



# Elexar® EL-8730R

Teknor Apex Company - Thermoplastic Elastomer

## General Information

### Product Description

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

### General

|                   |                                                                                                                  |                                                                                                                       |                                                                                          |
|-------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Material Status   | • Commercial: Active                                                                                             |                                                                                                                       |                                                                                          |
| Availability      | • Africa & Middle East<br>• Asia Pacific                                                                         | • Europe<br>• Latin America                                                                                           | • North America                                                                          |
| Features          | • Flame Retardant<br>• General Purpose<br>• Good Colorability<br>• Good Flexibility<br>• Good Weather Resistance | • Halogenated<br>• Heat Aging Resistant<br>• High Elasticity<br>• High Elongation<br>• High Tensile Strength          | • Medium Flow<br>• Ozone Resistant<br>• Sunlight Resistant (720 hours)<br>• UV Resistant |
| Uses              | • Appliance Wire Insulation<br>• Appliance Wire Jacketing<br>• Cable Jacketing<br>• Connectors                   | • Flexible Cord Jacketing<br>• Industrial Cable Insulation<br>• Terminal Cable Jacketing<br>• Underground Power Cable | • Wire & Cable Applications<br>• Wire Jacketing                                          |
| Agency Ratings    | • UL 1581 <sup>1</sup>                                                                                           | • UL 94                                                                                                               |                                                                                          |
| UL File Number    | • QMTT2.73402                                                                                                    | • QMFZ2.E54709                                                                                                        |                                                                                          |
| Appearance        | • Black<br>• Colors Available                                                                                    | • Green<br>• Grey                                                                                                     | • Natural Color<br>• Yellow                                                              |
| Forms             | • Pellets                                                                                                        |                                                                                                                       |                                                                                          |
| Processing Method | • Extrusion                                                                                                      | • Injection Molding                                                                                                   |                                                                                          |

## ASTM & ISO Properties <sup>2</sup>

| Physical                                                       | Nominal Value | Unit     | Test Method |
|----------------------------------------------------------------|---------------|----------|-------------|
| Density / Specific Gravity                                     | 1.24          |          | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)                       | 13            | g/10 min | ASTM D1238  |
| Elastomers                                                     | Nominal Value | Unit     | Test Method |
| Tensile Stress <sup>3, 4</sup> (100% Strain, 0.0200 in)        | 660           | psi      | ASTM D412   |
| Tensile Stress <sup>3, 4</sup> (300% Strain, 0.0200 in)        | 940           | psi      | ASTM D412   |
| Tensile Strength <sup>3, 4</sup> (Break, 0.0200 in)            | 1950          | psi      | ASTM D412   |
| Tensile Elongation <sup>3, 4</sup> (Break, 0.0200 in)          | 620           | %        | ASTM D412   |
| Hardness                                                       | Nominal Value | Unit     | Test Method |
| Durometer Hardness (Shore A)                                   | 86            |          | ASTM D2240  |
| Thermal                                                        | Nominal Value | Unit     | Test Method |
| Continuous Use Temperature                                     | 221           | °F       | UL 1581     |
| Brittleness Temperature                                        | -76.0         | °F       | ASTM D746   |
| Aging                                                          | Nominal Value | Unit     | Test Method |
| Change in Tensile Strength in Air (277°F, 168 hr)              | 10            | %        | ASTM D573   |
| Change in Ultimate Elongation in Air (277°F, 168 hr)           | -4.0          | %        | ASTM D573   |
| Change in Tensile Strength<br>140°F, 168 hr, in IRM 902 Oil    | -1.0          | %        | ASTM D471   |
| Change in Ultimate Elongation<br>140°F, 168 hr, in IRM 902 Oil | 3.0           | %        | ASTM D471   |

# Ellexar® EL-8730R

## Teknor Apex Company - Thermoplastic Elastomer

| Electrical                 | Nominal Value | Unit    | Test Method |
|----------------------------|---------------|---------|-------------|
| Volume Resistivity (122°F) | 1.0E+16       | ohms·cm | ASTM D257   |
| Dielectric Strength        | 980           | V/mil   | ASTM D149   |
| Dielectric Constant        |               |         | ASTM D150   |
| 1 kHz                      | 2.36          |         |             |
| 1 MHz                      | 2.32          |         |             |
| Dissipation Factor         |               |         | ASTM D150   |
| 1 kHz                      | 1.1E-3        |         |             |
| 1 MHz                      | 1.6E-3        |         |             |
| Flammability               | Nominal Value | Unit    | Test Method |
| Flame Rating               |               |         | UL 94       |
| 0.06 in, All Colors        | V-2           |         |             |
| 0.06 in, NT, WT, BK        | V-0           |         |             |
| Oxygen Index               | 25            | %       | ASTM D2863  |

### 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