

Elexar® EL-8730A

Teknor Apex Company - Thermoplastic Elastomer

Friday, June 30, 2017

General Information

Product Description

Elexar EL-8730A is a high performance, flame retardant thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Elexar EL-8730A is a high durometer grade that is UV stabilized and RoHS compliant. This grade is suitable for both injection molding and extrusion.

General

| | | | |
|-------------------|--|---|---|
| Material Status | • Commercial: Active | | |
| Availability | • Africa & Middle East • Asia Pacific | • Europe • Latin America | • North America |
| Features | • Filled • Good Flow • Halogenated | • High Density • High Hardness • High Specific Gravity | • Light Stabilized • Lubricated • Medium Flow |
| Uses | • Appliance Wire Insulation • Appliance Wire Jacketing • Cable Jacketing • Connectors | • Flexible Cord Jacketing • Industrial Cable Insulation • Terminal Cable Jacketing • Underground Power Cable | • Wire & Cable Applications • Wire Jacketing |
| RoHS Compliance | • RoHS Compliant | | |
| Appearance | • Natural Color | • Opaque | |
| Forms | • Pellets | | |
| Processing Method | • Extrusion | • Injection Molding | |

ASTM & ISO Properties ¹

| Physical | Nominal Value | Unit | Test Method |
|---|---------------|----------|-------------|
| Specific Gravity | 1.25 | | ASTM D792 |
| Melt Mass-Flow Rate (MFR) (200°C/5.0 kg) | 20 | g/10 min | ASTM D1238 |
| Elastomers | Nominal Value | Unit | Test Method |
| Tensile Stress ^{2,3} (100% Strain, 73°F, 0.0200 in) | 750 | psi | ASTM D412 |
| Tensile Stress ^{2,3} (300% Strain, 73°F, 0.0200 in) | 950 | psi | ASTM D412 |
| Tensile Strength ^{2,3} (Break, 73°F, 0.0200 in) | 1800 | psi | ASTM D412 |
| Tensile Elongation ^{2,3} (Break, 73°F, 0.0200 in) | 600 | % | ASTM D412 |
| Hardness | Nominal Value | Unit | Test Method |
| Durometer Hardness | | | ASTM D2240 |
| Shore A, 1 sec, Injection Molded | 85 | | |
| Shore A, 5 sec, Injection Molded | 83 | | |
| Thermal | Nominal Value | Unit | Test Method |
| Brittleness Temperature | < -67.0 | °F | ASTM D746 |
| Aging | Nominal Value | Unit | Test Method |
| Change in Tensile Strength in Air ³ (316°F, 168 hr) | 8.0 | % | ASTM D573 |
| Change in Ultimate Elongation in Air ³ (316°F, 168 hr) | -6.0 | % | ASTM D573 |
| Change in Tensile Strength ³ 140°F, 168 hr, in IRM 902 Oil | -7.0 | % | ASTM D471 |
| Change in Ultimate Elongation ³ 140°F, 168 hr, in IRM 902 Oil | -8.0 | % | ASTM D471 |
| Electrical | Nominal Value | Unit | Test Method |
| Dielectric Strength | 1200 | V/mil | ASTM D149 |
| Dielectric Constant | | | ASTM D150 |
| 1 kHz | 2.46 | | |
| 1 MHz | 2.45 | | |

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Revision Date: 10/4/2016

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| Electrical | Nominal Value | Unit | Test Method |
|------------------------|---------------|------|-------------|
| Dissipation Factor | | | ASTM D150 |
| 1 kHz | 1.3E-3 | | |
| 77°F, 1 MHz | 7.0E-5 | | |
| Flammability | Nominal Value | Unit | Test Method |
| Flame Rating (0.06 in) | V-0 | | UL 94 |
| Oxygen Index | 28 | % | ASTM D2863 |

Legal Statement

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Processing Information

| Injection | Nominal Value | Unit |
|------------------------|---------------|------|
| Rear Temperature | 390 to 420 | °F |
| Middle Temperature | 415 to 430 | °F |
| Front Temperature | 430 to 440 | °F |
| Nozzle Temperature | 430 to 445 | °F |
| Processing (Melt) Temp | 430 to 445 | °F |
| Mold Temperature | 77 to 150 | °F |
| Injection Pressure | 200 to 1000 | psi |
| Injection Rate | Moderate-Fast | |
| Back Pressure | 25.0 to 50.0 | psi |
| Screw Speed | 50 to 100 | rpm |
| Cushion | 0.150 to 1.00 | in |

Injection Notes

Drying is not necessary. However, if moisture is a problem, dry the pellets for 2 to 4 hours at 150°F (65°C).

| Extrusion | Nominal Value | Unit |
|-----------------------|---------------|------|
| Cylinder Zone 1 Temp. | 380 to 410 | °F |
| Cylinder Zone 2 Temp. | 390 to 420 | °F |
| Cylinder Zone 3 Temp. | 415 to 430 | °F |
| Cylinder Zone 4 Temp. | 415 to 430 | °F |
| Cylinder Zone 5 Temp. | 430 to 440 | °F |
| Die Temperature | 430 to 445 | °F |

Extrusion Notes

Screw Speed: 30 to 100 rpm

Notes

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

² Die C, 20 in/min

³ Samples were die cut from extruded tapes.



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