# Versaflex™ HC MT224

## Thermoplastic Elastomer

### Key Characteristics

**Product Description**

Versaflex™ HC MT224 is an exceptionally clear, high performance TPE developed for medical tubing for healthcare. Versaflex™ HC MT224 has been specially formulated without the use of any plasticizers.

New Product. Commercial specifications have not been established.

- Flexible
- Formulated without plasticizers
- High Clarity

| General | | |
|---|---|---|
| Material Status | • Commercial: Active | |
| Regional Availability | • Africa & Middle East<br>• Asia Pacific | • Latin America<br>• North America |
| Features | • Good Flexibility | • High Clarity |
| Uses | • Medical/Healthcare Applications | • Tubing |
| Agency Ratings | • FDA<br>• ISO 10993-4 | • ISO 10993-5<br>• USP Class VI [1] |
| RoHS Compliance | • RoHS Compliant | |
| Appearance | • Clear/Transparent | |
| Forms | • Pellets | |
| Processing Method | • Extrusion | |

### Technical Properties [2]

| Physical | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Density / Specific Gravity | 0.890 | 0.890 | ASTM D792 |
| **Films** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Oxygen Permeability | | | ASTM D3985 |
| 70°F (21°C), 73 mil (1900 µm) | 1200 cm³·mil/100in²/atm/24 hr | 470 cm³·mm/m²/atm/24 hr | |
| **Elastomers** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Tensile Stress [3, 4] (100% Strain, 73°F (23°C)) | 468 psi | 3.23 MPa | ASTM D412 |
| Tensile Stress [3, 4] (300% Strain, 73°F (23°C)) | 773 psi | 5.33 MPa | ASTM D412 |
| Tensile Strength [3, 4] (Break, 73°F (23°C)) | 1360 psi | 9.38 MPa | ASTM D412 |
| Tensile Elongation [3, 4] (Break, 73°F (23°C)) | 530 % | 530 % | ASTM D412 |
| Compression Set | | | ASTM D395B |
| 72°F (22°C), 22 hr | 19 % | 19 % | |
| 113°F (45°C), 22 hr | 52 % | 52 % | |
| 158°F (70°C), 22 hr | 70 % | 70 % | |
| **Hardness** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Durometer Hardness (Shore A, 10 sec) | 75 | 75 | ASTM D2240 |

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| Fill Analysis | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Apparent Viscosity | | | ASTM D3835 |
| 392°F (200°C), 1340 sec^-1 | 176 Pa·s | 176 Pa·s | |
| 392°F (200°C), 11200 sec^-1 | 36.0 Pa·s | 36.0 Pa·s | |

## Processing Information

| Extrusion | Typical Value (English) | Typical Value (SI) |
|---|---|---|
| Melt Temperature | 360 to 400 °F | 182 to 204 °C |
| Die Temperature | 340 to 390 °F | 171 to 199 °C |

**Extrusion Notes**

Color concentrates with polypropylene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (PE) carriers are most suitable for coloring Versaflex™ HC MT224. Improved color dispersion can be achieved by using higher melt flow concentrates (with a melt flow from 25 - 40g/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).

Drying is not Required

Rear: 330F-370F
Center: 350F-400F
Front: 360F-420F
Screw: 100-500RPM

### 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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