Katon®

KATON® FKM FK3

High Performance Specfluoroelastomer

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KATON® FKM FK3 Series

specfluoroelastomer

KATON® FKM FK3 series belong to a brand new generation of very low temperature peroxide curable FKM. They have been designed to offer outstanding low temperature flexibility (i.e. TR10 = -40°C). Like all other KATON® peroxide curable grades, they exhibit excellent processability and superior mechanical properties and sealing ability; moreover they need very short post curing cycles.

KATON® FKM FK3 offers medium (FK3) versions in order to fulfil all customer's requirements. Accordingly to the curing technology, KATON® FK3 Series can be transformed by all the molding techniques, including injection, injection-compression, compression and transfer molding.

KATON® FKM FK3 series can be used with all typical peroxide curing system and the other fluoroelastomer compounding ingredients. Mixing can be accomplished with two-roll mills or internal mixers. This material can be extruded into hoses or profiles or can be calendered to make sheet stocks or belting.

Some of the basic properties of **KATON® FKM FK3 series** are:

- Outstanding low temperature behavior
- Very good chemical resistance
- Low post cure
- Superior mold flow
- Lack of mold fouling
- Excellent mold release
- Very good chemical resistance

General

Material Status	• Commercial: Active		
Availability	• Europe	• North America	• Taiwan
Features	• Fast Cure	• Good Heat Seal	• Medium-low Viscosity
	• Good Chemical Resistance	• Good Mold Release	• Low Temperature Flexibility
	• Good Flow	• Good Processability	
Uses	• Belts/Belt Repair	• Hose	• Profiles
	• Blending	• Sheet	• Low Temperature Applications
Appearance	• Black/White		
Forms	• Slab		
Solubility	• Ketones and esters		
Processing Method	• Compounding	• Calendering	• Injection Molding
	• Extrusion	• Resin Transfer Molding	• Compression Molding

Physical	Typical value unit	Test mathod
Mooney Viscosity (ML 1+10,121°C)	28MU	No Standard
Fluorine Content	65%	No Standard
Working Temperature	-40°C~230°C	ASTM D573

Notes
Typical properties: these are not to be construed as specifications.

Technical Data

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Properties	
Color	Black
Hardness, Shore A (ASTM D2240)	68
Tensile strength, MPa (ASTM D412)	15.0
100% Modulus ,MPa	7.2
Elongation at Break, %	172

Compression set (25 % Deformation, ASTM D395 Method B, 70 h @200°C)	
#214 O-Ring %	21

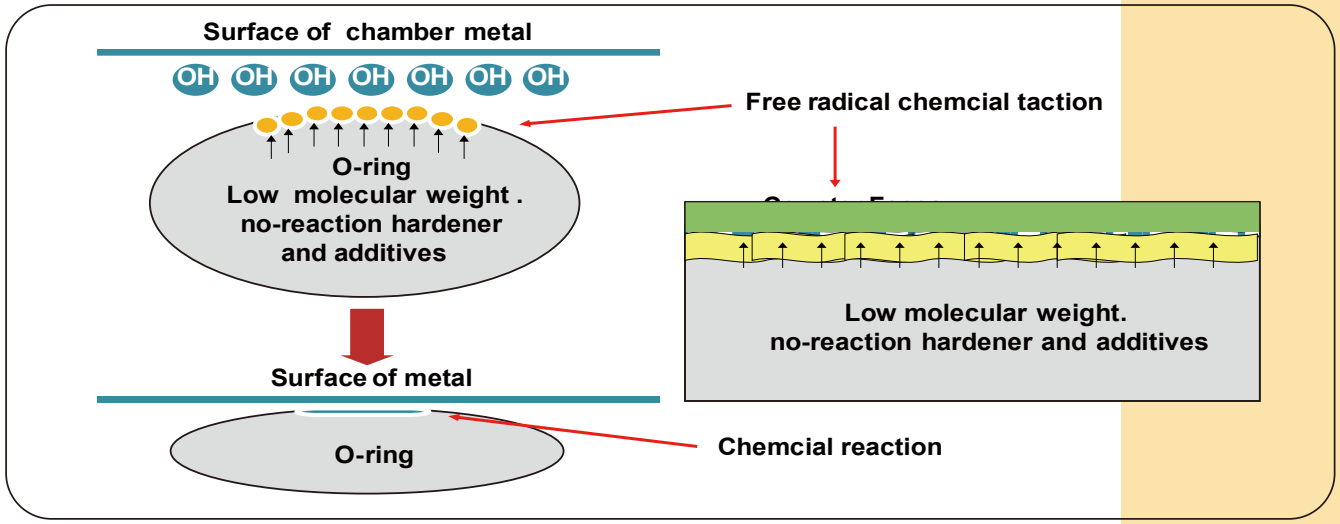
Mechanical properties	
Post Cure:(1+4)h @230°C	
100%	7.2
Modulus	15.0
Mpa	172
Tensil	68

