



# Telcar® TELC 1000-92 UV-2 BLACK 550

Teknor Apex Company - Thermoplastic Elastomer

## General Information

### Product Description

Telcar TELC 1000-92 UV-2 BLACK 550 is a high performance thermoplastic elastomer used in automotive and industrial applications. Telcar TELC 1000-92 UV-2 BLACK 550 is a high hardness, low density, RoHS compliant grade suitable for injection molding.

### General

|                           |                                                                     |                                                           |                 |
|---------------------------|---------------------------------------------------------------------|-----------------------------------------------------------|-----------------|
| Material Status           | • Commercial: Active                                                |                                                           |                 |
| Availability              | • Africa & Middle East<br>• Asia Pacific                            | • Europe<br>• Latin America                               | • North America |
| Features                  | • Chemical Resistant<br>• Good Adhesion<br>• Good Impact Resistance | • Good Processability<br>• High Hardness<br>• Low Density | • UV Resistant  |
| Uses                      | • Automotive Exterior Parts<br>• Automotive Interior Parts          | • Industrial Applications<br>• Rubber Replacement         |                 |
| RoHS Compliance           | • RoHS Compliant                                                    |                                                           |                 |
| Automotive Specifications | • CHRYSLER MS-DB-590 CPN4844 Color: Black <sup>1</sup>              |                                                           |                 |
| Appearance                | • Black                                                             |                                                           |                 |
| Forms                     | • Pellets                                                           |                                                           |                 |
| Processing Method         | • Injection Molding                                                 |                                                           |                 |

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

| Physical                                  | Nominal Value | Unit                  | Test Method |
|-------------------------------------------|---------------|-----------------------|-------------|
| Density / Specific Gravity                | 0.913         |                       | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (230°C/2.16 kg) | 2.6           | g/10 min              | ASTM D1238  |
| Molding Shrinkage - Flow                  |               |                       | ASTM D955   |
| 356°F, 30 min                             | 0.013         | in/in                 |             |
| 24 hr                                     | 0.011         | in/in                 |             |
| Mechanical                                | Nominal Value | Unit                  | Test Method |
| Flexural Modulus                          | 42100         | psi                   | ASTM D790   |
| Elastomers                                | Nominal Value | Unit                  | Test Method |
| Tensile Stress                            |               |                       | ISO 37      |
| Across Flow : 100% Strain                 | 1020          | psi                   |             |
| Flow : 100% Strain                        | 1390          | psi                   |             |
| Tensile Stress                            |               |                       | ISO 37      |
| Across Flow : Break                       | 1070          | psi                   |             |
| Flow : Break                              | 1440          | psi                   |             |
| Tensile Elongation                        |               |                       | ISO 37      |
| Across Flow : Break                       | 370           | %                     |             |
| Flow : Break                              | 270           | %                     |             |
| Tear Strength - Across Flow               | 500           | lbf/in                | ISO 34-1    |
| Compression Set                           |               |                       | ISO 815     |
| 73°F, 22 hr                               | 60            | %                     |             |
| 158°F, 22 hr                              | 74            | %                     |             |
| 194°F, 70 hr                              | 93            | %                     |             |
| Impact                                    | Nominal Value | Unit                  | Test Method |
| Notched Izod Impact (-40°F)               | No Break      |                       | ASTM D256   |
| Gardner Impact (-22°F)                    | 300           | in-lb                 | ASTM D3029  |
| Tensile Impact Strength                   | 224           | ft-lb/in <sup>2</sup> | ASTM D1822  |

