



Estane® 54640 TPU

Lubrizol Advanced Materials, Inc. - Thermoplastic Polyurethane Elastomer (Polyether)

Wednesday, November 6, 2019

General Information

Product Description

Type: Estane® 54640 is an 85A aromatic Polyether-Based Thermoplastic Polyurethane (TPU).

Features: Very good physical properties and hydrolysis resistance and wide processing window for calendering.

Uses: Melt coating/calendering, flat die/cast film extrusion

General

| | | | |
|-------------------|--|------------------------------------|------------------------|
| Material Status | • Commercial: Active | | |
| Availability | • Africa & Middle East • Asia Pacific | • Europe • Latin America | • North America |
| Features | • Aromatic | • Good Processability | • Hydrolysis Resistant |
| Uses | • Coating Applications | | |
| Agency Ratings | • FDA 21 CFR 177.1680 | • FDA 21 CFR 177.2600 | • NSF STD-61 |
| RoHS Compliance | • RoHS Compliant | | |
| Forms | • Pellets | | |
| Processing Method | • Calendering • Cast Film | • Extrusion • Extrusion Coating | |

ASTM & ISO Properties ¹

| Physical | Nominal Value | Unit | Test Method |
|--|---------------|--------|-------------|
| Density / Specific Gravity | 1.13 | | ASTM D792 |
| Elastomers | Nominal Value | Unit | Test Method |
| Tensile Set (200% Strain) | 14 | % | ASTM D412 |
| Tensile Stress (100% Strain, 0.0300 in) | 899 | psi | ASTM D412 |
| Tensile Stress (300% Strain, 0.0300 in) | 1700 | psi | ASTM D412 |
| Tensile Strength (Break, 0.0300 in) | 6600 | psi | ASTM D412 |
| Tensile Elongation (Break, 0.0300 in) | 520 | % | ASTM D412 |
| Tear Strength ² (0.0300 in) | 392 | lbf/in | ASTM D624 |
| Tear Strength (Split) | 120 | lbf/in | ASTM D470 |
| Hardness | Nominal Value | Unit | Test Method |
| Durometer Hardness (Shore A, 5 sec) | 82 to 88 | | ASTM D2240 |
| Thermal | Nominal Value | Unit | Test Method |
| Glass Transition Temperature | -56.2 | °F | DSC |
| Melting Temperature | 275 | °F | DSC |
| Aging | Nominal Value | Unit | Test Method |
| Change in Volume (73°F, 24 hr, in Water) | 1.3 | % | ASTM D471 |

Processing Information

| Extrusion | Nominal Value | Unit |
|------------------------|---------------|------|
| Drying Temperature | 219 | °F |
| Drying Time | 2.0 to 4.0 | hr |
| Suggested Max Moisture | 0.020 | % |
| Cylinder Zone 1 Temp. | 340 | °F |

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| Extrusion | Nominal Value | Unit |
|-----------------------|---------------|------|
| Cylinder Zone 2 Temp. | 351 | °F |
| Cylinder Zone 3 Temp. | 360 | °F |
| Cylinder Zone 4 Temp. | 370 | °F |
| Adapter Temperature | 370 | °F |
| Melt Temperature | 365 | °F |
| Die Temperature | 370 | °F |

Extrusion Notes

Dew Point: -40°C

Screen Pack Recommendation: 20/40/80/20

Notes

¹ Typical properties: these are not to be construed as specifications.

² Die C