

Fluorine rubber (FKM) premixed rubber

Technical Data Sheet

SX0611-2023-01 V2

Description: FKM premixed rubber is a kind of fluororubber premixed rubber added with a small amount of processing aids, fillers and all additive of curing systems. It solves the problem that the fluororubber vulcanizing agent is difficult to disperse during processing, and greatly improves the mixing efficiency of fluororubber.

Special properties:

- Excellent wear & tear resistance; excellent ozone resistance & weather resistance
- Heat resistance comparable to silicone rubber, better than any other rubber; excellent resistance to superheated water or water vapor, excellent high vacuum resistance Good appearance.
- Excellent corrosion resistance, excellent resistance to moderate doses of radiation
- Good low temperature performance
- Good storage stability
- Excellent antistatic property in low frequency and low voltage occasions
- Calendering, extrusion fast, smooth surface, high strength, high hardness & low pressure deformation, high chemical stability

Main applications:

- FKM premix rubber are mainly used in high and low temperature sealing, vacuum instrument equipment, chemical equipment, automobile, aviation and other fields. It is also one of the indispensable high-performance materials for modern aviation, missiles, rockets, space navigation, ships, atomic energy and other cutting-edge science and technology.

Characteristics:

Type	FKM
Natural color.....	translucent
Relative density, g/cm ³	1.85-1.95
Fluorine content.....	60±5%
Moisture content, %.....	≤0.1
ML 1+4@100℃.....	40±5
Volatile content.....	<1.0%
Color	White

Curing Condition: (1) 1st vulcanization at 175 °C × 10min
(2) 2nd vulcanization at 230℃ × 16h.

Reference recipe :(phr)

FKM premixed rubber	100
N990	30
MgO	3

Ca (OH) ₂	6
WS280	1
Pa l m wax	1

Product performance:

product name			LXF100CA	LXF200CA
project	Test Methods	unit	Typical value	
Mooney viscosity（ML 1+4@100℃）			53	48
Vulcanization performance test: 180℃×5min×1arc				
Minimum torque	ASTM D2048	lb-in	0.40	0.38
Maximum torque		lb-in	9.02	8.46
Scorch Time TS2		s	72	73
Positive vulcanization time TC90		s	140	136
1、 Mechanical properties 1.1 First vulcanization: 175℃×10min, Second vulcanization: 230℃×16h				
Proportion	ASTM D297	g/cm3	1.938	1.936
Hardness (Shore A)	ASTM D2240	Points	70	70
Tear strength	ASTM D412	MPa	11.28	10.58
Elongation at break		%	257	248
M100		MPa	5.45	5.40
1、 Mechanical properties 1.2 Changes in properties after aging at 200℃ for 504 hours				
Hardness (Shore A) change	ASTM D2240	Points	+3	+5
Change in breaking strength	ASTM D412	%	-4.2	-8.0
Elongation at break change	ASTM D412	%	-15.5	-22.5
2、 Oil resistance 2.1 Changes in resistance to FAM B oil at 23℃ for 48 hours				
Hardness (Shore A) change	ASTM D2240	Points	-6	-10
Volume change rate change	ASTM D471	%	+10.5	+16.5
2、 Oil resistance 2.2 Performance after aging and drying at 100℃ for 48 hours after being resistant to FAM B oil at 23℃ for 48 hours				
Hardness (Shore A)	ASTM D2240	Points	70	70
Tear strength	ASTM D412	%	10.28	9.98

Elongation at break	ASTM D412	%	245	224
volume change rate	ASTM D471	%	+0.23	+0.52
2、Oil resistance 2.3 Diesel resistance change at 23°C for 48 hours				
Hardness (Shore A) change	ASTM D2240	Points	0	-3
volume change rate	ASTM D471	%	-0.03	+3.98
2、Oil resistance 2.4 Performance after aging at 23°C for 48 hours against diesel oil and drying at 100°C for 48 hours				
Hardness (Shore A)	ASTM D2240	Points	70	69
tear strength	ASTM D412	%	10.25	9.67
Elongation at break	ASTM D412	%	238	228
Volume change rate%	ASTM D471	%	+0.34	+0.92
2、Oil resistance 2.5 Biodiesel resistance (RME) performance at 80°C for 504 hours				
Hardness change (Shore A)	ASTM D2240	Points	-2	-4
Volume change	ASTM D471	%	+3.1	+5.2
Tear strength	ASTM D412	MPa	8.94	7.54
Elongation at break		%	269	237
2、Oil resistance 2.6 Resistance to 5W/30 engine oil (RME) at 80°C for 504 hours				
Hardness change (Shore A)	ASTM D2240	Points	-1	-4
Volume change	ASTM D471	%	+3.52	+9.62
tear strength	ASTM D412	MPa	9.05	7.24
Elongation at break		%	215	189
3、Compression set at 150°C for 24 hours (the vulcanization condition of the sample 1 st curing at 175°C×10min and 2 nd curing at 230°C×16h)				
Compression set	ASTM D395	%	26.48	23.48
4、Ozone resistance 80pphm×20% for elongation×40°C×120 hours				
Cracked or not	ASTM D1171	/	NO	NO
5、Low temperature retraction TR10				
TR10	GB 7758	℃	-20	-25

Packing: FKM premixed rubber is shipped in 25 kg/cardboard box.

Storage and shelf life: This series may be stored in its original unopened packaging at a temperature below 40°C for up to 12 months as from the date of manufacture.

For More Product Information, Please Visit Our Website: www.sanezen.com

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