permittivity - 1 MHz	**4**	-	IEC 60250
Dissipation factor - 100 Hz	**30**	E-4	IEC 60250
Dissipation factor - 1 MHz	**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 CTI	**600**	-	IEC 60112

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

Rheological Calculation properties	Value	Unit	Test Standard
Density of melt	**1200**	kg/m³	Internal
Thermal conductivity of melt	**0.19**	W/(m K)	Internal
Specific heat capacity of melt	**2060**	J/(kg K)	Internal
Ejection temperature	**163**	°C	Internal

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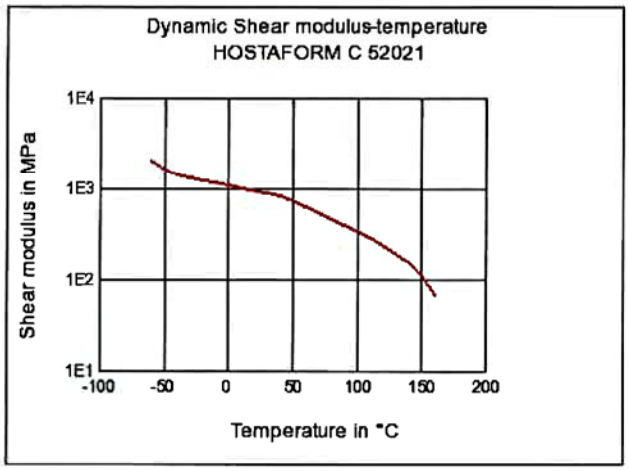
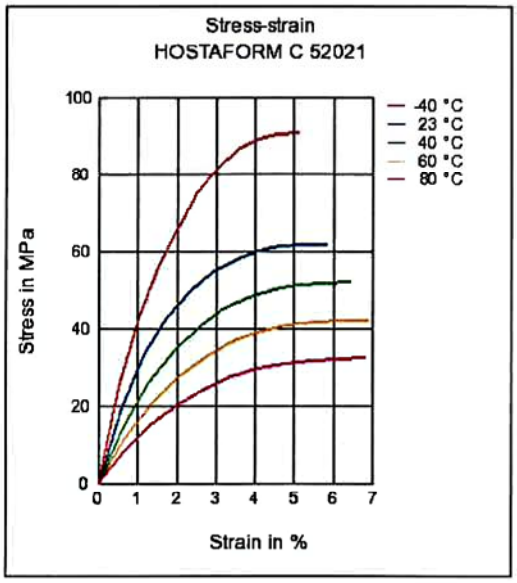
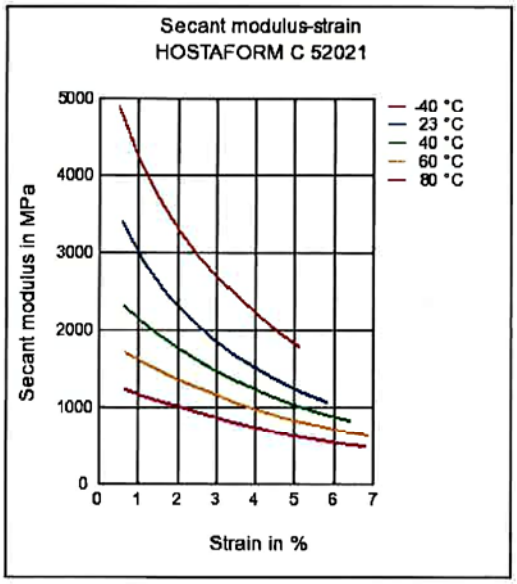
Dynamic Shear modulus-temperature



Stress-strain



Secant modulus-strain



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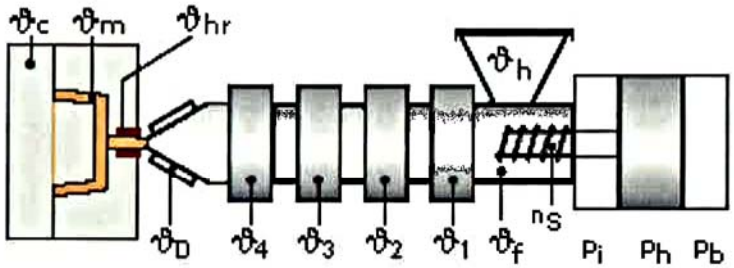
Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.15%
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.
The product can then be stored in standard conditions until processed.

Drying time: 3 - 4 h

Drying temperature: 120 - 140 °C

Temperature:

	$\vartheta_{Manifold}$	ϑ_{Mold}	ϑ_{Melt}	ϑ_{Nozzle}	ϑ_{Zone4}	ϑ_{Zone3}	ϑ_{Zone2}	ϑ_{Zone1}	ϑ_{Feed}	ϑ_{Hopper}
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	40

Speed:

Injection speed: slow-medium

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	80-120	°C

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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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