# Versaflex™ HC 3810-50N EU

## Thermoplastic Elastomer

### Key Characteristics

| Product Description | | |
|---|---|---|
| Versaflex™ HC 3810-50N EU is a general purpose, unfilled TPE compound used for healthcare applications | | |
| **General** | | |
| Material Status | • Commercial: Active | |
| Regional Availability | • Europe | |
| Uses | • Medical/Healthcare Applications | |
| Agency Ratings | • ISO 10993-4 [1] | • ISO 10993-5 [1] |
| RoHS Compliance | • RoHS Compliant | |
| Appearance | • Translucent | |
| Forms | • Pellets | |
| Processing Method | • Injection Molding | |

### Technical Properties [2]

| Physical | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Density / Specific Gravity | 0.890 | 0.890 | ISO 1183 |
| **Elastomers** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Tensile Stress [3] (300% Strain, 73°F (23°C)) | 290 psi | 2.00 MPa | ISO 37 |
| Tensile Strength [3] (Break, 73°F (23°C)) | 1090 psi | 7.50 MPa | ISO 37 |
| Tensile Elongation [3] (Break, 73°F (23°C)) | 900 % | 900 % | ISO 37 |
| Tear Strength [4] | | | ISO 34-1 |
| 73°F (23°C), 0.0787 in (2.00 mm) | 137 lbf/in | 24.0 kN/m | |
| Compression Set [5] | | | ISO 815 |
| 73°F (23°C), 72 hr | 25 % | 25 % | |
| 158°F (70°C), 22 hr | 42 % | 42 % | |
| **Hardness** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Durometer Hardness (Shore A, 10 sec) | 50 | 50 | ISO 48-4 |
| **Fill Analysis** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Apparent Viscosity | | | ASTM D3835 |
| 392°F (200°C), 11200 sec^-1 | 5.80 Pa·s | 5.80 Pa·s | |

### Processing Information

| Injection | Typical Value (English) | Typical Value (SI) |
|---|---|---|
| Suggested Max Regrind | 20 % | 20 % |
| Rear Temperature | 338 to 374 °F | 170 to 190 °C |
| Middle Temperature | 356 to 383 °F | 180 to 195 °C |
| Front Temperature | 374 to 410 °F | 190 to 210 °C |
| Nozzle Temperature | 356 to 410 °F | 180 to 210 °C |
| Processing (Melt) Temp | 374 to 410 °F | 190 to 210 °C |
| Mold Temperature | 68 to 122 °F | 20 to 50 °C |
| Back Pressure [6] | 290 to 1450 psi | 2.00 to 10.0 MPa |
| Screw Speed | 80 to 100 rpm | 80 to 100 rpm |

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| Injection Notes |
|---|

Color concentrates with polypropylene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (PE) carriers are most suitable for coloring Versaflex™ HC 3810-50N 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. Concentrates based on PVC should not be used. 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 3810-50N EU with minimal property losses, provided that the regrind is free of contamination. To minimize losses during molding, the melt temperature should be as low as possible. The final determination of regrind effectiveness should be determined by the customer.

Versaflex™ HC 3810-50N 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

## Notes

[1] Please contact PolyOne GLS Thermoplastic Elastomers for a complete copy of the GLS Healthcare Policy.
1. The Customer must notify GLS of any FDA Class I and/or European Union Class I medical devices for each specific product and application.
2. The Customer shall not knowingly manufacture, use, sell or otherwise supply, directly or indirectly products or compounds made from GLS products in any of the following without prior written approval by GLS for each specific product or application:
a. Cosmetics
b. Drugs and other Pharmaceuticals
c. Temporary or permanent implantation in the human body, regardless of the intended duration of implantation
d. Class II and Class III Medical Devices as defined in 21 CFR 860.3 ("Medical Devices")
e. Class IIa, IIb and III as defined in Directive 93/42/EEC

[2] Typical values are not to be construed as specifications.

[3] 7.9 in/min (200 mm/min)

[4] 20 in/min (500 mm/min)

[5] Method B

[6] If masterbatches are used, higher back pressure is needed.

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