Katon®

KATON® PF587

High Performance Perfluoroelastomer

KATON® FFKM Series PF587

perfluoroelastomer

KATON® PF587 is a perfluoroelastomer (FFKM) offering wide operational range and superior compression set resistance, thanks to its unique peroxide curing system that does not need any coagent (TAIC or equivalent) for curing to be carried out. Thanks to its curing system, it can offer a very broad chemical resistance in a wide variety of media including acids, caustics, ketones, aldehydes, esters, ethers, methanol, solvents, sour gases, hydrocarbons, steam, hot water and mixed process streams along with excellent thermal resistance.

KATON® PF587 is suitable for most applications in temperature ranging from -10 °C to 318 °C.

The primary use for **KATON® PF587** 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 chemical and petrochemical in-dustry, hydrocarbon processing, petroleum exploration and extraction, food processing, pharmaceutical and bio-analytical industry, aerospace and semiconductor manufacturing industries.

KATON® PF587 can be combined with 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® PF587 is registered in the FDA Inventory of Effective Premarket Notifications for Food Contact Substances. It can be compounded so that the finished gaskets or seals can be used in food processing equipments (see "food processing compounds" section below)

General

Material Status	• Commercial : Active		
Availability	• Europe	• North America	• Taiwan
Features	• Acid Resistant	• Good Chemical Resistance	• Alcohol Resistant
	• High Heat Resistance	• Solvent Resistant	• Food Contact Acceptable
	• Low Compression Set	• Steam Resistant	• Fuel Resistant
	• Fuel Resistant	• Moisture Resistant	
Uses	• Blending	• Gaskets	• Seals
	• Compounding	• Profiles	• Valves/Valve Parts
	• Diaphrams	• Pump Parts	
Agency Ratings	• FDA Food Contact, Unspecified Rating		
Appearance	• Black		
Forms	• Slab		
Processing Method	• Compounding		
Shore A	• 75		

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~318°C	ASTM D573

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

Technical Data

Katon®

Properties

Color	Black
Hardness, Shore A	75
Tensile strength, MPa	21.2
Tensile strength, Psi	1525 /10.05
Modulus @ 100%, MPa	190.0
100%Modulus Mpa	5.7
101%Modulus Psi	850
Temperature R WTRACTION 10% ,°C	0
Elongation	225%

Fluid Immersion-Water Bomb

70 hrs @ 200°C	23
VOLUME Change,%	+3.8
ASTM	D2000 SAEJ2000

Compression Set

70 hrs @ 200°C	
% of Percent of original defiection,	15%
168 hrs @ 200°C	
% of Percent of original defiection,	24%

Plasma Testing

Oxygen 120 min @ 300W 500 sccm	
Weight Loss, %	0.3
Particles generated, 0.3 - 5 micron (x 10E6/cmE2)	1,400

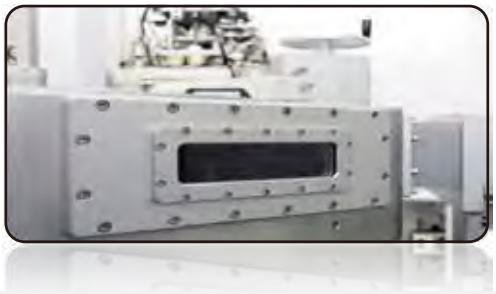
Temperature

	-10°C to 318°C

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

Technical Data

Do your O-ring have thermal degradation issue ? It's because O-ing can't stand working enviromnt temperatue.

