Celanese
The chemistry inside innovation™

HOSTAFORM® C 13031 - POM

Description

Injection molding grade with moderate flow, about 10% higher strength, rigidity and hardness than C 13021
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 like C 13021, but with higher strength, rigidity and hardness over the entire permissible temperature range for HOSTAFORM; 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; burning rate ISO 3795 and FMVSS 302 < 75 mm/min for a thickness more than 1 mm. Ranges of applications: For molded parts with higher requirements to strength, rigidity und hardness, ranges of applications with fuel contact. 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/m³	ISO 1183
Melt volume rate, MVR	**12**	cm³/10min	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**	%	ISO 62
Humidity absorption, 23°C/50%RH	**0.2**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**3050**	MPa	ISO 527-1, -2
Tensile stress at yield, 50mm/min	**68**	MPa	ISO 527-1, -2
Tensile strain at yield, 50mm/min	**8**	%	ISO 527-1, -2
Tensile nominal strain at break, 50mm/min	**28**	%	ISO 527-1, -2
Tensile creep modulus, 1h	**2750**	MPa	ISO 899-1
Tensile creep modulus, 1000h	**1450**	MPa	ISO 899-1
Flexural modulus, 23°C	**3000**	MPa	ISO 178
Flexural stress at 3.5% strain	**78**	MPa	ISO 178
Charpy impact strength, 23°C	**200**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**200**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	**6.7**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**6**	kJ/m²	ISO 179/1eA
Compressive stress at 1% strain	**31**	MPa	ISO 604
Ball indentation hardness, 30s	**156**	MPa	ISO 2039-1

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**170**	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	**107**	°C	ISO 75-1, -2
DTUL at 0.45 MPa	**161**	°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

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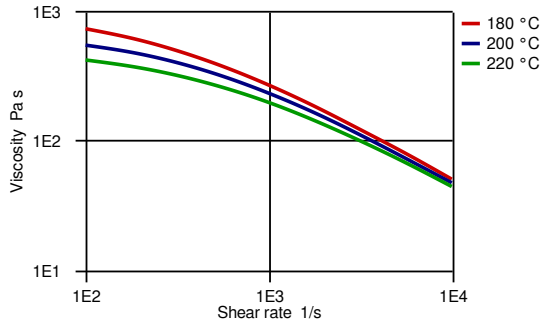
Comparative tracking index	**PLC 0**	-	UL 746

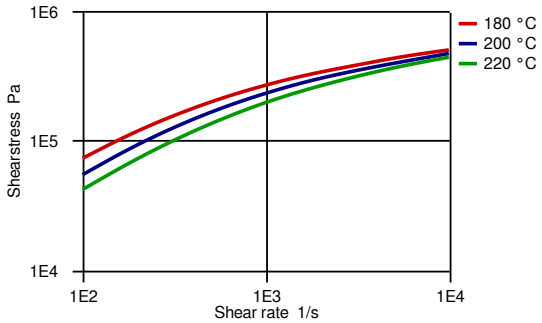
Rheological calculation properties	Value	Unit	Test Standard
Thermal conductivity of melt	**0.155**	W/(m K)	Internal

