

Dynaflex™ G7970-1 NSFG

Thermoplastic Elastomer

Key Characteristics

Product Description

- Dynaflex™ G7970-1 NSFG is a NSF 51 (food equipment) approved material suitable for a wide variety of applications.
- NSF 51 approved
 - FDA (see Notes)
 - Overmold Adhesion to Polypropylene
 - Soft Touch, Rubbery Feel

General

| | | | |
|-----------------------|---|---|--------------------------------------|
| Material Status | • Commercial: Active | | |
| Regional Availability | • Africa & Middle East • Asia Pacific | • Latin America • North America | |
| Features | • Good Colorability • Good Flow | • Good Processability • Good Processing Stability | • Recyclable Material |
| Uses | • Consumer Applications • Flexible Grips • Food Service Applications • Gaskets | • Household Goods • Kitchenware • Non-specific Food Applications • Overmolding | • Seals • Soft Touch Applications |
| Agency Ratings | • FDA 21 CFR 177.2600 ¹ | • NSF STD-51 | |
| RoHS Compliance | • RoHS Compliant | | |
| Appearance | • Natural Color | | |
| Forms | • Pellets | | |
| Processing Method | • Injection Molding | | |

Technical Properties²

| Physical | Typical Value (English) | Typical Value (SI) | Test Method |
|---|-------------------------|--------------------|-------------|
| Density / Specific Gravity | 1.18 | 1.18 | ASTM D792 |
| Melt Mass-Flow Rate (MFR) | | | ASTM D1238 |
| 190°C/2.16 kg | 1.0 g/10 min | 1.0 g/10 min | |
| 200°C/5.0 kg | 36 g/10 min | 36 g/10 min | |
| Molding Shrinkage - Flow | 6.0E-3 to 0.012 in/in | 0.60 to 1.2 % | ASTM D955 |
| Elastomers | Typical Value (English) | Typical Value (SI) | Test Method |
| Tensile Stress ^{3,4} (100% Strain, 73°F (23°C)) | 380 psi | 2.62 MPa | ASTM D412 |
| Tensile Stress ^{3,4} (300% Strain, 73°F (23°C)) | 450 psi | 3.10 MPa | ASTM D412 |
| Tensile Strength ^{3,4} (Break, 73°F (23°C)) | 955 psi | 6.58 MPa | ASTM D412 |
| Tensile Elongation ^{3,4} (Break, 73°F (23°C)) | 720 % | 720 % | ASTM D412 |
| Tear Strength | 160 lbf/in | 28.0 kN/m | ASTM D624 |
| Compression Set (73°F (23°C), 22 hr) | 20 % | 20 % | ASTM D395B |
| Hardness | Typical Value (English) | Typical Value (SI) | Test Method |
| Durometer Hardness (Shore A, 10 sec) | 70 | 70 | ASTM D2240 |
| Fill Analysis | Typical Value (English) | Typical Value (SI) | Test Method |
| Apparent Viscosity | | | ASTM D3835 |
| 392°F (200°C), 11200 sec ⁻¹ | 9.90 Pa·s | 9.90 Pa·s | |

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Additional Information

Dynaflex™ G7970-1 NSFG can be recycled as a filler or impact modifier for polyolefins, or can be recycled by grinding and reintroduction to the molding process. Similar to PP or PE recycling process, if separated appropriately, it can be recycled many times.

Municipality waste stream recycle code is "7" which is designated for "Other".

Please contact GLS Thermoplastic Elastomers for a copy of our Recyclability Compliance letter.

Processing Information

| Injection | Typical Value (English) | Typical Value (SI) |
|-----------------------|-------------------------|--------------------|
| Suggested Max Regrind | 20 % | 20 % |
| Rear Temperature | 330 to 350 °F | 166 to 177 °C |
| Middle Temperature | 350 to 380 °F | 177 to 193 °C |
| Front Temperature | 370 to 440 °F | 188 to 227 °C |
| Nozzle Temperature | 380 to 440 °F | 193 to 227 °C |
| Mold Temperature | 60 to 100 °F | 16 to 38 °C |
| Back Pressure | 0.00 to 120 psi | 0.00 to 0.827 MPa |
| Screw Speed | 40 to 100 rpm | 40 to 100 rpm |

Injection Notes

Color concentrates with polypropylene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (PE) carriers are most suitable for coloring Dynaflex™ G7970-1 NSFG. 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 Dynaflex™ G7970-1 NSFG 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.

Dynaflex™ G7970-1 NSFG 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: 350 to 900 psi
 2nd Stage - Hold Pressure: 30% of Boost
 Hold Time (Thick Part): 3 to 10 sec
 Hold Time (Thin Part): 1 to 3 sec

Notes

¹ Please contact GLS Thermoplastic Elastomers for a copy of the FDA compliance letter.

² Typical values are not to be construed as specifications.

³ Die C

⁴ 2 hr

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