## HOJA PARÁMETROS PRUEBAS INYECCIÓN

| | | | | | |
|---|---|---|---|---|---|
| FECHA | 15/09/2021 | REF. MOLDE | 1540/0/1 | TERMOPLÁSTICO | **BIO GP-1015 NEGRO** M.VERA + negre avat 11.116 (colorante) 3.5s 4rp |
| | | CAVIDADES | 4 / 4 | | |
| TÉCNICO | | COLORANTE ( % ) | | TIEMPO/R.P.M COLORIMETRO | |
| MÁQUINA | 47 | ADITIVO | n/a | TIEMPO/R.P.M COLORIMETRO | |

**TEMPERATURAS HUSILLO**

| | BOQUILLA | Z1 | Z2 | Z3 | Z4 |
|---|---|---|---|---|---|
| **N**ominal | 225 | 175 | 170 | 165 | |
| **R**eal | 225 | 179 | 175 | 165 | |

**TEMPERATURAS CÁMARA MOLDE**

| | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | RC1 | RC2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **N** | | | | | | | | | | | | | | |
| **R** | | | | | | | | | | | | | | |
| | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | RC3 | RC4 |
| **N** | | | | | | | | | | | | | | |
| **R** | | | | | | | | | | | | | | |

B. Boquilla R. Ramal RC. Ramales Centrales**MOLDE TEMPERATURAS**

| **LADO INYECCIÓN** **Zona Molde** | **º C** | **LADO EXPULSIÓN** **Zona Molde** | **º C** |
|---|---|---|---|
| Vasos | 25 grados | Punzones | 72 grados |
| | | | |
| | | | |
| | | | |

**TIEMPOS/PRESIONES**

| | | | | | |
|---|---|---|---|---|---|
| T. CICLO | 26 | T.ENFRIAMIENTO | 14 | P. LIMITE | 1000 |
| T.PLASTIFICACIÓN | 3.60 | T. 2ª. PRESIÓN | 5 | P. REAL INY. | 1048 |
| T. INYECCIÓN | 1.42 | T. SEG. MOLDE | 1 | P. REAL C.C | 975 |

**REGISTRO VELOCIDADES/PRESIONES**

| **Perfiles** | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| **m.m/s** | **10** | **15** | **15** | **20** | | |
| **m.m** | **0** | **23** | **26** | **29** | | |
| **Presión** | **1000** | **1000** | **1000** | **1000** | | |
| **2 ª.PRESIÓN** | | **COTA CAMBIO:** | **20** | **m.m** | **COJÍN:** | **19.18** **m.m** |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| **Presión** | **0** | **1050** | **1025** | **1000** | | |
| **Tiempo** | **5** | **4.50** | **2** | **0** | | |

**PLASTIFICACIÓN**

| | | | | | | |
|---|---|---|---|---|---|---|
| **r.p.m** | **200** | **200** | **200** | | **Succión** | |
| **m.m** | **0** | **30** | **40** | | **m.m/s** | **8** |
| **Cp** | **90** | **90** | **90** | | **m.m** | **5** |

**VARIOS**

| **ABERTURA MOLDE** | **REC. SEG. MOLDE** | **P. SEG. MOLDE** | **PIEZAS/HORA** |
|---|---|---|---|
| **285 m.m** | **15 m.m** | **20 V Bar** | **und.** |
| **Φ BOQUILLA** | **CARRO** | **PESO PIEZA** | **PESO INYECTADA** |
| **4 m.m** | **M ( x ) F ( )** | **4.16/4.02/4.28/4.15 g.** | **21.07 g.** |

**REGISTRO CAMBIOS**

| **FECHA** | **PARAMETRO** | **CAMBIO** | **MOTIVO** | **TÉCNICO** |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**TOLERANCIA PARÁMETROS +- 5 %**

| **APROBADO RESPONSABLE INYECCIÓN:** | **APROBADO RESPONSABLE CALIDAD:** |
|---|---|

| Firma/fecha | Firma/fecha: |
|---|---|

**OBSERVACIONES:**

**Data: 15/09/2021**

**Prueba de molde con material BIO GP-1015 NEGRO** M.VERA + negre avat 11.116 (colorante) 3.5s 4 RPM.

**La parte funcional del molde ok,**

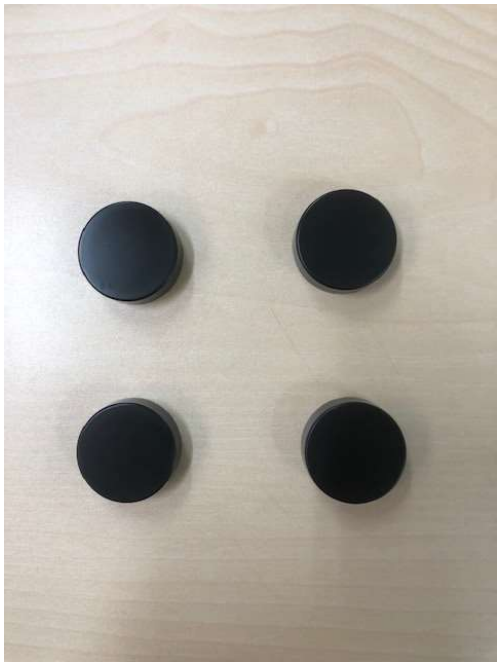
**Notamos que las piezas salen de molde muy mates, (sin brillo), ajustamos temperaturas de husillo y molde aumentándolas para reducir el mate, pero no notamos mejoría.**

