Katon®

KATON® PF325

High Performance Perfluoroelastomer

KATON® FFKM Series PF325

perfluoroelastomer

KATON® PF325 is a chemical resistant perfluoroelastomer (FFKM). **KATON® PF325** offers the widest range of media sealing capabilities along with excellent compression set values.

KATON® PF325 is suitable for most applications in temperature ranging from -10 °C to 260 °C, offering outstanding resistance to aggressive media such as hot organic and inorganic acids, caustics, ketones, aldehydes, esters, ethers, alcohols, fuels, solvents, sour gases, hydrocarbons, steam, hot water, ethylene and propylene oxide and mixed process streams. Moreover it can cope with a wide range of potent active pharmaceutical ingredients (API's) and aggressive cleaning agents, being especially suited to withstand steam-in-place (SIP) and clean-in-place (CIP) procedures.

The primary use for **KATON® PF325** is the manufacturing of any kind of elastomeric sealing element such as O-rings, gaskets, valve bodies, butterfly valves, pump housings and stators, metal bonded parts, diaphragms, profiles, etc. These sealing elements can be used in mechanical seals, pumps, compressors, valves, reactors, mixers, sprayers, dispensers, quick connect couplings, controls, instrumentation, etc. in a wide range of industrial sectors, such as semiconductor manufacturing, chemical process industry, oil & gas, food and pharma and paint spray.

KATON® PF325 can be combined with the cure system and other typical fluoroelastomer compounding ingredients; its mixing can be accomplished with two-roll mills or internal mixers. Finished goods may be produced by a variety of rubber processing methods.

KATON® PF325 is registered in the FDA Inventory of Effective Premarket Notifications for Food Contact Sub-stances. It can be compounded so that the finished gaskets or seals can be used in food processing equipments.

General

Material Status	• Commercial: Active		
Availability	• Europe	• North America	• Taiwan
Features	• Alcohol Resistant	• Good Chemical Resistance	• Solvent Resistant
	• Acid Resistant	• Fuel Resistant	• Moisture Resistant
	• Food Contact Acceptable	• Low Compression Set	• Steam Resistant
Uses	• Blending	• Gaskets	• Seals
	• Compounding	• Profiles	• Valves/valve Parts
	• Diaphrams	• Pump Parts	
Agency Ratings	• FDA Food Contact, Unspecified Rating		
Appearance	• White		
Forms	• Slab		
Processing Method	• Compounding		
Shore A	• 76		

Physical	Typical value unit	Test mathod
Mooney Viscosity (ML 1+10,121°C)	35MU	No Standard
Fluorine Content	72%	No Standard
Working Temperature	-10°C~260°C	ASTM D573

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

Technical Data

Katon®

Properties	
Hardness, Shore A	76
Modulus @ 100%, MPa	1462 /9.8
Tensile strength, MPa	2490 17.2Mpa
Elongation, %	158%
Color	White

Compression set	
70 hrs @ 200°C of percent original defection	28%
168 hrs @ 200°C of percent original defection	36%

Steam:160°CX168 hrs	
Hardness change	-2.5
Tensile % change	20
Elongation % change	-3.4
Volume % change	2.6

30%NaOH 70°CX70 hrs	
Hardness change	3
Tensile % change	-12
Elongation % change	-4.8
Volume % change	-3.7
Electrical characteristics of	-
Permittivity	1055 Hz
Dielectric positive connection	1000Hz 5
Resistivity	10
Withstanding Voltage	17.7Kv/m

Plasma testing	
Oxygen 120 min @ 300W	
Weight Loss, %	0.52
Particles generated, 0.3 - 5 micron (x 10E6/cmE2)	2,286
Low Temperature	-10
ASTM D1329 TR10, °C	-5

ASTM D1418 Designation: FFKM
ISO 1629 Designation: N/A
M D2000/SAE J200 type, class: JK/HK

Technical Data

Do your O-ring have below degradation issue?

KATON® PF325 perfluoroelastomer series can be used in the sealing environment with corrosive media. **KATON® PF325** erfluoroelastomer series are very good permanent compression strain value.

