

SARLINK® 4180 is a highly engineered Thermoplastic Elastomer for use in demanding applications. SARLINK® 4180 is a medium hardness grade possessing exceptional tensile strength, superior compression set, chemical resistance and high temperature performance. It can be easily processed by injection molding, blow molding or extrusion for various applications such as boots and bellows, seals, gaskets as well as other profiles and articles.

Typical properties*	Test method	S.I.		U.S.	
		Typical value	Units	Typical value	Units
Hardness Shore A (5 sec) Injection molded sample Extruded sample	ASTM D-2240, 5 sec. Delay 5 sec. Delay	83	--	83	--
		79	--	79	--
Specific Gravity	ASTM D-792	0.96	--	0.96	--
Stress/Strain properties <u>Flow direction</u> Tensile strength Modulus at 100% Elongation at break <u>Cross direction</u> Tensile strength Modulus at 100% Elongation at break	ASTM D-412, Die C	8.0	MPa	1160	Psi
		5.3	MPa	769	Psi
		396	%	396	%
		10.5	MPa	1523	Psi
		4.7	MPa	682	Psi
		501	%	501	%
Tear Strength <u>Cross direction</u> Unnicked	ASTM D-624, Die C	48	kN/m	274	Pli
Compression set 22h/23°C 22h/70°C 70h/125°C	ASTM D-395, Method B	32	%	32	%
		35	%	35	%
		51	%	51	%
Hot air aging <u>168h/150°C, Cross Direction</u> Change in hardness Retention tensile strength Retention modulus at 100% Retention elongation at break <u>1000h/135°C, Cross Direction</u> Change in hardness Retention tensile strength Retention modulus at 100% Retention elongation at break	ASTM D-573	2.4	--	2.4	--
		90	%	90	%
		102	%	102	%
		85	%	85	%
		3.0	--	3.0	--
		101	%	101	%
		107	%	107	%
		87	%	87	%
		Volume swell 70h/125°C Oil #3	ASTM D-471	66	%
Rheology <u>Apparent Shear Viscosity</u> @ 206 1/s, 200°C	ASTM D-3835	348	Pa.s	348	Pa.s

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

SARLINK® 4180 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 360°F to 430°F can be used. Do not exceed 450°F. Drying is recommended for extrusion and blow molding and any time the material is used from an unsealed package. Dry three (3) hours at 180°F. Drying is best accomplished in a desiccant dryer.

INJECTION MOULDING CONDITIONS			EXTRUSION CONDITIONS		
Melt temperature		360-430°F	Melt temperature		380-420°F
Barrel Temperatures	Rear Middle Front Nozzle	350-420°F 350-420°F 350-420°F 370-430°F	Barrel Temperatures	Rear Transition Metering Front Die	360-400°F 360-400°F 370-410°F 370-410°F 380-420°F
Mould temperature		50-150°F			
Screw Speed		100-200 RPM	Roll Temperature		70-120°F
Back Pressure		10-150 psi	Screen Pack		20 to 60 mesh
Screw	General Purpose 20:1 L/D ratio		Screw	General Purpose 3:1 compression ratio	

PURGING

SARLINK® 4180 has excellent melt stability. Empty the barrel for idle periods of thirty (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.

COLORING

The use of polyolefin based color concentrates is recommended. Apply back pressure 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. Bond strength is limited due to the polypropylene base of this material.

STORAGE & HANDLING

SARLINK® 4180 is available in 55 lb. foil lined bags (up to 2,200 lbs. per pallet) or 1,100 lb. polyethylene lined gaylords. 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.