

Sarlink® TPE FM-2166

Thermoplastic Elastomer

Teknor Apex Company

Message:

Sarlink TPE FM-2166 is a general purpose thermoplastic elastomer, available in NAT, BLK, and colors, designed for various applications in the transportation industry including automotive floor mats. Sarlink TPE FM-2166 is a medium hardness, high density, UV stabilized grade that exhibits excellent wear resistance, low fogging and is suitable for injection molding and extrusion.

General Information			
Features	Low to No Fogging		
	High specific gravity		
	High density		
	smoothness		
	Good UV resistance		
	Workability, good		
	Good adhesion		
	Low liquidity		
	Good chemical resistance		
	Good wear resistance		
	Lubrication		
	Fill		
	Medium hardness		
Uses	Application in Automobile Field		
	Car interior parts		
RoHS Compliance	RoHS compliance		
Appearance	Black		
	Grey		
	Available colors		
	Natural color		
	brownish yellow		
Forms	Particle		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density	1.18	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	5.0	g/10 min	ASTM D1238

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ISO 868
Shore A, 1 second, injection molding	68		ISO 868
Shore A, 5 seconds, injection molding	66		ISO 868
Shore A, 15 seconds, injection molding	64		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-10 Wheel)	181	mg	SAE J948
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress ¹			ISO 37
Transverse flow: 100% strain	1.74	MPa	ISO 37
Flow: 100% strain	2.07	MPa	ISO 37
Tensile Stress ²			ISO 37
Transverse flow: Fracture	5.70	MPa	ISO 37
Flow: Fracture	5.00	MPa	ISO 37
Tensile Elongation ³			ISO 37
Transverse flow: Fracture	740	%	ISO 37
Flow: Fracture	640	%	ISO 37
Tear Strength ⁴			ISO 34-1
Transverse flow	24	kN/m	ISO 34-1
Flow	25	kN/m	ISO 34-1
Compression Set ⁵			ISO 815
23°C, 22 hr	24	%	ISO 815
70°C, 22 hr	51	%	ISO 815
90°C, 70 hr	88	%	ISO 815
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air			ISO 188
Lateral flow: 80°C, 1000 hr ⁶	24	%	ISO 188
Traffic: 80°C, 1000 hr ⁷	19	%	ISO 188
Lateral flow: 100% strain 80°C, 1000 hr ⁸	1.5	%	ISO 188
Traffic: 100% strain 80°C, 1000 hr ⁹	2.5	%	ISO 188
Transverse flow: 110°C, 1008 hr ¹⁰	6.3	%	ISO 188
Flow: 110°C, 1008 hr ¹¹	5.6	%	ISO 188
Transverse flow: 100% strain 110°C, 1008 hr ¹²	4.1	%	ISO 188
Flow: 100% strain 110°C, 1008 hr ¹³	6.0	%	ISO 188
Transverse flow: 125°C, 168 hr ¹⁴	10	%	ISO 188
Flow: 125°C, 168 hr ¹⁵	8.1	%	ISO 188
Transverse flow: 100% strain 125°C, 168 hr	-1.8	%	ISO 188
Flow: 100% strain 125°C, 168 hr ¹⁶	0.80	%	ISO 188
Change in Tensile Strain at Break in Air ¹⁷			ISO 188
Lateral flow: 80°C, 1000 hr	1.3	%	ISO 188

Traffic: 80°C, 1000 hr	3.9	%	ISO 188
Transverse flow: 110°C, 1008 hr	2.2	%	ISO 188
Flow: 110°C, 1008 hr	5.3	%	ISO 188
Transverse flow: 125°C, 168 hr	14	%	ISO 188
Flow: 125°C, 168 hr	19	%	ISO 188
Change in Shore Hardness in Air			ISO 188
Shao A, 80°C, 1000 hr ¹⁸	0.10		ISO 188
Shao A, 80°C, 1000 hr ¹⁹	0.60		ISO 188
Shao A, 80°C, 1000 hr ²⁰	0.80		ISO 188
Shao A, 110°C, 1008 hr ²¹	3.2		ISO 188
Shao A, 110°C, 1008 hr ²²	3.4		ISO 188
Shao A, 110°C, 1008 hr ²³	3.6		ISO 188
Shao A, 125°C, 168 hr ²⁴	0.20		ISO 188
Shao A, 125°C, 168 hr ²⁵	0.60		ISO 188
Shao A, 125°C, 168 hr ²⁶	0.70		ISO 188
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -60.0	°C	ASTM D746
Flammability	Nominal Value	Unit	Test Method
Burning Rate	38	mm/min	ISO 3795
Fill Analysis	Nominal Value	Unit	Test Method
Apparent Viscosity (200°C, 206 sec ⁻¹)	167	Pa · s	ASTM D3835
Additional Information	Nominal Value	Unit	Test Method
Volatiles			SAE J1756
Fogging, 3 hrs @ 100°C, 21°C Plate 16 hrs post	92	%	SAE J1756
Atomization, 3 hours, 100°C, 21°C plate = 93%	94	%	SAE J1756
Tear Strength			ISO 34-1
1000 hrs @ 80°C (Across Flow)	12	%	ISO 34-1
1000 hrs @ 80°C (Flow)	8.3	%	ISO 34-1
Legal statement			

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Injection	Nominal Value	Unit
Rear Temperature	199 - 210	°C
Middle Temperature	204 - 216	°C
Front Temperature	210 - 221	°C
Nozzle Temperature	216 - 227	°C
Processing (Melt) Temp	216 - 227	°C

Mold Temperature	35 - 66	°C
Injection Pressure	1.38 - 6.89	MPa
Injection Rate	Fast	
Back Pressure	0.172 - 0.862	MPa
Screw Speed	50 - 120	rpm
Cushion	3.81 - 25.4	mm

Injection instructions

无需干燥.但如果湿度过大,则将粒料在150°F (65°C)的温度下干燥2-4小时.

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	193 - 204	°C
Cylinder Zone 2 Temp.	199 - 210	°C
Cylinder Zone 3 Temp.	204 - 216	°C
Cylinder Zone 4 Temp.	204 - 216	°C
Cylinder Zone 5 Temp.	210 - 221	°C
Die Temperature	216 - 227	°C

Extrusion instructions

螺杆转速30 - 100 rpm

NOTE

1.	Type 1, 510mm/min
2.	Type 1, 510mm/min
3.	Type 1, 510mm/min
4.	B method, right angle specimen (without cut), 510mm/min
5.	Type a
6.	Type 1
7.	Type 1
8.	Type 1
9.	Type 1
10.	Type 1
11.	Type 1
12.	Type 1
13.	Type 1
14.	Type 1
15.	Type 1
16.	Type 1
17.	Type 1
18.	1 sec
19.	5 sec
20.	15 sec
21.	1 sec
22.	5 sec
23.	15 sec

24.	1 sec
25.	5 sec
26.	15 sec

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