

Versaflex™ HC 2110-35N EU

Thermoplastic Elastomer

PolyOne Corporation

Message:

Versaflex™ HC 2110-35N EU is a thermoplastic elastomer developed as an alternative to traditional isoprene rubber solutions for infusion stoppers & septums that require multiple needle penetration with good resealing performance. Versaflex™ HC 2110-35N EU addresses needs such as low piercing force and good spike retention.

Overmolds to PP and PE.

Approved to ISO 10993 - 4 & 5

Approved to USP VI

Approved to USP 381

| General Information | | | |
|----------------------------------|-----------------------------|-------------------|--------------|
| Features | Good disinfection | | |
| | Good formability | | |
| | Good processing stability | | |
| | Good liquidity | | |
| | Good coloring | | |
| | Good demoulding performance | | |
| Uses | overmolding | | |
| | Plug | | |
| | Seals | | |
| | Sealing device | | |
| | Membrane | | |
| | Medical/nursing supplies | | |
| Agency Ratings | ISO 10993 Part 4 | | |
| | ISO 10993 Part 5 | | |
| | USP Class VI | | |
| RoHS Compliance | RoHS compliance | | |
| Appearance | Natural color | | |
| Forms | Particle | | |
| Processing Method | Injection molding | | |
| Physical | Nominal Value | Unit | Test Method |
| Specific Gravity | 0.900 | g/cm ³ | ISO 1183 |
| Hardness | Nominal Value | Unit | Test Method |
| Durometer Hardness (Shore A) | 35 | | ASTM D2240 |
| Elastomers | Nominal Value | Unit | Test Method |
| Tensile Strength (Break, 23°C) | 4.00 | MPa | DIN 53504-S2 |
| Tensile Elongation (Break, 23°C) | 640 | % | DIN 53504-S2 |

| | | | |
|--|---------------|------|-----------------|
| Compression Set | | | ISO 815 |
| 23°C, 72 hr | 23 | % | ISO 815 |
| 70°C, 22 hr | 35 | % | ISO 815 |
| 100°C, 22 hr | 54 | % | ISO 815 |
| Fill Analysis | Nominal Value | Unit | Test Method |
| Apparent Viscosity (200°C, 11200 sec ⁻¹) | 10.2 | Pa·s | Internal method |
| Injection | Nominal Value | Unit | |
| Suggested Max Regrind | 20 | % | |
| Rear Temperature | 182 - 193 | °C | |
| Middle Temperature | 221 - 238 | °C | |
| Front Temperature | 238 - 249 | °C | |
| Nozzle Temperature | 238 - 249 | °C | |
| Processing (Melt) Temp | 232 - 249 | °C | |
| Mold Temperature | 15.6 - 32.2 | °C | |
| Back Pressure | 0.00 - 0.552 | MPa | |
| Screw Speed | 80 - 200 | rpm | |

Injection instructions

Color concentrates with polypropylene (PP), ethylene vinyl acetate (EVA), or polyethylene (PE) carriers are most suitable for coloring Versaflex™ HC 2110-35N EU. Improved color dispersion can be achieved by using higher melt flow concentrates (with a melt flow from 25 - 40 g/10 min). Typical loadings for color concentrates are 1% to 5% by weight. Liquid color can be used, but mineral oil based carriers may have a significant effect on the final hardness value. Concentrates based on PVC should not be used. A high color match consistency can be obtained by using precolored compounds available from GLS. The final determination of color concentrate suitability should be determined by customer trials. Purge thoroughly before and after use of this product with a low flow (0.5 - 2.5 MFR) polyethylene (PE) or polypropylene (PP). Regrind levels up to 20% can be used with Versaflex™ HC 2110-35N EU with minimal property loss, provided that the regrind is free of contamination. To minimize losses during molding, the melt temperature should remain as low as possible. The final determination of regrind effectiveness should be determined by the customer. Versaflex™ HC 2110-35N EU has excellent melt stability. Maximum residence times may vary, depending on the size of the barrel. Generally, the barrel should be emptied if it is idle for periods of 8 - 10 minutes or longer. Drying is not Required. Injection Speed: 1 to 3 in/sec. 1st Stage - Boost Pressure: 800 to 1200 psi. 2nd Stage - Hold Pressure: 40-70% of Boost. Hold Time (Thick Part): 2 to 5 sec. Hold Time (Thin Part): 1 to 4 sec.

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