**La parte del punzón nos obliga a trabajar con temperaturas de molde no inferiores a 70 grados, de lo contrario las piezas se rompen del lateral. Por otro lado al trabajar con robot y molde tan caliente provoca marcas de las ventosas, esto podríamos solucionarlo cambiando el sistema de recogida de pieza con pinzas.**

**También podríamos cambiar el sistema de desenroscado de la pieza, hacerlo mediante noyos, el molde actual funciona sin noyos.**

**Las piezas que enviaremos de muestra son sin robot, para asegurar que no tienen marcas de ventosa.**

**Fotos Molde/piezas:**



**Ficha Técnica entregada del material.**

# M·VERA® GP1015 (B0071)

Technical Description

## Product Description

| | |
|---|---|
| M·VERA® GP1015 (B0071): | Biodegradable polyester compound for injection moulding |
| Applications: | Coffee capsules, cutlery, etc. |
| Suitable for: | Injection moulded parts |
| Recommended thickness range: | <1.1 mm |
| Certification: | OK compost INDUSTRIAL (EN 13432, certified by TÜV AUSTRIA Belgium) |

## Properties*

| | Standard | Unit | GP1015 (B0071) |
|---|---|---|---|
| MVR 190 °C/2.16 kg | ISO 1133 | $cm^3$/10 min | 10 |
| Density | ISO 1183 | $g/cm^3$ | 1.40 |
| Renewable Content | - | % | ~70 |
| Moisture** | - | % | <0.1 |
| Tensile modulus | ISO 527-1/-2 | MPa | 4,900 |
| Tensile strength | ISO 527-1/-2 | MPa | 43 |
| Tensile strength at yield | ISO 527-1/-2 | MPa | 43 |
| Elongation at yield | ISO 527-1/-2 | % | 1.8 |
| Elongation at break | ISO 527-1/-2 | % | 2.3 |
| Flexural modulus | ISO 178 | MPa | 6,100 |
| Flexural strength | ISO 178 | MPa | 82 |
| Flexural elongation | ISO 178 | % | 4 |
| Charpy notched impact strength | ISO 179-1/1eA | $kJ/m^2$ | 4 |
| Heat distortion temperature, HDT/B | ISO 75/B | °C | 50-115*** |

** before packaging *** depends on mold temperature and post-injection molding annealing process

*Remark: The aforementioned information is only valid for M·VERA® grades in their original packaging, sold by BIO-FED® and/or its authorized partners. If M·VERA® grades are mixed in any capacity with foreign material, beside masterbatches recommended by BIO-FED, BIO-FED declines any further responsibility. M·VERA® grades shall be stored in dry, closed rooms in closed packaging in original state and to be protected against direct sun light not longer than 3 months. For keeping product properties, the recommended maximum temperature of 30 °C and the maximum humidity of 50 % shall not be exceeded. Products made of M·VERA® grades have to be stored under same conditions. All M·VERA® products can be colored with AF-Eco® biomasterbatches from AF-COLOR, also certified according to EN 13432. Please note that the use of AF-Eco® might influence the mechanical and/or optical properties of the final part.



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# M·VERA® GP1015 (B0071)

Processing Guide

## Processing Recommendations

**Safety Precautions:**
- Processing at a temperature not higher than 230 °C
- Processing with adequate ventilation

**Handling:**
- Delivered with ready-to-use moisture content
- Keep package sealed until use
- Reseal opened package of the M·VERA® product directly after use

**Drying:**
- In case the M·VERA® product becomes too humid, drying at 80 °C for 4 h by using a vacuum dryer or purging with dry air (dew point -35 °C)

**Delivery & Storage:**
- Supply in 25 kg foil-aluminum bags or 1 ton octabin with PE-inliner
- To be stored in dry place, protected from heat and direct sun radiation

**Start-up:**
- Purge with polyolefin with MFR = 30 g/10 min for ~10 minutes
- Lower the temperature to recommended settings
- Start transition, when the temperature are within 10 °C of desired range

**Equipment:**
- M·VERA® grades are designed for standard equipment

**Interruption & Shut-down:**
- Never leave M·VERA® product in the extruder for a longer period, e.g. over night
- By interruption for a considerable time, slow down screw speed to 5 rpm approx.
- For a longer period, please purge with same polyolefin from start-up procedure

## Processing Temperatures

| Grade | Mould Temp. | Nozzle | Zone 3 | Zone 2 | Zone 1 |
|---|---|---|---|---|---|
| **GP1015** (B0071) | 25–105 °C | 180–200 °C | 170–185 °C | 165–180 °C | 160–175 °C |


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