Diagrams

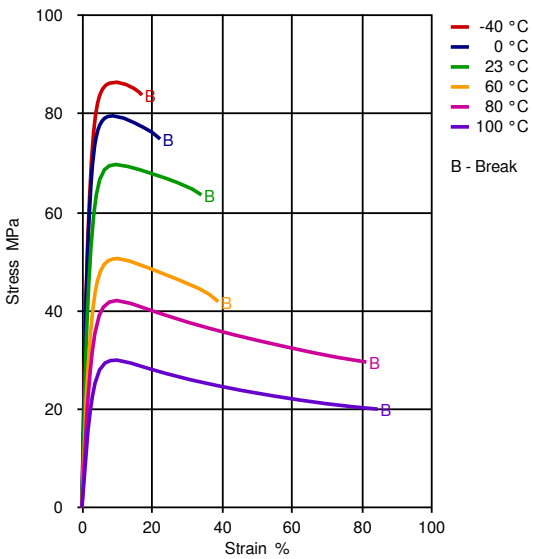
Viscosity-shear rate



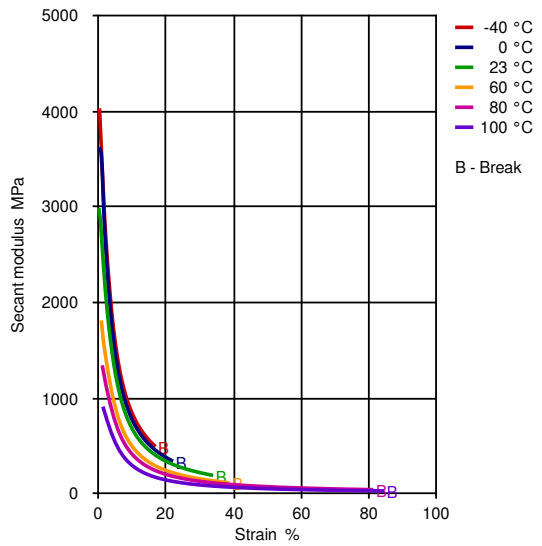
Shear stress-shear rate



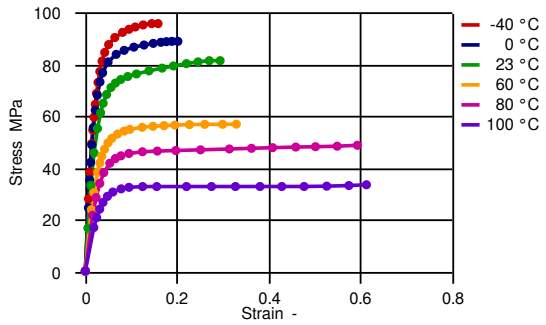
Stress-strain



Secant modulus-strain

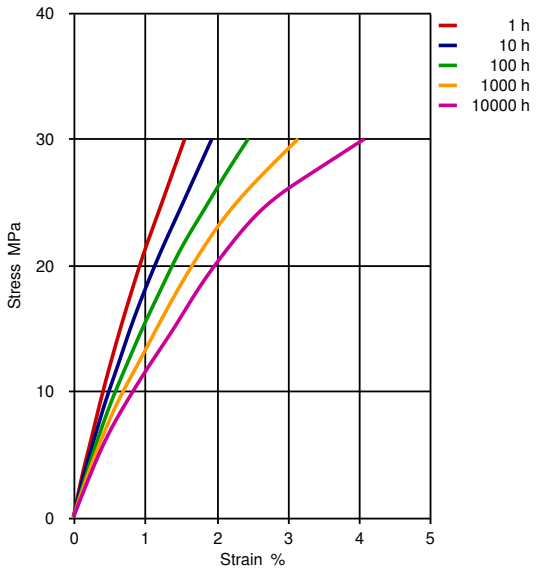


True Stress-strain

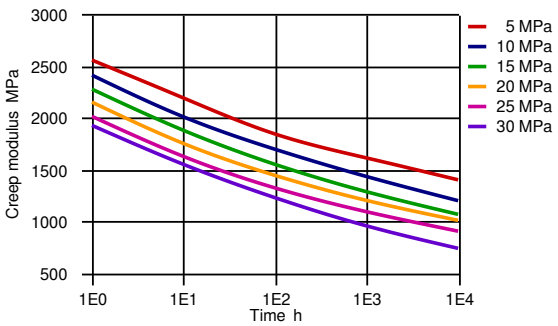


-40 °C yield at 0.09542 strain, 93.411 stress
0 °C yield at 0.08486 strain, 85.275 stress
23 °C yield at 0.09271 strain, 75.157 stress
60 °C yield at 0.09720 strain, 54.751 stress
80 °C yield at 0.09536 strain, 45.432 stress
100 °C yield at 0.09536 strain, 32.342 stress

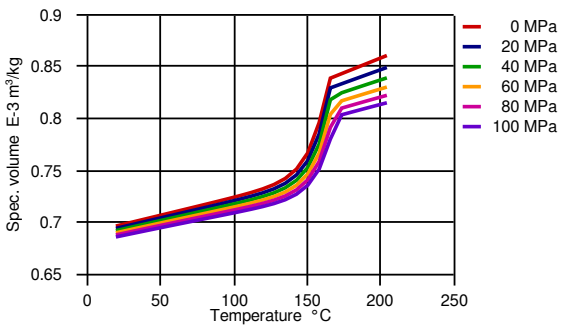
Stress-strain (isochronous) 23 °C



Creep modulus-time 23 °C



Moldflow Specific volume-temperature (pvT)



DSC Cooling Scan -20 C/min (ASTM E 1269)

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

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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
Nozzle temperature	**190 - 210**	°C
Melt temperature	**190 - 220**	°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
Product Categories	Unfilled
Processing	Injection molding
Regulatory	Drinking water approved
Delivery Form	Pellets

Additives	Release agent

Other Approvals

OEM	Specification
Bosch	N28 BN22-O025 (NAT & BLK)
Chrysler (FCA)	CPN 4270 NATURAL
Continental	TST N 055 54.11
Continental	TST N 055 54.11-001
Continental	TST N 055 54.30
Daimler	Fuel (NAT & BLK)
FORD	WSK-M4D635-A2 NAT & BLK 12
GM	GMW22P-POM-C3 NATURAL
PSA	FTM69 0008
PSA	01994_14_00057
Renault	PMR2020 (UB03f)
VW/ Audi	TL52636-A, -C

Contact

Americas
8040 Dixie Highway
Florence, KY 41042 USA
Product Information Service
t: +1-800-833-4882
t: +1-859-372-3244
Customer Service
t: +1-800-526-4960
t: +1-859-372-3214
e: info-engineeredmaterials-am@celanese.com

Asia
4560 Jinke Road
Zhang Jiang Hi Tech Park
Shanghai 201210 PRC
Customer Service
t: +86 21 3861 9288
e: info-engineeredmaterials-asia@celanese.com

Europe
Am Unisys-Park 1
65843 Sulzbach, Germany
Product Information Service
t: +49-800-86427-531
t: +49-(0)-69-45009-1011
e: info-engineeredmaterials-eu@celanese.com

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