Fuel B 70h @24°C	
Tensile Strength %	15
Elongation at Break %	4
Hardness, Shore A	4
Volume %	+4

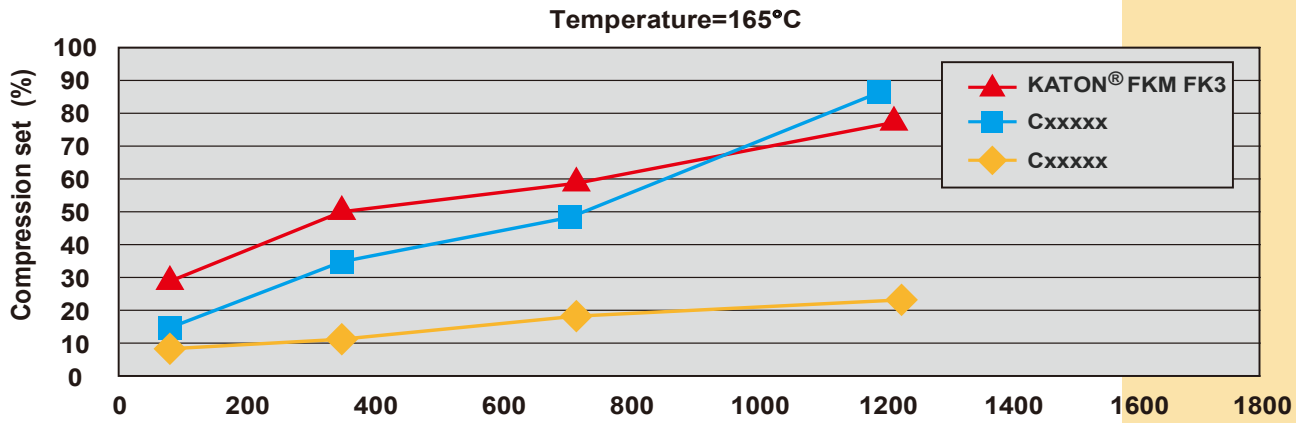
Fuel C 168h @	23°C	40°C
Tensile Strength %	20	31
Elongation at Break %	8	21
Hardness, Shore A	4	6
Volume %	+8	+12

Spec FKM ASTM D1418
D2240 Designation: FKM-FK3
ISO 1629 Designation: FKM
ASTM D2000/SAE J200
Type Class: HK

How o-ring thermal degradation happens?



Steam resistance



Gas penetrability

fluoroelastomer has low gas penetrability, it applied to high vacuum environment and stop outside air

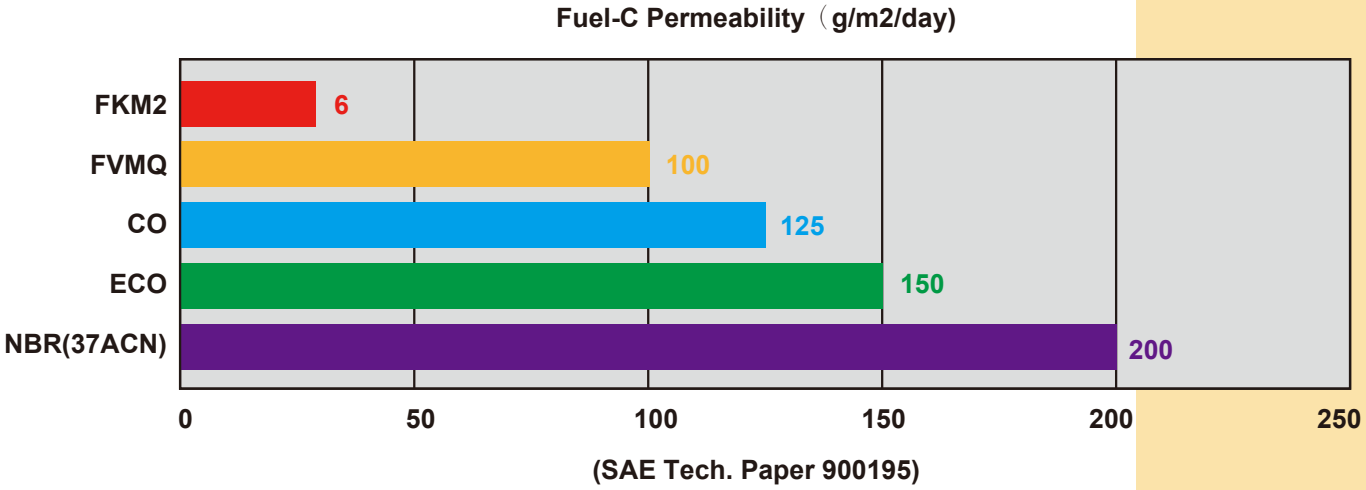
Gas penetrability of variety rubber (cm3 mm/24h . m2 . atm)

