

SARLINK® 4000 series are multi-purpose thermoplastic elastomers with excellent flex fatigue resistance, heat aging, improved elasticity and resilience designed primarily for demanding automotive applications. SARLINK® 4190 is a high hardness grade for use in injection molded parts, sheet and profile extrusions such as weather-stripping and expansion joints. It can also be blow molded into boots and ducts.

| Typical properties*   | Test method              | Typical value                            | Units S.I.                         |
|---|--------------------------|--|------------------------------------|
| <b>Density</b>  | ISO 1183                 | 950                                      | Kg/m <sup>3</sup>                  |
| <b>Hardness shore (5 sec)</b><br>Extruded sample<br>Injection molded sample   | ISO 868                  | 86A<br>93A/31D                           |                                    |
| <b>Stress/strain properties</b><br><u>Flow direction</u><br>Modulus 100%<br>Tensile strength<br>Elongation at break<br><u>Cross direction</u><br>Modulus 100%<br>Tensile strength<br>Elongation at break                                  | ISO 37 (II)              | 8.3<br>10.8<br>515<br>6.4<br>14.0<br>650 | MPa<br>MPa<br>%<br>MPa<br>MPa<br>% |
| <b>Tear strength (cross direction)</b><br>Trouser<br>Unnicked angle   | ISO 34 A<br>ISO 34 B (a) | 26<br>71                                 | kN/m<br>kN/m                       |
| <b>Compression set</b><br>72h/23°C<br>22h/70°C<br>22h/100°C   | ISO 815                  | 41<br>56<br>69                           | %<br>%<br>%                        |
| <b>Hot air aging</b><br><u>1000h/135°C</u><br>Change in hardness<br>Retention tensile strength<br>Retention elongation at break<br><u>336h/150°C</u><br>Change in hardness<br>Retention tensile strength<br>Retention elongation at break | ISO 188                  | +2<br>92<br>84<br>0<br>81<br>80          | Pts<br>%<br>%<br>pts<br>%<br>%     |
| <b>Volume swell</b><br>72h/100°C water<br>168h/100°C ASTM oil 1<br>168h/23°C ref. fuel B  | ISO 1817                 | +2<br>+15<br>+40                         | %<br>%<br>%                        |

\* Tests are conducted on injection-molded plaques unless indicated otherwise.

\*\* With the exception of contact with foods of type V, low moisture fat and oils, as identified in table 1 of §176.170(c). This material does not comply with any European food contact regulations.

SARLINK® 4190 complies with FDA regulation 21 CFR 177.2600\*\* and can therefore be used for repeated use food packaging and house ware applications such as seals, dispensing valves, gaskets and profiles.

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SARLINK® 4190 is a polypropylene based elastomer which can be processed on conventional thermoplastic equipment for injection molding, extrusion and blow molding. This product has a wide processing window in most applications. Melt temperatures from 185°C to 220°C can be used. Do not exceed 260°C. Drying is recommended for extrusion and blow molding (3 hours at 80°C). Drying is best accomplished in a desiccant dryer.

| INJECTION MOULDING CONDITIONS |                                   |  | EXTRUSION CONDITIONS |  |   |
|-------------------------------|-----------------------------------|--|----------------------|--|---|
| Melt temperature              |                                   | 185-220°C  | Melt temperature     |  | 195-215°C   |
| Barrel Temperatures           | Rear<br>Middle<br>Front<br>Nozzle | 180-215°C<br>180-215°C<br>180-215°C<br>187-220°C | Barrel Temperatures  | Rear<br>Transition<br>Metering<br>Front<br>Die | 180-200°C<br>180-205°C<br>187-210°C<br>187-210°C<br>195-215°C |
| Mould temperature             |                                   | 10-55°C  |                      |  |   |
| Screw Speed                   |                                   | 100-200 RPM                                      | Roll Temperature     |  | 20-50°C   |
| Back Pressure                 |                                   | 0.1-1 MPa  | Screen Pack          |  | 20 to 60 mesh   |
| Screw                         | General Purpose                   |  | Screw                | General Purpose 3:1 compression ratio          |   |

#### PURGING

SARLINK® 4190 has excellent melt stability. Empty the barrel for idle periods of 30 minutes or longer. Purge thoroughly before and after use of this product with polyethylene or polypropylene.

#### RECYCLING/REGRIND

This product can be reprocessed. Physical properties are generally not degraded. Dry regrind prior to reprocessing. Drying is best accomplished in a desiccant dryer.

#### COLOURING

The use of polyolefin based color concentrates is recommended. Apply backpressure in injection molding to disperse color.

#### BONDING/ASSEMBLY

Thermal bonding techniques can be used to form high strength bonds. Adhesive bonding can be achieved with specialized adhesives. Adhesive bond strength is limited due to the polypropylene base of this material.

#### STORAGE & HANDLING

SARLINK® 4190 is available in 20 kg polyethylene bags (1000 kg per pallet). It has a storage life at normal temperatures of several years. Please refer to the Material Safety Data Sheet for this grade prior to first time handling.