

HOSTAFORM® C 13021 | POM | Unfilled

Description

Chemical abbreviation according to ISO 1043-1: POM
Molding compound ISO 9988- 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.

Fulfills 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 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)
BgVV = Bundesinstitut für gesundheitlichen Verbraucherschutz und Veterinärmedizin
UL = Underwriters Laboratories (USA)
FMVSS = Federal Motor Vehicle Safety Standard (USA)

| Physical properties | Value | Unit | Test Standard |
|-----------------------------|-------------|------------------------|---------------|
| Density | 1410 | kg/m ³ | ISO 1183 |
| Melt volume rate (MVR) | 12 | cm ³ /10min | ISO 1133 |
| MVR test temperature | 190 | °C | ISO 1133 |
| MVR test load | 2.16 | kg | ISO 1133 |
| Mold shrinkage - parallel | 2 | % | 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) | 2900 | MPa | ISO 527-2/1A |
| Tensile stress at yield (50mm/min) | 65 | MPa | ISO 527-2/1A |
| Tensile strain at yield (50mm/min) | 9 | % | ISO 527-2/1A |
| Nominal strain at break (50mm/min) | 25 | % | 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 | 150 | kJ/m ² | ISO 179/1eU |
| Charpy impact strength @ -30°C | 140 | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength @ 23°C | 6.5 | kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength @ -30°C | 6 | kJ/m ² | ISO 179/1eA |

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| 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) | 3 | mm | UL94 |
| UL recognition (h) | UL | - | UL94 |

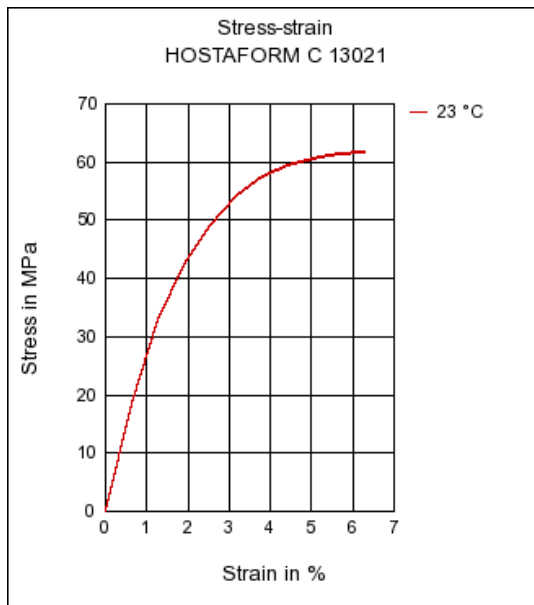
| Electrical properties | Value | Unit | Test Standard |
|--------------------------------|-------------|-------|---------------|
| Relative permittivity - 100 Hz | 4 | - | IEC 60250 |
| Relative permittivity - 1 MHz | 4 | - | IEC 60250 |
| Dissipation factor - 100 Hz | 20 | E-4 | IEC 60250 |
| Dissipation 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 |

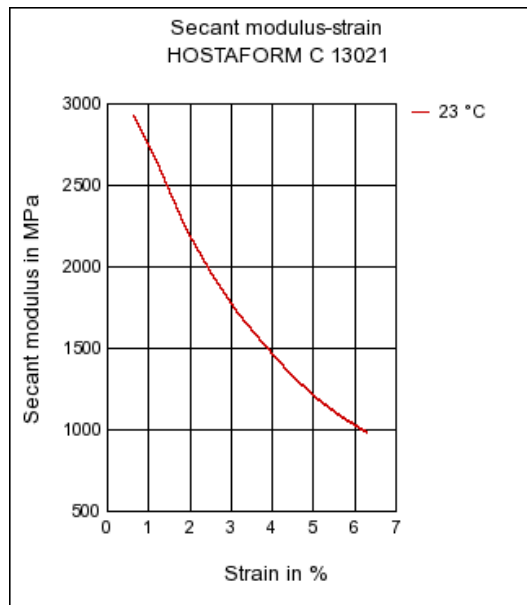
| Rheological Calculation properties | Value | Unit | Test Standard |
|------------------------------------|--------------|-------------------|---------------|
| Density of melt | 1200 | kg/m ³ | Internal |
| Thermal conductivity of melt | 0.155 | W/(m K) | Internal |
| Specific heat capacity of melt | 2210 | J/(kg K) | Internal |
| Ejection temperature | 165 | °C | Internal |

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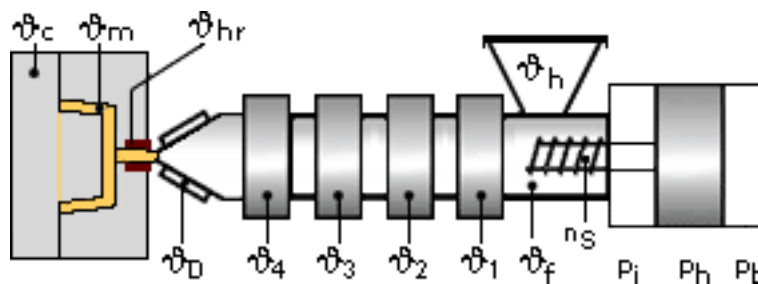
Stress-strain



Secant modulus-strain



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:

| | ϕManifold | ϕMold | ϕMelt | ϕNozzle | ϕZone4 | ϕZone3 | ϕZone2 | ϕZone1 | ϕFeed | ϕHopper |
|----------|-----------|-------|-------|---------|--------|--------|--------|--------|-------|---------|
| min (°C) | 190 | 80 | 190 | 190 | 190 | 190 | 180 | 170 | 60 | 20 |
| max (°C) | 210 | 120 | 210 | 210 | 210 | 200 | 190 | 180 | 80 | 30 |

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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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