# Versaflex™ HC 3810-20N

## Thermoplastic Elastomer

### Key Characteristics

| Product Description | | |
|---|---|---|
| Versaflex™ HC 3810-20N is a general purpose, unfilled TPE compound used for healthcare applications | | |
| **General** | | |
| Material Status | • Commercial: Active | |
| Regional Availability | • Asia Pacific | • North America |
| Uses | • Medical/Healthcare Applications | |
| Agency Ratings | • ISO 10993-4 [1] | • ISO 10993-5 |
| 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 | 0.880 | 0.880 | ASTM D792 |
| **Elastomers** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Tensile Stress [3, 4] (300% Strain, 73°F (23°C)) | 185 psi | 1.28 MPa | ASTM D412 |
| Tensile Strength [3, 4] (Break, 73°F (23°C)) | 342 psi | 2.35 MPa | ASTM D412 |
| Tensile Elongation [3, 4] (Break, 73°F (23°C)) | 650 % | 650 % | ASTM D412 |
| Compression Set | | | ASTM D395B |
| 73°F (23°C), 22 hr | 16 % | 16 % | |
| 158°F (70°C), 22 hr | 35 % | 35 % | |
| **Hardness** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Durometer Hardness (Shore A, 10 sec) | 22 | 22 | ASTM D2240 |
| **Fill Analysis** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Apparent Viscosity | | | ASTM D3835 |
| 392°F (200°C), 11200 sec^-1 | 5.60 Pa·s | 5.60 Pa·s | |

### Processing Information

| Injection | Typical Value (English) | Typical Value (SI) |
|---|---|---|
| Suggested Max Regrind | 20 % | 20 % |
| Rear Temperature | 330 to 370 °F | 166 to 188 °C |
| Middle Temperature | 350 to 380 °F | 177 to 193 °C |
| Front Temperature | 370 to 440 °F | 188 to 227 °C |
| Nozzle Temperature | 360 to 420 °F | 182 to 216 °C |
| Processing (Melt) Temp | 380 to 440 °F | 193 to 227 °C |
| Mold Temperature | 60 to 100 °F | 16 to 38 °C |

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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 3810-20N. 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 3810-20N 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 3810-20N 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] Die C

[4] 2 hr

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