KATON® PF325 perfluoroelastomer series can also be used to handle highly active pharmaceutical raw materials and corrosive cleaners, particularly suitable for use in the semi-conductor industry, chemical treatment process, petroleum industry, aviation, heat-resistance industry, including the ability to resist over 20,000 kinds of chemic

PF325 Chemical testing

Media	Temperature(degC)	Duration(hrs)	Hardness Change(SH A)	Volume Chage(%)
HF A cid	Room Temp	70	1	0.3
Sulfunic A cid	120	70	2	1
Phosphoric A cid	120	70	0	-0.1
TMAH*	Room Temp	70	1	0.1
MIBK**	25	70	-1	0.6
Hexane	50	70	-4	-0.6
Propylene Oxide	25	70	-5	0.7
Methanol	50	70	-1	1.7
Ethylene Diammine	60	70	-2	0.5
IPA***	50	70	-6	2.6
Kerosene	25	70	-1	0.4
Sodium Hydroxide	175	70	0	3.7
Ethylene Oxide	140	336	-	4.7

* Tetramethylammonia Hydroxide
** Methyl Isobutyl Ketone
*** Isopropyl A cetate

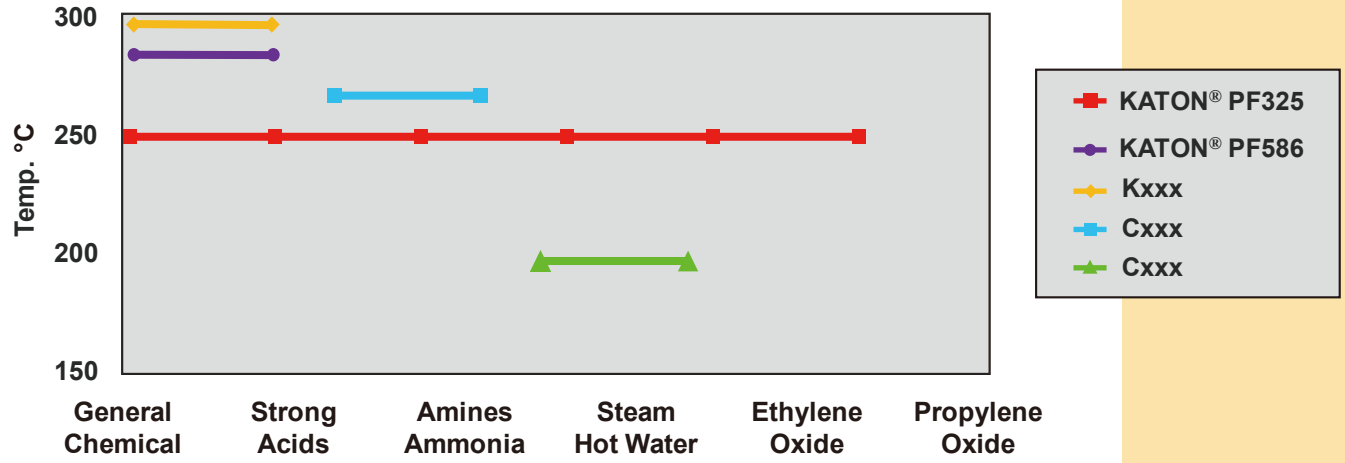
PF325 Acid & Solvent testing

	% Swell	Rating
Acetic acid @ 50°C	+3.2	A
Nitric acid @ 40°C	+2.4	A
Sulphuric acid @ 40°C	+2.2	A
10% Hydrochloric acid @ 40°C	+0.7	A
Triethanolamine @ 40°C	0	A
Xylene @ 23°C	+2.7	A
Toluene @ 23°C	+3.8	A
Methylene Chloride @ 23°C	+5.4	A

Original FFKM O-Ring	PF325 O-Ring after Acid & Solvent testing	Others FFKM O-Ring after Acid & Solvent testing

* Tests carried out in accordance with BS903 Part A16 (equivalent ASTM D471/ISO 1817)

Chemical resistance comparison



Amine apllication laboratory test Results (% Volume Swell)

