

Katon[®]



KATON[®] FKM FK1

High Performance Fluoroelastomer

KATON[®] FKM FK1 Series fluoroelastomer

KATON[®] FKM FK1 Series is well suited for applications where excellent compression set and superior mold release are required.

KATON[®] FKM FK1 Series can be used for compression and transfer moulding of O-rings, gaskets, and seals. The product can be mixed using typical fluoroelastomers compounding ingredients and mixing can be accomplished with two-roll mills or internal mixers.

Some of the basic properties are:

- Very good scorch safety
- Good mold flow
- Excellent mold release
- Lack of mold fouling

The material can be extruded into hoses or profiles and can be calendered to make sheet stocks or belting. Finished goods can be produced by a variety of rubber processing methods.



General

Material Status	• Commercial: Active		
Availability	• Europe	• North America	• Taiwan
Features	• Copolymer • Low Compression Set	• Good Mold Resistance • Medium-low Viscosity	• Good Flow
Uses	• Belts/Belt Repair • Gaskets	• Hose • Profiles	• Seals • Sheet
Appearance	• Black/Green/Brown		
Forms	• Slab		
Processing Method	• Compounding • Extrusion	• Calendering • Resin Transfer Molding	• Compression Molding
Shore A	• 76		
FDA	• FDA 21 CFR 177.2600		

Physical

Physical	Typical value unit	Test method
Mooney Viscosity (ML 1+10, 121°C)	41MU	No Standard
Fluorine Content	66%	No Standard
Working Temperature	-5°C~220°C	ASTM D573

Notes

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

Properties	Specification	
Color	Black/Green/Brown	
Hardness, Shore A	75+/-5	74
Tensile strength, MPa	15.2	
Tensile strength, Psi	2204	
Elongation, %	182	

Compression set		
70 hrs @ 200°C	50max	7.6
168 hrs @ 200°C	50max	8.0

Air Aging (70 hrs. @250°C)		
Hardness change, points	+10 max	+1
Tensile change, %	-25 max	-7
Elongation change, %	-25 max	-8

ASTM Fuel C (70 hrs. @23°C)		
Hardness change, points	+/-5	-3
Tensile % change	-25 max	-21
Elongation % change	-20 max	-15
Volume % change	0 to +10	+3

Low Temperature D2137		
Brittleness at -25 °C	Pass	Pass

FKM ASTM D1418
D2240 Designation: FKM-FK1
ISO 1629 Designation: FKM
ASTM D2000/SAE J200
Type Class: HK



TEST REPORT – FDA

測試報告

號碼：CY/2013/51256 日期：2013/05/29 頁數：1 of 3

科頓聚合物股份有限公司
新竹市香山區中華路四段434巷7號

CY/2013/51256

以下測試樣品係由申請廠商所提供及確認：

送樣廠商：科頓聚合物股份有限公司
 樣品材質：氟素橡膠 (FKM FK1 RUBBER)
 原產國：台灣
 收件日期：2013/05/20
 測試期間：2013/05/20 TO 2013/05/29

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 測試需求：依據客戶指定，參考美國聯邦法規之藥物暨食品管理(FDA)-21 CFR 177.2600所規定之要求
 做測試。

測試結果：請見下一頁。



James Lu Sr. Supervisor
 Signed for and on behalf of
 SGS TAIWAN LTD.
 Chemical Laboratory – Taipei

