



# Sarlink® TPV 3190

Teknor Apex Company - Thermoplastic Vulcanizate

## General Information

### Product Description

SARLINK® TPV 3100 series are engineered materials designed primarily for general purpose, automotive and industrial applications requiring a good balance of thermal, mechanical, and physical properties. SARLINK® 3190, available in NAT and BLK, is a hard hardness, low density, multi-purpose thermoplastic vulcanizate that can be processed by injection molding, blow molding or extrusion for applications such as grips, seals, gaskets, profiles, hose & tubes, bellows, and other articles.

### General

|                           |                                                                                                                        |                                                                                                                             |                                                                                                                         |
|---------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Material Status           | • Commercial: Active                                                                                                   |                                                                                                                             |                                                                                                                         |
| Availability              | • Africa & Middle East<br>• Asia Pacific                                                                               | • Europe<br>• Latin America                                                                                                 | • North America                                                                                                         |
| Features                  | • Chemical Resistant<br>• Fatigue Resistant<br>• General Purpose<br>• Good Adhesion<br>• Good Flexibility              | • Good Moldability<br>• Good Processability<br>• Good Surface Finish<br>• Good Weather Resistance<br>• Heat Aging Resistant | • High Hardness<br>• Low Density<br>• Low Specific Gravity<br>• Resilient                                               |
| Uses                      | • Automotive Applications<br>• Automotive Exterior Parts<br>• Automotive Interior Parts<br>• Automotive Under the Hood | • Blow Molding Applications<br>• Gaskets<br>• Industrial Applications<br>• Profiles                                         | • Rubber Replacement<br>• Seals<br>• Sheet<br>• Weatherstripping                                                        |
| Agency Ratings            | • UL 94                                                                                                                |                                                                                                                             |                                                                                                                         |
| RoHS Compliance           | • RoHS Compliant                                                                                                       |                                                                                                                             |                                                                                                                         |
| Automotive Specifications | • FORD WSD-M2D382-A1 Color: Black<br>• GM QK 3526 Type 6 Color: Black<br>• GM QK 3526 Type 6 Color: Natural            | • NISSAN Unspecified Color: Black<br>• RENAULT F.E.M. 03 20 007 Color: Black<br>• STELLANTIS B62 0300 Color: Black          | • STELLANTIS MS-AR-80 Type E Color: Black<br>• STELLANTIS MS-AR-80 Type E Color: Natural<br>• VAG VW501 23 Color: Black |
| UL File Number            | • QMFZ2.E54709                                                                                                         |                                                                                                                             |                                                                                                                         |
| Appearance                | • Black                                                                                                                | • Natural Color                                                                                                             | • Opaque                                                                                                                |
| Forms                     | • Pellets                                                                                                              |                                                                                                                             |                                                                                                                         |
| Processing Method         | • Blow Molding                                                                                                         | • Extrusion                                                                                                                 | • Injection Molding                                                                                                     |

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

| Physical                   | Nominal Value | Unit              | Test Method |
|----------------------------|---------------|-------------------|-------------|
| Density / Specific Gravity | 0.940         |                   | ASTM D792   |
| Density                    | 0.940         | g/cm <sup>3</sup> | ISO 1183    |
| Elastomers                 | Nominal Value | Unit              | Test Method |
| Tensile Stress             |               |                   | ASTM D412   |
| Across Flow : 100% Strain  | 957           | psi               |             |
| Flow : 100% Strain         | 1450          | psi               |             |
| Tensile Stress             |               |                   | ISO 37      |
| Across Flow : 100% Strain  | 957           | psi               |             |
| Flow : 100% Strain         | 1450          | psi               |             |
| Tensile Strength           |               |                   | ASTM D412   |
| Across Flow : Break        | 1960          | psi               |             |
| Flow : Break               | 1750          | psi               |             |
| Tensile Stress             |               |                   | ISO 37      |
| Across Flow : Break        | 1960          | psi               |             |
| Flow : Break               | 1750          | psi               |             |