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| Hardness                                                                                    | Nominal Value | Unit     | Test Method |
|---------------------------------------------------------------------------------------------|---------------|----------|-------------|
| Durometer Hardness (Shore D, 10 sec)                                                        | 42            |          | ASTM D2240  |
| Shore Hardness                                                                              |               |          | ISO 868     |
| Shore D, 1 sec                                                                              | 49            |          |             |
| Shore D, 5 sec                                                                              | 41            |          |             |
| Thermal                                                                                     | Nominal Value | Unit     | Test Method |
| Deflection Temperature Under Load (66 psi, Unannealed)                                      | 145           | °F       | ASTM D648   |
| Deflection Temperature Under Load                                                           |               |          | ASTM D648   |
| 264 psi, Unannealed                                                                         | 105           | °F       |             |
| Glass Transition Temperature                                                                | -68.6         | °F       | ASTM E1356  |
| CLTE - Flow                                                                                 | 6.6E-5        | in/in/°F | ASTM D696   |
| CLTE - Transverse                                                                           | 6.5E-5        | in/in/°F | ASTM D696   |
| Aging                                                                                       | Nominal Value | Unit     | Test Method |
| Change in Tensile Strength in Air                                                           |               |          | ASTM D573   |
| --                                                                                          | 6.0           | %        |             |
| 230°F, 1008 hr                                                                              | 10            | %        |             |
| 250°F, 1008 hr                                                                              | 7.0           | %        |             |
| Change in Tensile Strength in Air                                                           |               |          | ISO 188     |
| 230°F, 1008 hr                                                                              | 1.6           | %        |             |
| 257°F, 168 hr                                                                               | 4.3           | %        |             |
| Change in Ultimate Elongation in Air                                                        |               |          | ASTM D573   |
| 230°F, 1008 hr                                                                              | -67           | %        |             |
| 250°F, 1008 hr                                                                              | -63           | %        |             |
| Change in Tensile Strain at Break in Air                                                    |               |          | ISO 188     |
| 230°F, 1008 hr                                                                              | -43           | %        |             |
| 257°F, 168 hr                                                                               | -40           | %        |             |
| Change in Shore Hardness in Air                                                             |               |          | ISO 188     |
| Shore D, 230°F, 1008 hr                                                                     | 1.7           |          |             |
| Flammability                                                                                | Nominal Value | Unit     | Test Method |
| Burning Rate                                                                                | 1.2           | in/min   | ISO 3795    |
| Fill Analysis                                                                               | Nominal Value | Unit     | Test Method |
| Apparent Viscosity (392°F, 206 sec <sup>-1</sup> )                                          | 516           | Pa·s     | ASTM D3835  |
| Additional Information                                                                      | Nominal Value | Unit     |             |
| Xenon Weatherometer - Delta E - 2500 kJ                                                     | 0.170         |          |             |
| Instrumented Dart Impact Energy @ Yield, -40°C, 9000 in/min, Ductile Failure: 200 in-lbs    |               |          |             |
| Instrumented Dart Impact Deflection @ Break, -40°C, 9000 in/min, Ductile Failure: 1359 mils |               |          |             |
| Instrumented Dart Impact Energy @ Break, -40°C, 9000 in/min, Ductile Failure: 350 in-lbs    |               |          |             |
| Fogging, Kaake Buchler, 3 hrs, 100°C: 92                                                    |               |          |             |
| Tear Strength, ASTM D1004, Die C: 364 lb/in                                                 |               |          |             |
| Heat Aging Performance Izod Impact, 1000 hrs, 120°C: No Break                               |               |          |             |
| Tensile Impact Strength, ASTM D1822: >224 ft-lb/in <sup>2</sup>                             |               |          |             |
| Flammability, Burn Rate, FMVSS 302, Max 100, 30.2 mm/min: Pass                              |               |          |             |
| Flammability, Burn Rate, FMVSS 302, Max 100, 1.2 in/min: Pass                               |               |          |             |

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### Processing Information

| Injection              | Nominal Value | Unit |
|------------------------|---------------|------|
| Rear Temperature       | 340 to 380    | °F   |
| Middle Temperature     | 350 to 390    | °F   |
| Front Temperature      | 360 to 400    | °F   |
| Nozzle Temperature     | 370 to 410    | °F   |
| Processing (Melt) Temp | 370 to 410    | °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).

### Notes

<sup>1</sup> (Approved as TELC 1000-92 UV-2 BLACK 550)

<sup>2</sup> Typical properties: these are not to be construed as specifications.