



# Sarlink® TPV R2 3180B XRD (PRELIMINARY DATA)

Teknor Apex Company - Thermoplastic Vulcanizate

## General Information

### Product Description

Sarlink® R2 3180B XRD is a multi-purpose thermoplastic vulcanizate (TPV) containing 25% post-industrial recycled (PIR) content. The addition of recycled content helps promote a circular economy while decreasing reliance on virgin fossil-based resources and energy. Sarlink R2 3180B XRD is essentially the functional equivalent of its virgin counterpart in terms of processing and performance. Designed for the automotive, industrial, and building & construction markets, this high-durometer TPV can be used in both injection molding and extrusion applications and can be overmolded or co-extruded with PP or other TPEs.

### General

|                   |                                                                                                                                                  |                                                                                                                            |                                                            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| Material Status   | • Preliminary Data                                                                                                                               |                                                                                                                            |                                                            |
| Availability      | • Africa & Middle East<br>• Asia Pacific                                                                                                         | • Europe<br>• Latin America                                                                                                | • North America                                            |
| Recycled Content  | • Post-Industrial (PIR)/Pre-Consumer, 25%                                                                                                        |                                                                                                                            |                                                            |
| Features          | • Chemical Resistant<br>• General Purpose<br>• Good Adhesion<br>• Good Flexibility                                                               | • Good Moldability<br>• Good Processability<br>• Good Surface Finish<br>• Good Weather Resistance                          | • Heat Aging Resistant<br>• Medium Hardness<br>• Resilient |
| Uses              | • Agricultural Applications<br>• Appliance Components<br>• Automotive Applications<br>• Automotive Exterior Parts<br>• Automotive Interior Parts | • Automotive Under the Hood<br>• Blow Molding Applications<br>• General Purpose<br>• Industrial Applications<br>• Profiles | • Rubber Replacement<br>• Seals<br>• Weatherstripping      |
| RoHS Compliance   | • RoHS Compliant                                                                                                                                 |                                                                                                                            |                                                            |
| 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 | 0.932         |                   | ASTM D792   |
| Density                    | 0.930         | g/cm <sup>3</sup> | ISO 1183    |
| Elastomers                 | Nominal Value | Unit              | Test Method |
| Tensile Stress             |               |                   | ASTM D412   |
| Across Flow : 100% Strain  | 551           | psi               |             |
| Flow : 100% Strain         | 696           | psi               |             |
| Tensile Stress             |               |                   | ISO 37      |
| Across Flow : 100% Strain  | 551           | psi               |             |
| Flow : 100% Strain         | 696           | psi               |             |
| Tensile Strength           |               |                   | ASTM D412   |
| Across Flow : Break        | 1100          | psi               |             |
| Flow : Break               | 943           | psi               |             |
| Tensile Stress             |               |                   | ISO 37      |
| Across Flow : Break        | 1100          | psi               |             |
| Flow : Break               | 943           | psi               |             |
| Tensile Elongation         |               |                   | ASTM D412   |
| Across Flow : Break        | 700           | %                 |             |
| Flow : Break               | 480           | %                 |             |

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| Elastomers                                             | Nominal Value | Unit   | Test Method |
|--------------------------------------------------------|---------------|--------|-------------|
| Tensile Elongation                                     |               |        | ISO 37      |
| Across Flow : Break                                    | 700           | %      |             |
| Flow : Break                                           | 480           | %      |             |
| Tear Strength - Across Flow                            | 232           | lbf/in | ASTM D624   |
| Tear Strength - Across Flow <sup>2</sup>               | 227           | lbf/in | ISO 34-1    |
| Compression Set                                        |               |        | ASTM D395   |
| 73°F, 22 hr                                            | 29            | %      |             |
| 158°F, 22 hr                                           | 41            | %      |             |
| 257°F, 70 hr                                           | 47            | %      |             |
| Compression Set                                        |               |        | ISO 815     |
| 73°F, 22 hr                                            | 29            | %      |             |
| 158°F, 22 hr                                           | 41            | %      |             |
| 257°F, 70 hr                                           | 47            | %      |             |
| Hardness                                               | Nominal Value | Unit   | Test Method |
| Durometer Hardness                                     |               |        | ASTM D2240  |
| Shore A, 5 sec, Extruded                               | 80            |        |             |
| Shore A, 5 sec, Injection Molded                       | 84            |        |             |
| Shore Hardness                                         |               |        | ISO 868     |
| Shore A, 5 sec, Extruded                               | 80            |        |             |
| Shore A, 5 sec, Injection Molded                       | 84            |        |             |
| Aging                                                  | Nominal Value | Unit   | Test Method |
| Change in Tensile Strength in Air - Across Flow        |               |        | ASTM D573   |
| 257°F, 1000 hr                                         | -8.9          | %      |             |
| 100% Strain, 257°F, 1000 hr                            | 7.8           | %      |             |
| 302°F, 168 hr                                          | -2.6          | %      |             |
| 100% Strain, 302°F, 168 hr                             | 11            | %      |             |
| Change in Tensile Strength in Air - Across Flow        |               |        | ISO 188     |
| 257°F, 1000 hr                                         | -8.9          | %      |             |
| 100% Strain 257°F, 1000 hr                             | 7.8           | %      |             |
| 302°F, 168 hr                                          | -2.6          | %      |             |
| 100% Strain 302°F, 168 hr                              | 11            | %      |             |
| Change in Ultimate Elongation in Air - Across Flow     |               |        | ASTM D573   |
| 257°F, 1000 hr                                         | -11           | %      |             |
| 302°F, 168 hr                                          | -10           | %      |             |
| Change in Tensile Strain at Break in Air - Across Flow |               |        | ISO 188     |
| 257°F, 1000 hr                                         | -11           | %      |             |
| 302°F, 168 hr                                          | -10           | %      |             |
| Change in Durometer Hardness in Air                    |               |        | ASTM D573   |
| Shore A, 257°F, 1000 hr                                | 0.20          |        |             |
| Shore A, 302°F, 168 hr                                 | 1.1           |        |             |
| Change in Shore Hardness in Air                        |               |        | ISO 188     |
| Shore A, 257°F, 1000 hr                                | 0.20          |        |             |
| Shore A, 302°F, 168 hr                                 | 1.1           |        |             |
| Change in Volume (257°F, 70 hr, in IRM 903 Oil)        | 99            | %      | ASTM D471   |
| Change in Volume (257°F, 70 hr, in IRM 903 Oil)        | 99            | %      | ISO 1817    |

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| Additional Information     | Nominal Value | Unit | Test Method |
|----------------------------|---------------|------|-------------|
| Apparent Shear Viscosity   |               |      |             |
| Capillary, @ 206/s : 392°F | 250           | Pa·s | ISO 11443   |
| Capillary, @206/s : 392°F  | 250           | Pa·s | ASTM D3835  |

### 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)