

# Telcar® TELC 89-P834-B

Thermoplastic Elastomer

Teknor Apex Company

## Message:

Telcar TELC 89-P834-B is a general purpose thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Telcar TELC 89-P834-B is a high durometer grade that is UV stabilized and RoHS compliant. This grade is suitable for both injection molding and extrusion.

| General Information |                                        |
|---------------------|----------------------------------------|
| Features            | Sunlight Resistant                     |
|                     | High elasticity                        |
|                     | Foamable property                      |
|                     | Good melt strength                     |
|                     | Good coloring                          |
|                     | General                                |
|                     | Halogen-free                           |
|                     | Extended tensile rate                  |
| Uses                | Electrical/Electronic Applications     |
|                     | Electrical components                  |
|                     | Wire and cable applications            |
|                     | Insulating material                    |
|                     | Moisture-resistant insulating material |
|                     | General                                |
| RoHS Compliance     | RoHS compliance                        |
| Appearance          | Clear/transparent                      |
| Forms               | Particle                               |
| Processing Method   | Extrusion                              |
|                     | Injection molding                      |

| Physical                                  | Nominal Value | Unit              | Test Method |
|-------------------------------------------|---------------|-------------------|-------------|
| Specific Gravity                          | 0.888         | g/cm <sup>3</sup> | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (230°C/2.16 kg) | 2.5           | g/10 min          | ASTM D1238  |
| Hardness                                  | Nominal Value | Unit              | Test Method |
| Durometer Hardness (Shore A, 15 sec)      | 80            |                   | ASTM D2240  |
| Elastomers                                | Nominal Value | Unit              | Test Method |
| Tensile Stress <sup>1</sup>               |               |                   | ASTM D412   |
| 100% strain, 0.508mm <sup>2</sup>         | 2.93          | MPa               | ASTM D412   |
| 300% strain, 0.508mm <sup>3</sup>         | 3.93          | MPa               | ASTM D412   |

|                                                              |                      |             |                    |
|--------------------------------------------------------------|----------------------|-------------|--------------------|
| Tensile Strength (fracture, 0.508mm)                         | 8.62                 | MPa         | ASTM D412          |
| Tensile Elongation (fracture, 0.508mm)                       | 700                  | %           | ASTM D412          |
| <b>Aging</b>                                                 | <b>Nominal Value</b> | <b>Unit</b> | <b>Test Method</b> |
| Change in Tensile Strength in Air (136°C, 168 hr)            | 83                   | %           | ASTM D573          |
| Change in Ultimate Elongation in Air (136°C, 168 hr)         | -4.0                 | %           | ASTM D573          |
| Change in Tensile Strength (60°C, 168 hr, in IRM 902 Oil)    | -87                  | %           | ASTM D471          |
| Change in Ultimate Elongation (60°C, 168 hr, in IRM 902 Oil) | -94                  | %           | ASTM D471          |
| <b>Thermal</b>                                               | <b>Nominal Value</b> | <b>Unit</b> | <b>Test Method</b> |
| Continuous Use Temperature                                   | 105                  | °C          | ASTM D794          |
| Brittleness Temperature                                      | -60.0                | °C          | ASTM D746          |
| RTI Elec                                                     | 50.0                 | °C          | UL 746             |
| RTI                                                          | 50.0                 | °C          | UL 746             |
| <b>Electrical</b>                                            | <b>Nominal Value</b> | <b>Unit</b> | <b>Test Method</b> |
| Volume Resistivity                                           |                      |             | ASTM D257          |
| 23°C                                                         | 2.4E+17              | ohms · cm   | ASTM D257          |
| 50°C                                                         | 2.8E+16              | ohms · cm   | ASTM D257          |
| Dielectric Strength                                          | 44                   | kV/mm       | ASTM D149          |
| Dielectric Constant                                          | 2.20                 |             | ASTM D150          |
| <b>Flammability</b>                                          | <b>Nominal Value</b> | <b>Unit</b> | <b>Test Method</b> |
| Flame Rating (1.50 mm, ALL)                                  | HB                   |             | UL 94              |
| Oxygen Index                                                 | 18                   | %           | ASTM D2863         |
| <b>Injection</b>                                             | <b>Nominal Value</b> | <b>Unit</b> |                    |
| Rear Temperature                                             | 171 - 193            | °C          |                    |
| Middle Temperature                                           | 177 - 199            | °C          |                    |
| Front Temperature                                            | 182 - 204            | °C          |                    |
| Nozzle Temperature                                           | 188 - 210            | °C          |                    |
| Processing (Melt) Temp                                       | 188 - 210            | °C          |                    |
| Mold Temperature                                             | 25.0 - 65.6          | °C          |                    |
| Injection Pressure                                           | 1.38 - 6.89          | MPa         |                    |
| Injection Rate                                               | Moderate-Fast        |             |                    |
| Back Pressure                                                | 0.172 - 0.345        | MPa         |                    |
| Screw Speed                                                  | 50 - 100             | rpm         |                    |
| Cushion                                                      | 3.81 - 25.4          | mm          |                    |
| <b>Extrusion</b>                                             | <b>Nominal Value</b> | <b>Unit</b> |                    |
| Cylinder Zone 1 Temp.                                        | 166 - 188            | °C          |                    |
| Cylinder Zone 2 Temp.                                        | 171 - 193            | °C          |                    |
| Cylinder Zone 3 Temp.                                        | 177 - 199            | °C          |                    |
| Cylinder Zone 5 Temp.                                        | 182 - 204            | °C          |                    |
| Die Temperature                                              | 190 - 210            | °C          |                    |

#### Extrusion instructions

螺杆转速30 - 100 rpm

#### NOTE

- |    |                             |
|----|-----------------------------|
| 1. | die cut from extruded tapes |
| 2. | Mouth die C, 510mm/min      |
| 3. | C mold, 510mm/min           |

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### Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