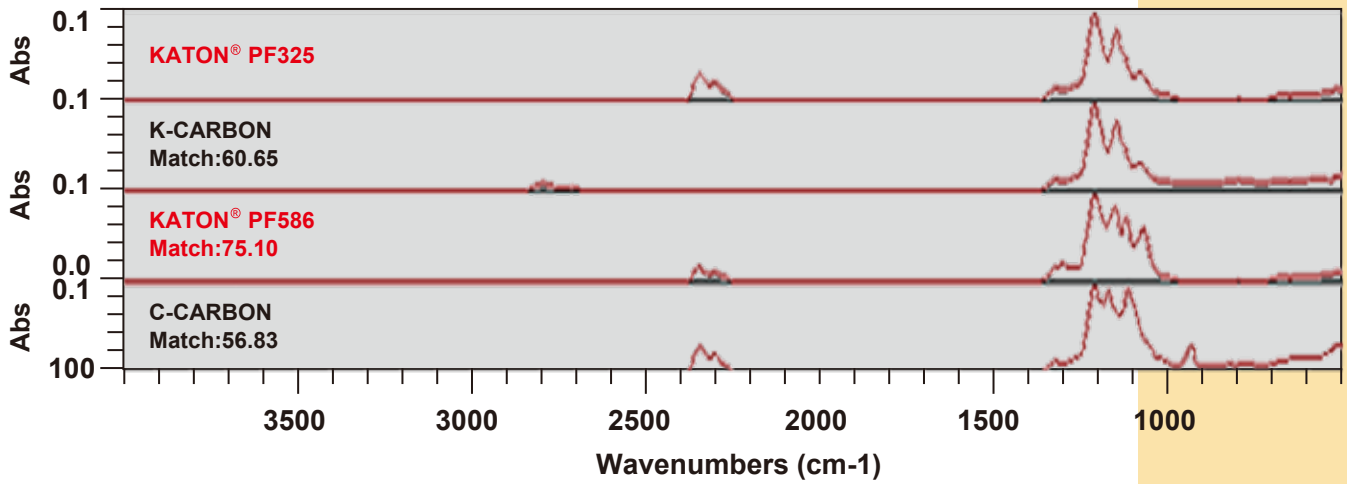
	Temp	Time	PF325	Cxxxxxz
Dimethylamine	60°C	70 h	+10.3	+14.7 (505)
Ethylene Diamine	60°C	70 h	+ 0.5	+ 3.0 (505)

Examples of KATON® application

Tertiary Amines Residue	71°C
Polyamines	176°C
Variety of lean, rich, spent Amines	37-82°C

TGA analysis compare with other compound

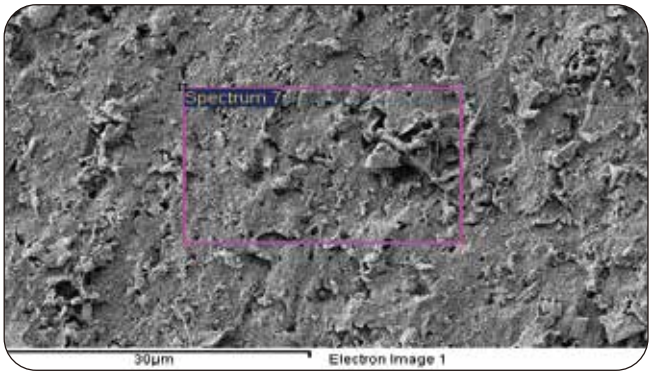
Search resuite for : PF80180-051107
Date : Mon Nov.07 10 : 08 : 13 2016 (GMT+08:00)
Search algorithm : Correlation
Regions searched : 3999.84-649.93

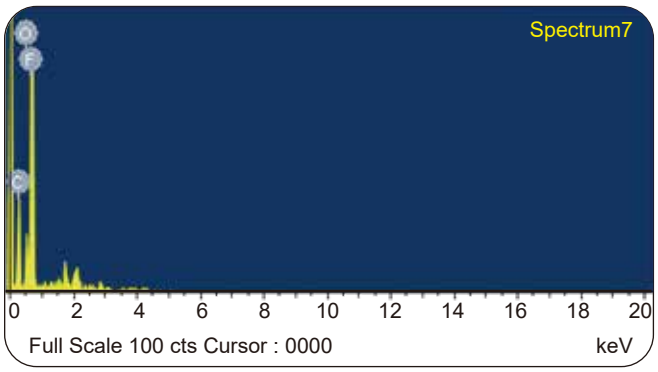


Search resuite list of metches

	index	Mctch	Compourid Name	Library Name
1	2	80.65	K-CARBON	QC
2	3	75.10	KATON® PF586	QC
3	1	56.83	C-CARBON	QC

O-ring analysis





Element	Weight%	Atomic%
C K	24.02	32.81
O K	9.80	10.05
KATON®PF325	66.18	57.15
Totals	100.00	

Application

KATON ® PF325 are available in a wide variety of configurations, including O-ring and E-band bonded valves door.

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