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TEST REPORT – FDA

測試報告

號碼：CY/2013/51256 日期：2013/05/29 頁數：2 of 3

科頓聚合物股份有限公司
新竹市香山區中華路四段434巷7號

CY/2013/51256

測試結果

測試部位 No. 1 : 黑色橡膠

通過

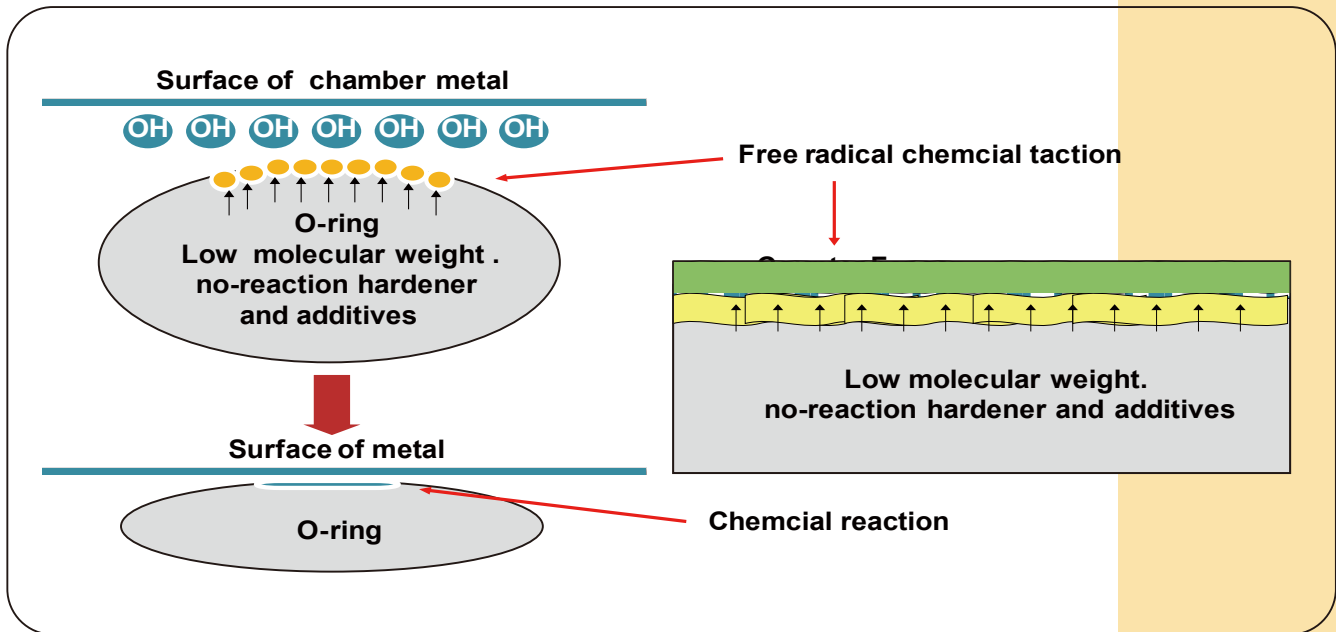
測試項目	單位	測試方法	方法偵測極限值	結果	法規限值
				No. 1	
總萃取物 (水, 迴流, 前7小時)	mg/in ²	參考美國聯邦法規(CFR) Title 21, Pt 177.2600	-	0.7	20
總萃取物 (水, 迴流, 接續2小時)	mg/in ²	參考美國聯邦法規(CFR) Title 21, Pt 177.2600	-	0.3	1
總萃取物 (正己烷, 迴流, 前7小時)	mg/in ²	參考美國聯邦法規(CFR) Title 21, Pt 177.2600	-	0.1	175
總萃取物 (正己烷, 迴流, 接續2小時)	mg/in ²	參考美國聯邦法規(CFR) Title 21, Pt 177.2600	-	0.1	4

備註：

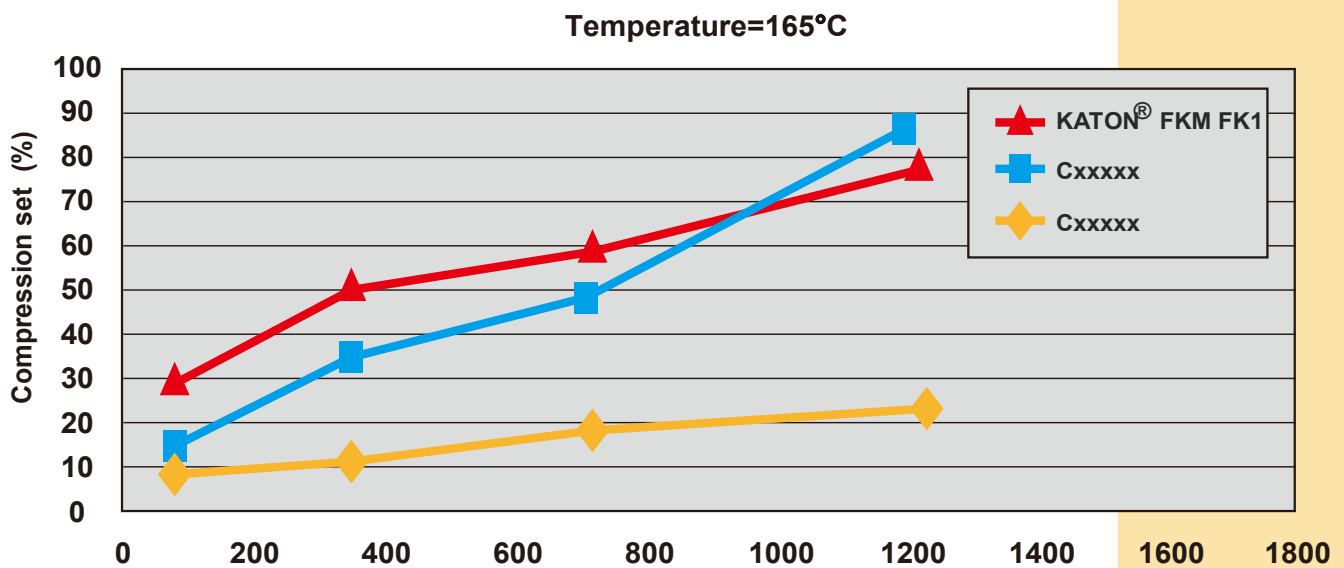
- 0.1wt% = 1000ppm ; mg/kg = ppm
- MDL = Method Detection Limit / 方法偵測極限值
- "-" = Not Regulated / 無規格值

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How o-ring thermal degradation happens?