Low	°C	CO2	O2	N2
FKM	26	93	88	59
Silicone	26	25741	6829	295
Butyl rubber	26	919	368	5
Polyurethane rubber	29	2627	315	-
CSM	30	1097	217	-

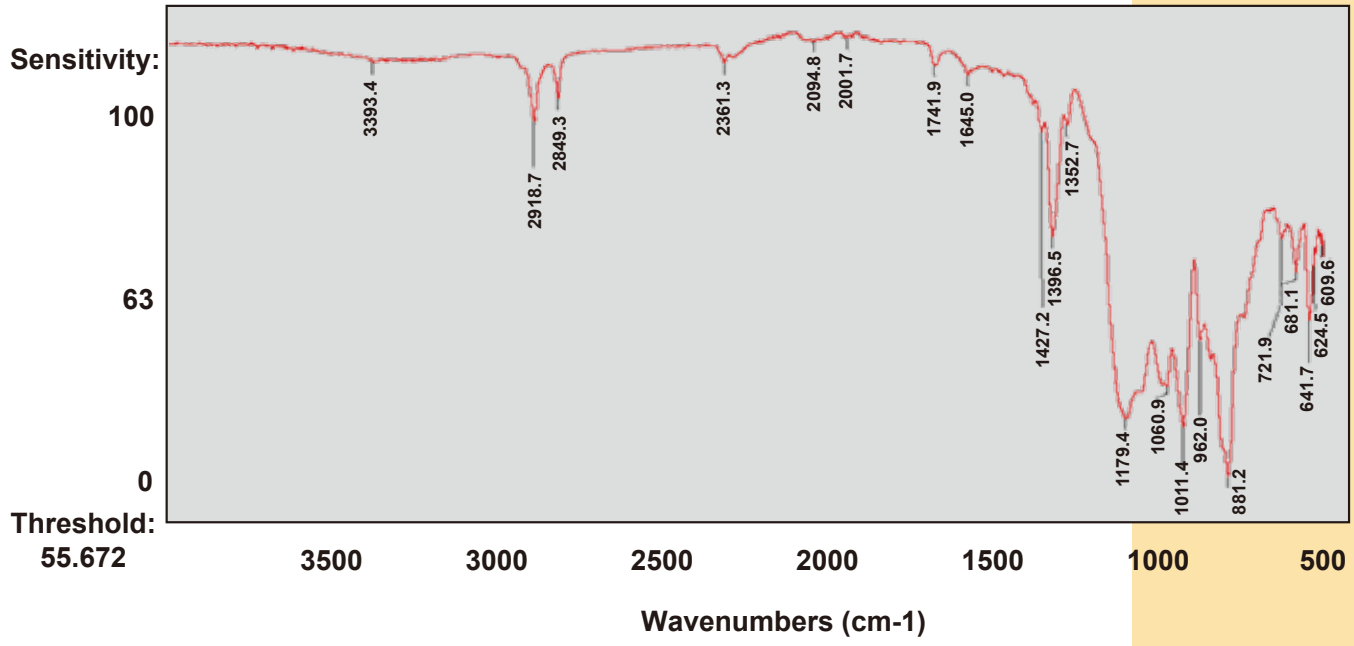
Flurorine content and molecular weight characteristics

Characteristics	Flurorine content / Molecular weight			
	High	Low	High	Low
Elongation			O	
Lmpact resistance			O	
Compression set		O	O	
Low temperture	O			
Chemical resistance	O			
Corrosion resistance	O			

The Permeability of rubber



TGA Analysis



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