# GLS AE4-325

## Thermoplastic Elastomer

### Key Characteristics

| Product Description | | | |
|---|---|---|---|
| GLS AE4-325 is designed to pass several fatty food extraction conditions identified in EU 10/2011. GLS AE4-325 will also overmold and co-extrude to polypropylene. | | | |
| **General** | | | |
| Material Status | • Commercial: Active | | |
| Regional Availability | • Africa & Middle East<br>• Asia Pacific | • Europe<br>• Latin America | • North America |
| Features | • Food Contact Acceptable | | |
| Uses | • Consumer Applications<br>• Containers | • Gaskets<br>• Kitchenware | • Non-specific Food Applications<br>• Overmolding |
| Agency Ratings | • EU No 10/2011 [1] | • FDA 21 CFR 177.2600 [2] | |
| RoHS Compliance | • RoHS Compliant | | |
| Appearance | • Translucent | | |
| Forms | • Pellets | | |
| Processing Method | • Extrusion | • Injection Molding | |

### Technical Properties [3]

| Physical | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Density / Specific Gravity | 0.891 | 0.891 | ISO 1183 |
| **Elastomers** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Tensile Stress (100% Strain, 73°F (23°C)) | 116 psi | 0.800 MPa | ISO 37 |
| Tensile Stress (300% Strain, 73°F (23°C)) | 210 psi | 1.45 MPa | ISO 37 |
| Tensile Strength (Break, 73°F (23°C)) | 1360 psi | 9.35 MPa | ISO 37 |
| Tensile Elongation (Break, 73°F (23°C)) | 850 % | 850 % | ISO 37 |
| **Hardness** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Shore Hardness (Shore A, 10 sec) | 40 | 40 | ISO 48-4 |
| **Fill Analysis** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Apparent Viscosity | | | Internal Method |
| 392°F (200°C), 11200 sec^-1 | 39.2 Pa·s | 39.2 Pa·s | |

### Processing Information

| Injection | Typical Value (English) | Typical Value (SI) |
|---|---|---|
| Suggested Max Regrind | 20 % | 20 % |
| Rear Temperature | 374 to 401 °F | 190 to 205 °C |
| Middle Temperature | 392 to 419 °F | 200 to 215 °C |
| Front Temperature | 401 to 437 °F | 205 to 225 °C |
| Nozzle Temperature | 410 to 455 °F | 210 to 235 °C |
| Processing (Melt) Temp | 401 to 437 °F | 205 to 225 °C |
| Mold Temperature | 68 to 140 °F | 20 to 60 °C |
| Back Pressure | 0.00 to 80.0 psi | 0.00 to 0.552 MPa |
| Screw Speed | 50 to 100 rpm | 50 to 100 rpm |

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| Injection Notes |
|---|

Color concentrates based on polypropylene (PP), ethylene vinyl acetate (EVA), or low density polyethylene (LDPE) are most suitable for coloring GLS AE4-325. 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 the use of 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 withGLS AE4-325 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.

GLS AE4-325 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: 500 to 700 psi
2nd Stage - Hold Pressure: 10 to 30% of Boost
Hold Time (Thick Part): 2 to 4 sec
Hold Time (Thin Part): 1 to 2 sec

| Extrusion | Typical Value (English) | Typical Value (SI) |
|---|---|---|
| Melt Temperature | 401 to 437 °F | 205 to 225 °C |
| Die Temperature | 419 to 455 °F | 215 to 235 °C |

| Extrusion Notes |
|---|

Rear: 190-205°C
Center: 195-215°C
Front: 205-225°C
Screw: 100-500 rpm

### Notes

[1] Product rating may be influenced by end product design and/or conditions of use. Please contact GLS Thermoplastic Elastomers for information addressing EU (EU, 10/2011) and FDA (21 CFR 177.2600) compliance.

[2] Product rating may be influenced by end product design and/or conditions of use. Please contact GLS Thermoplastic Elastomers for information addressing EU (EU, 10/2011) and FDA (21 CFR 177.2600) compliance.
Extraction testing was performed at an independent laboratory and conducted on injection molded plaques of said product. Test results are available from GLS Thermoplastic Elastomers upon request. It is still Customer's responsibility to test for final part compliance.

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

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