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Sarlink® 3180DSM Thermoplastic Elastomers Inc. - *Thermoplastic Elastomer*Unit System: English**Actions****Legend** ([Open](#))**General Information****Product Description**

A medium hardness, multi-purpose thermoplastic elastomer featuring excellent compression set and high temperature performance. Sarlink® 3180 can be processed by blow molding, injection molding or extrusion for applications such as grips, seals, gaskets, profiles and other articles.

General

Material Status	Commercial: Active
Availability	- Asia - Australia - Europe - North America - Pacific Rim - South America
Test Standards Available	- ASTM - ISO
Features	- Fatigue Resistant - Hardness, High - Heat Aging Resistance, Good - Resilient
Uses	- Gaskets - Packaging, Food - Profiles - Seals - Sheet - Valves/Valve Parts
Agency Ratings	FDA 21 CFR 177.2600 ¹
Forms	Pellets
Processing Method	- Blow Molding - Extrusion - Injection Molding

ASTM and ISO Properties ²

Physical	Nominal Value	Unit	Test Method
Density -Specific Gravity	0.950	sp gr 23/23°C	ASTM D792
Density	0.940	g/cm ³	ISO 1183
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress @ 100%			ASTM D412
(--)	Across Flow: 638	psi	
(--)	Flow: 740	psi	
Tensile Stress at 100% ³			ISO 37
(--)	Across Flow: 609	psi	
(--)	Flow: 1060	psi	
Tensile Str @ Yield Elast			ASTM D412
(--)	Across Flow: 1410	psi	
(--)	Flow: 1030	psi	
Tensile Stress at Break ³			ISO 37
(--)	Across Flow: 1410	psi	
(--)	Flow: 1120	psi	
Elongation @ Break Elast			ASTM D412
(--)	Across Flow: 670	%	
(--)	Flow: 430	%	
Tensile Strain at Break ³			ISO 37
(--)	Across Flow: 700	%	
(--)	Flow: 380	%	
Tear Strength (Die C)	Across Flow: 290	lbf/in	ASTM D624
Tear Strength			ISO 34-1
(--) ⁴	Across Flow: 130	lbf/in	
(--) ⁵	Across Flow: 280	lbf/in	
Compression Set ⁶			ASTM D395
(73 °F, 22.0 hr)	28	%	
(158 °F, 22.0 hr)	46	%	
(212 °F, 22.0 hr)	52	%	
Compression Set			ISO 815

(73 °F, 72.0 hr)	40 %	
(158 °F, 22.0 hr)	50 %	
(212 °F, 22.0 hr)	60 %	
Hardness	Nominal Value	Unit Test Method
Durometer Hardness		ASTM D2240
(A Scale (5 sec), Extruded)	80	
(A Scale (5 sec), Injection Molded)	84	
Shore Hardness		ISO 868
(Shore A (5 sec), Extruded)	80	
(Shore A (5 sec), Injection Molded)	86	
Aging	Nominal Value	Unit Test Method
Change in Tensile Strength in Air		ASTM D573
(257 °F, 1000 hr)	Across Flow: -4.0 %	
(257 °F, 1000 hr)	100 % Strain, Across Flow: -15 %	
(302 °F, 168 hr)	Across Flow: -9.0 %	
(302 °F, 168 hr)	100 % Strain, Across Flow: 8.0 %	
Change in Tensile Strength in Air		ISO 188
(257 °F, 1000 hr)	-10 %	
(302 °F, 336 hr)	-10 %	
Change in Ultimate Elongation in Air		ASTM D573
(257 °F, 1000 hr)	Across Flow: -10 %	
(302 °F, 168 hr)	Across Flow: -15 %	
Change in Tensile Strain at Break in Air		ISO 188
(257 °F, 1000 hr)	-9.0 %	
(302 °F, 336 hr)	-15 %	
Change in Durometer Hardness in Air		ASTM D573
(257 °F, 1000 hr)	2.0	
(302 °F, 168 hr)	1.0	
Change in Shore Hardness in Air		ISO 188
(257 °F, 1000 hr)	Shore A: 0.0	
(302 °F, 336 hr)	Shore A: 2.0	
Change in Volume		ASTM D471
(250 °F, 24 hr, in ASTM Oil #3)	81 %	
(257 °F, 70 hr, in ASTM Oil #3)	95 %	
Change in Volume		ISO 1817
(73 °F, 168 hr, in Reference Fuel B)	66 %	
(212 °F, 72 hr, in Water)	1.0 %	
(212 °F, 168 hr, in ASTM #1 Oil)	28 %	
Fill Analysis	Nominal Value	Unit Test Method
Apparent Viscosity (392 °F, 206 sec ⁻¹)	310.0 Pa·s	ASTM D3835

Processing Information

Injection	Nominal Value	Unit
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	50.0 to 131	°F
Back Pressure	14.5 to 145	psi
Screw Speed	100 to 200	rpm
Extrusion	Nominal Value	Unit
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	68.0 to 122	°F
Extrusion Notes		
Screen Pack: 20 to 60 mesh		
Screw: general purpose		
Compression Ratio: 3:1		

Notes

1	When used unmodified for the manufacture of food contact articles, Sarlink® 3180 will comply with Food Additive Regulations FDA 21 CFR 177.2600 under the U.S. Food, Drug and Cosmetic Act. Such uses are subject to good manufacturing practices and any other limitations which are part of the statute or regulations. These should be consulted for complete details.
2	Typical properties: these are not to be construed as specifications.
3	Type 2
4	Method A, Trouser
5	Method B, Angle (Unnicked)
6	Method B