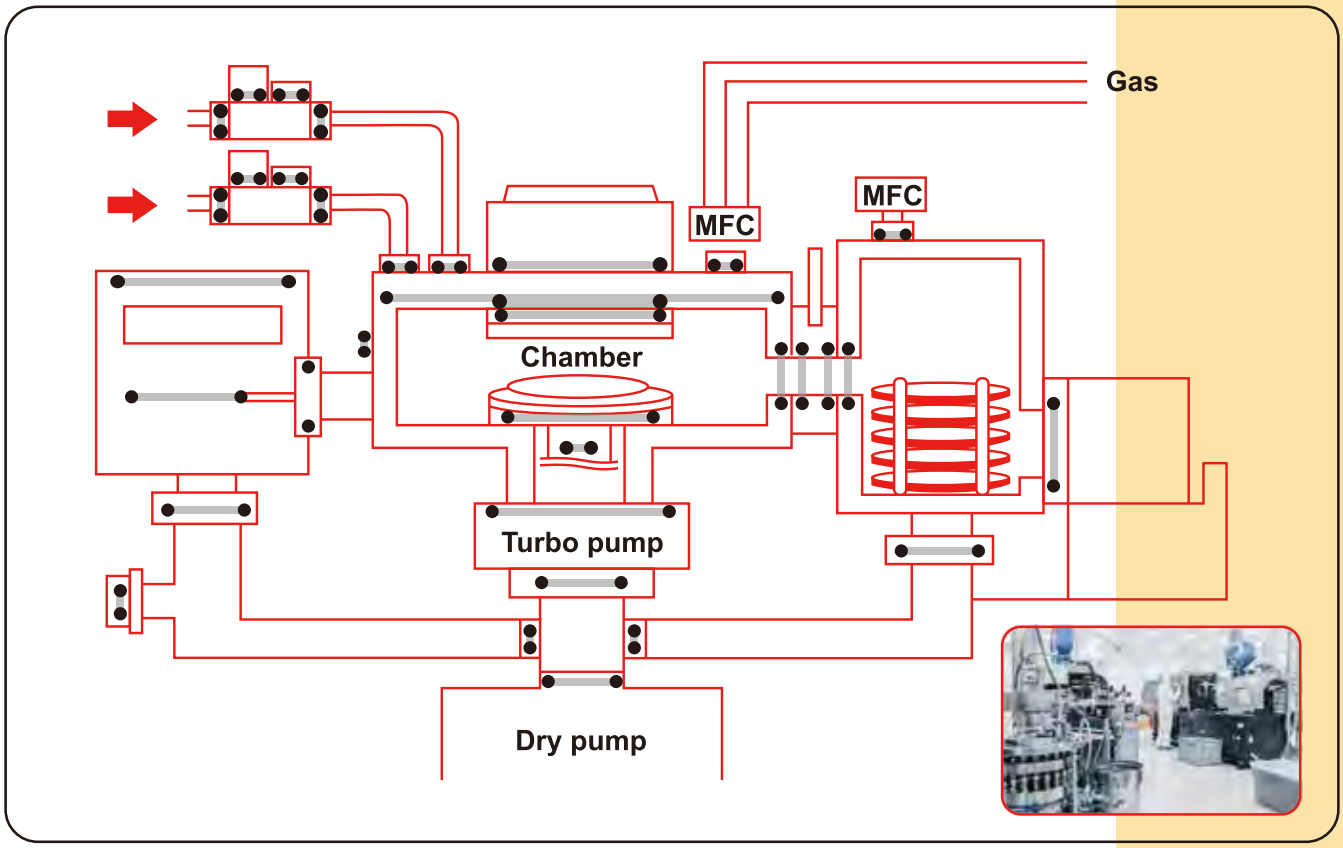


KATON® PF587 series are a kind of highly pure perfluorocarbon elastomer products that highly balance all states.

They can provide chemical gas resistance boosting property through a series of vigorous and active elevated temperature plasma applications, offering a longer seal life.

They have excellent resistance to ozone, ammonia, fluorine and oxygen free radicals and have super-low re-lease and outstanding thermal stability.

O-ring works in 3mm toor vacuum pressure sealing



KATON® PF587 features and benefits

Excellent compression set characteristics at all temperatures - maximum life at high temperatures . Temperature capability (+318°C) , superior chemical resistance and physical properties . Isolast features make it an alternative to other perfluoroelastomers providing .

Examples of KATON® applications

Hydrofluoric Acid/HC	46°C
Adiptic Acid	100°C
Paratoluic Acic	148°C
Monochlorocetic Acid	0°C
Nitric Acid, 43%	48-60°C
Stearic Acid (Octadecandic Acid)	85°C

Acid application laboratory test results (% volume swell)

