



# Ellexar® EL-8623C (PRELIMINARY DATA)

Teknor Apex Company - Thermoplastic Elastomer

## General Information

### Product Description

Ellexar EL-8623C is a high performance thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Ellexar EL-8623C is a high hardness, high density, RoHS compliant, flame retardant grade suitable for both injection molding and extrusion.

### General

|                   |                                                                                                                                                                     |                                                                                                                                                                                      |                                                                                                                    |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Material Status   | • Commercial: Active                                                                                                                                                |                                                                                                                                                                                      |                                                                                                                    |
| Availability      | <ul style="list-style-type: none"><li>• Africa &amp; Middle East</li><li>• Asia Pacific</li></ul>                                                                   | <ul style="list-style-type: none"><li>• Europe</li><li>• Latin America</li></ul>                                                                                                     | <ul style="list-style-type: none"><li>• North America</li></ul>                                                    |
| Features          | <ul style="list-style-type: none"><li>• Chemical Resistant</li><li>• Filled</li><li>• Flame Retardant</li><li>• Good Adhesion</li><li>• Good Colorability</li></ul> | <ul style="list-style-type: none"><li>• Good Moldability</li><li>• Good Processability</li><li>• Good Toughness</li><li>• Halogenated</li><li>• High Density</li></ul>               | <ul style="list-style-type: none"><li>• High Hardness</li><li>• High Specific Gravity</li><li>• Low Flow</li></ul> |
| Uses              | <ul style="list-style-type: none"><li>• Appliance Wire Insulation</li><li>• Appliance Wire Jacketing</li><li>• Cable Jacketing</li><li>• Connectors</li></ul>       | <ul style="list-style-type: none"><li>• Flexible Cord Jacketing</li><li>• Industrial Cable Insulation</li><li>• Terminal Cable Jacketing</li><li>• Underground Power Cable</li></ul> | <ul style="list-style-type: none"><li>• Wire &amp; Cable Applications</li><li>• Wire Jacketing</li></ul>           |
| RoHS Compliance   | • RoHS Compliant                                                                                                                                                    |                                                                                                                                                                                      |                                                                                                                    |
| Appearance        | <ul style="list-style-type: none"><li>• Colors Available</li></ul>                                                                                                  | <ul style="list-style-type: none"><li>• Opaque</li></ul>                                                                                                                             |                                                                                                                    |
| Forms             | <ul style="list-style-type: none"><li>• Pellets</li></ul>                                                                                                           |                                                                                                                                                                                      |                                                                                                                    |
| Processing Method | <ul style="list-style-type: none"><li>• Extrusion</li></ul>                                                                                                         | <ul style="list-style-type: none"><li>• Injection Molding</li></ul>                                                                                                                  |                                                                                                                    |

## ASTM & ISO Properties <sup>1</sup>

| Physical                                                                 | Nominal Value | Unit     | Test Method |
|--------------------------------------------------------------------------|---------------|----------|-------------|
| Density / Specific Gravity                                               | 1.20          |          | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)                                 | 2.6           | g/10 min | ASTM D1238  |
| Elastomers                                                               | Nominal Value | Unit     | Test Method |
| Tensile Strength <sup>2, 3</sup> (Yield, 73°F, 0.0200 in)                | 3250          | psi      | ASTM D412   |
| Tensile Elongation <sup>2, 3</sup> (Break, 73°F, 0.0200 in)              | 550           | %        | ASTM D412   |
| Hardness                                                                 | Nominal Value | Unit     | Test Method |
| Durometer Hardness                                                       |               |          | ASTM D2240  |
| Shore D, 1 sec                                                           | 50            |          |             |
| Shore D, 5 sec                                                           | 48            |          |             |
| Thermal                                                                  | Nominal Value | Unit     | Test Method |
| Brittleness Temperature                                                  | -58.0         | °F       | ASTM D746   |
| Aging                                                                    | Nominal Value | Unit     | Test Method |
| Change in Tensile Strength in Air <sup>3</sup> (277°F, 168 hr)           | 12            | %        | ASTM D573   |
| Change in Ultimate Elongation in Air <sup>3</sup> (277°F, 168 hr)        | -11           | %        | ASTM D573   |
| Change in Tensile Strength <sup>3</sup><br>140°F, 168 hr, in IIR 902 Oil | -14           | %        | ASTM D471   |
| Change in Ultimate Elongation<br>140°F, 168 hr, in IIR 902 Oil           | -0.90         | %        | ASTM D471   |

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| Electrical                 | Nominal Value | Unit    | Test Method |
|----------------------------|---------------|---------|-------------|
| Volume Resistivity         |               |         | ASTM D257   |
| 73°F                       | 3.2E+16       | ohms·cm |             |
| 122°F                      | 5.1E+15       | ohms·cm |             |
| Dielectric Strength        | 1100          | V/mil   | ASTM D149   |
| Dielectric Constant        |               |         | ASTM D150   |
| 1 kHz                      | 2.45          |         |             |
| 1 MHz                      | 2.40          |         |             |
| Dissipation Factor         |               |         | ASTM D150   |
| 1 kHz                      | 3.4E-3        |         |             |
| 1 MHz                      | 1.7E-3        |         |             |
| Flammability               | Nominal Value | Unit    | Test Method |
| Flame Rating (0.06 in, NC) | HB            |         | UL 94       |
| Oxygen Index               | 24            | %       | 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