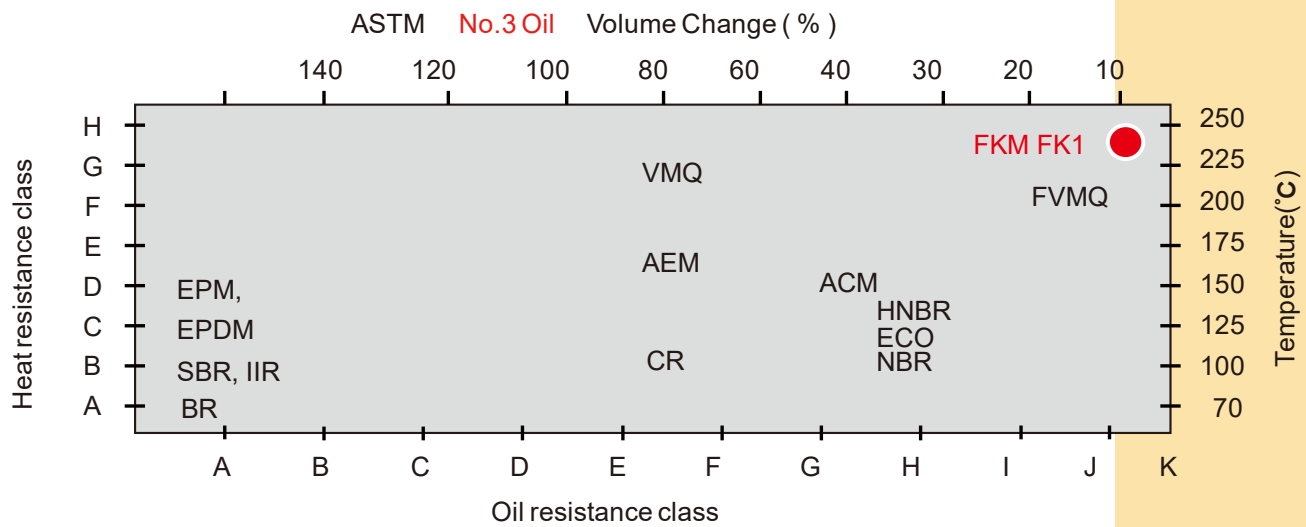
Steam resistance



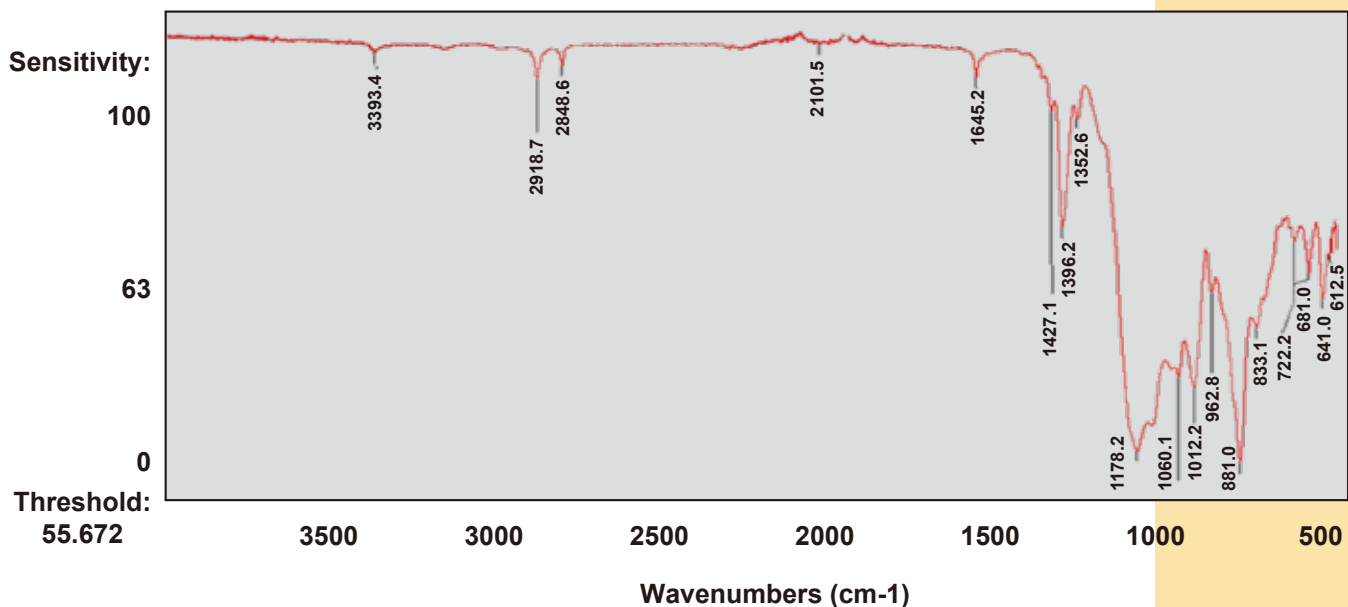
Fluorine content and molecular weight characteristics

Characteristics	Fluorine content / Molecular weight			
	High	Low	High	Low
Elongation			○	
Impact resistance			○	
Compression set		○	○	
Low temperature	○			
Chemical resistance	○			
Corrosion resistance	○			

Heat and NO.3 oil resistance (According to SAE J200 and ASTM D2000) Oil Pump



FTIR Analysis



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