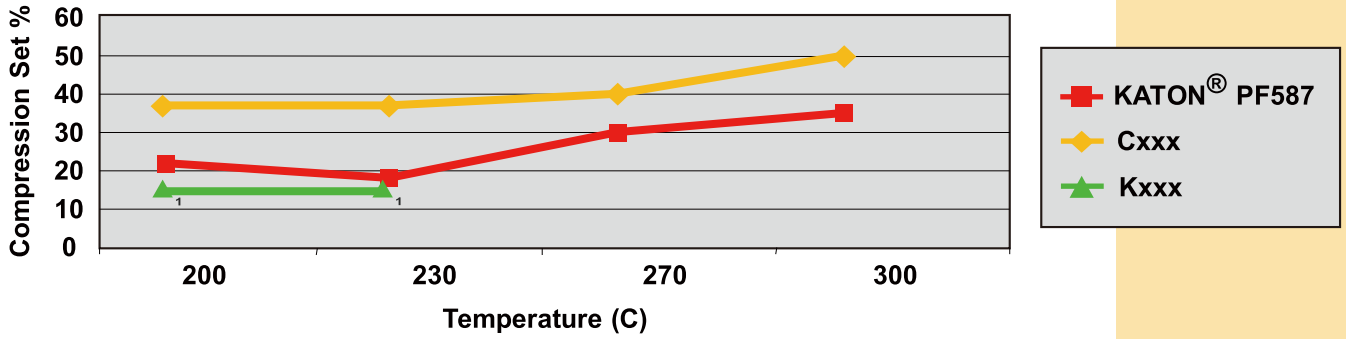
	Temp	Time	PF587	Kxxx
Hydrochloric Acid, 37amb	-	+0.2	+0.8	-
Hydrofluoric Acid, 60%	40°C	70 h 168 h	+0.6	+0.5
Phosphoric Acid, 85%	120°C	70 h	-0.1	-0.1
Sulfuric Acid, 98%	120°C	70 h	+1.0	+4.1

PF587 compare with other compound --- Physical properties

	PF587	Cxxx
Hardness (Shore A)	75	75
Compression Set (%)	22[1]	37[1]
Modulus @ 100% (MPa)	7.2[2]	7.2[3]
Tensile Strength (MPa)	20[2]	16.9
Elongation at Break (%)	190[2]	150
Max Operating Temp (°C)	318	315

[1] 70 Hrs @ 200°C (o-rings)
[2] BS903 Part A2
[3] ASTM D412 500 mm/min (20 in/min)

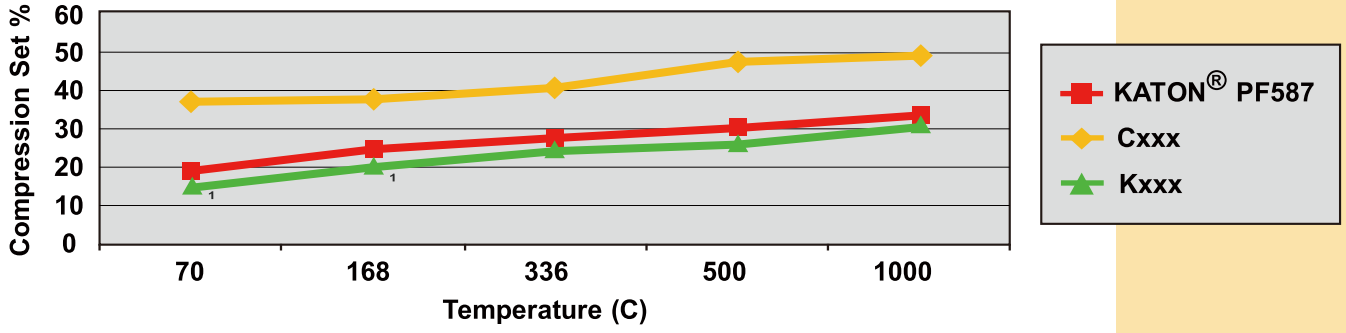
PF587 compare with other compound --- Compression set @ 70 hours



Tests carried out according to ASTM D1414, 25% compression for 70 hours

1 – Comp K FFKM D began to disintegrate at 200°C and above.At 270° and 300°C Comp FFKM D had totally dis-integrated.Compression set readings could not be taken