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| Elastomers                                             | Nominal Value | Unit   | Test Method |
|--------------------------------------------------------|---------------|--------|-------------|
| Tensile Elongation                                     |               |        | ASTM D412   |
| Across Flow : Break                                    | 700           | %      |             |
| Flow : Break                                           | 380           | %      |             |
| Tensile Elongation                                     |               |        | ISO 37      |
| Across Flow : Break                                    | 700           | %      |             |
| Flow : Break                                           | 380           | %      |             |
| Tear Strength - Across Flow                            | 460           | lbf/in | ASTM D624   |
| Tear Strength - Across Flow <sup>2</sup>               | 463           | lbf/in | ISO 34-1    |
| Compression Set                                        |               |        | ASTM D395   |
| 73°F, 22 hr                                            | 48            | %      |             |
| 158°F, 22 hr                                           | 61            | %      |             |
| 257°F, 70 hr                                           | 75            | %      |             |
| Compression Set                                        |               |        | ISO 815     |
| 73°F, 22 hr                                            | 48            | %      |             |
| 158°F, 22 hr                                           | 61            | %      |             |
| 257°F, 70 hr                                           | 75            | %      |             |
| Hardness                                               | Nominal Value | Unit   | Test Method |
| Durometer Hardness                                     |               |        | ASTM D2240  |
| Shore A, 5 sec, Extruded                               | 89            |        |             |
| Shore A, 5 sec, Injection Molded                       | 92            |        |             |
| Shore Hardness                                         |               |        | ISO 868     |
| Shore A, 5 sec, Extruded                               | 89            |        |             |
| Shore A, 5 sec, Injection Molded                       | 92            |        |             |
| Thermal                                                | Nominal Value | Unit   | Test Method |
| RTI Elec                                               | 122           | °F     | UL 746B     |
| RTI Imp                                                | 122           | °F     | UL 746B     |
| RTI Str                                                | 122           | °F     | UL 746B     |
| Aging                                                  | Nominal Value | Unit   | Test Method |
| Change in Tensile Strength in Air - Across Flow        |               |        | ASTM D573   |
| 275°F, 1000 hr                                         | -10           | %      |             |
| 100% Strain, 275°F, 1000 hr                            | 9.0           | %      |             |
| 302°F, 168 hr                                          | -5.0          | %      |             |
| 100% Strain, 302°F, 168 hr                             | 11            | %      |             |
| Change in Tensile Strength in Air - Across Flow        |               |        | ISO 188     |
| 275°F, 1000 hr                                         | -10           | %      |             |
| 100% Strain 275°F, 1000 hr                             | 9.0           | %      |             |
| 302°F, 168 hr                                          | -5.0          | %      |             |
| 100% Strain 302°F, 168 hr                              | 11            | %      |             |
| Change in Ultimate Elongation in Air - Across Flow     |               |        | ASTM D573   |
| 275°F, 1000 hr                                         | -15           | %      |             |
| 302°F, 168 hr                                          | -12           | %      |             |
| Change in Tensile Strain at Break in Air - Across Flow |               |        | ISO 188     |
| 275°F, 168 hr                                          | -15           | %      |             |
| 302°F, 168 hr                                          | -12           | %      |             |
| Change in Durometer Hardness in Air                    |               |        | ASTM D573   |
| Shore A, 275°F, 1000 hr                                | -1.0          |        |             |
| Shore A, 302°F, 168 hr                                 | 2.0           |        |             |

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| Aging                                            | Nominal Value | Unit | Test Method |
|--------------------------------------------------|---------------|------|-------------|
| Change in Shore Hardness in Air                  |               |      | ISO 188     |
| Shore A, 275°F, 1000 hr                          | -1.0          |      |             |
| Shore A, 302°F, 168 hr                           | 2.0           |      |             |
| Change in Volume (257°F, 70 hr, in IRM 903 Oil)  | 73            | %    | ASTM D471   |
| Change in Volume (257°F, 70 hr, in IRM 903 Oil)  | 73            | %    | ISO 1817    |
| Flammability                                     | Nominal Value | Unit | Test Method |
| Flame Rating (0.06 in, Natural and Black Colors) | HB            |      | UL 94       |
| Additional Information                           | Nominal Value | Unit | Test Method |
| Apparent Shear Viscosity - Capillary, @ 206/s    |               |      |             |
| 392°F                                            | 310           | Pa·s | ASTM D3835  |
| 392°F                                            | 310           | Pa·s | ISO 11443   |

### Processing Information

| Injection              | Nominal Value | Unit |
|------------------------|---------------|------|
| Drying Temperature     | 180           | °F   |
| Drying Time            | 3.0           | hr   |
| Rear Temperature       | 356 to 419    | °F   |
| Middle Temperature     | 356 to 419    | °F   |
| Front Temperature      | 356 to 419    | °F   |
| Nozzle Temperature     | 369 to 428    | °F   |
| Processing (Melt) Temp | 365 to 428    | °F   |
| Mold Temperature       | 50 to 131     | °F   |
| Back Pressure          | 14.5 to 145   | psi  |
| Screw Speed            | 100 to 200    | rpm  |
| Extrusion              | Nominal Value | Unit |
| Drying Temperature     | 180           | °F   |
| Drying Time            | 3.0           | hr   |
| Cylinder Zone 1 Temp.  | 356 to 392    | °F   |
| Cylinder Zone 2 Temp.  | 356 to 401    | °F   |
| Cylinder Zone 3 Temp.  | 369 to 410    | °F   |
| Cylinder Zone 4 Temp.  | 369 to 410    | °F   |
| Melt Temperature       | 383 to 419    | °F   |
| Die Temperature        | 383 to 419    | °F   |
| Take-Off Roll          | 68 to 122     | °F   |

### Extrusion Notes

Screen Pack: 20 to 60 mesh  
Screw: general purpose  
Compression Ratio: 3:1

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Method Ba, Angle (Unnicked)