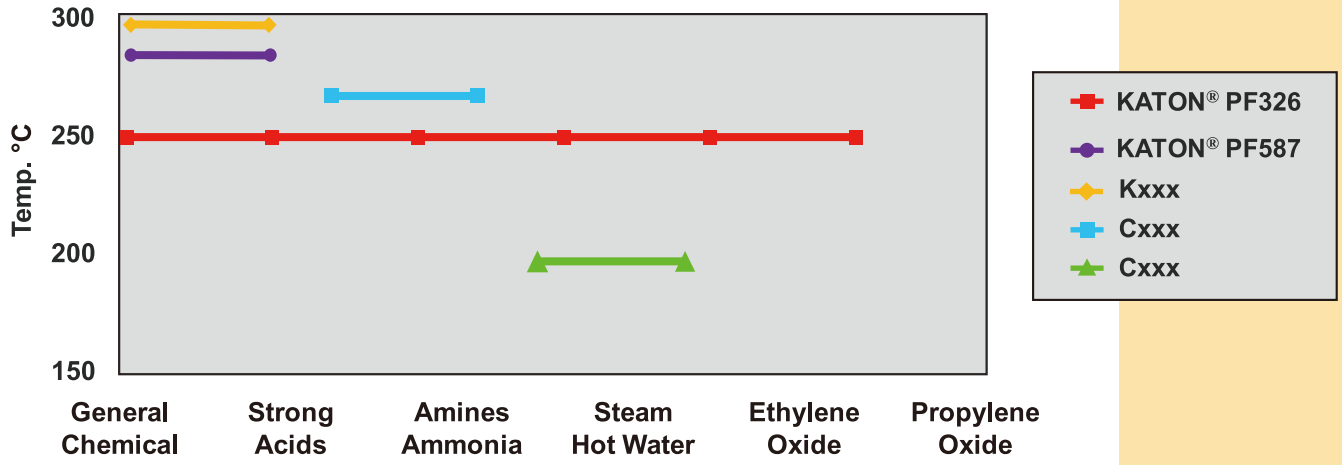
PF587 compare with other compound --- Compression set @ 230°C



Tests carried out according to ASTM D1414, 25% compression for 70 hours

1 - Comp Matl K began to disintegrate

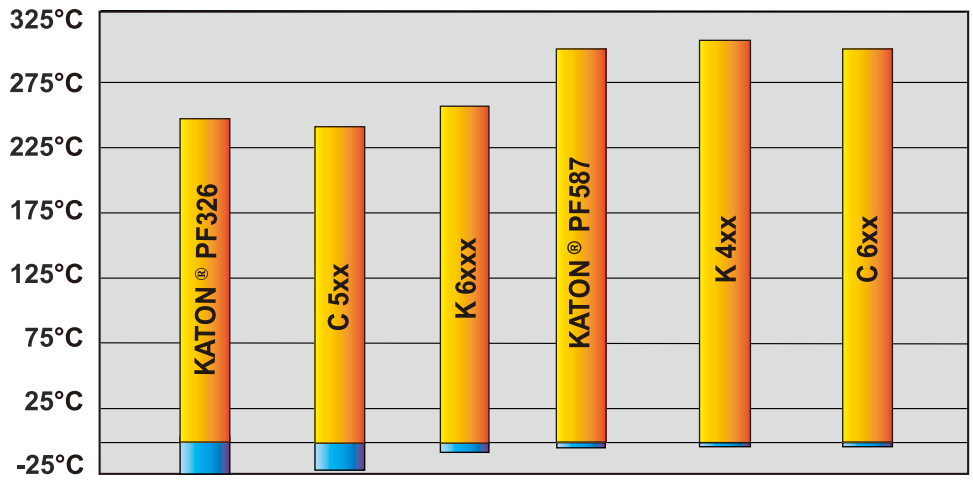
PF587 compare with other compound --- Chemical test



PF587 compare with other compound --- Chemical resistance

Media	Temp (C)	Duration (Hrs)	PF587	Cxxx
Formaldehyde	65	168	A	A
Butyraldehyde	50	168	A	B
Tetrachloroethylene	Ambient	168	A	A
Carbontetrachloride	Ambient	168	A	A
Hydrofluoric Acid (48%)	Ambient	168	A	A
Triethanolamine	40	168	A	A
Ethylenediamine	90	70	B	B
Ethylene Oxide	Ambient	70	A	A
Hydrogen Sulphide	40	168	A	A
Hot water	160	168	A	A
Steam	160	168	A	A
Toluene	100	168	A	A

PF587 compare with other compound --- Temperature comparison



TGA analysis compare with other compound

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Search algorithm : Correlation
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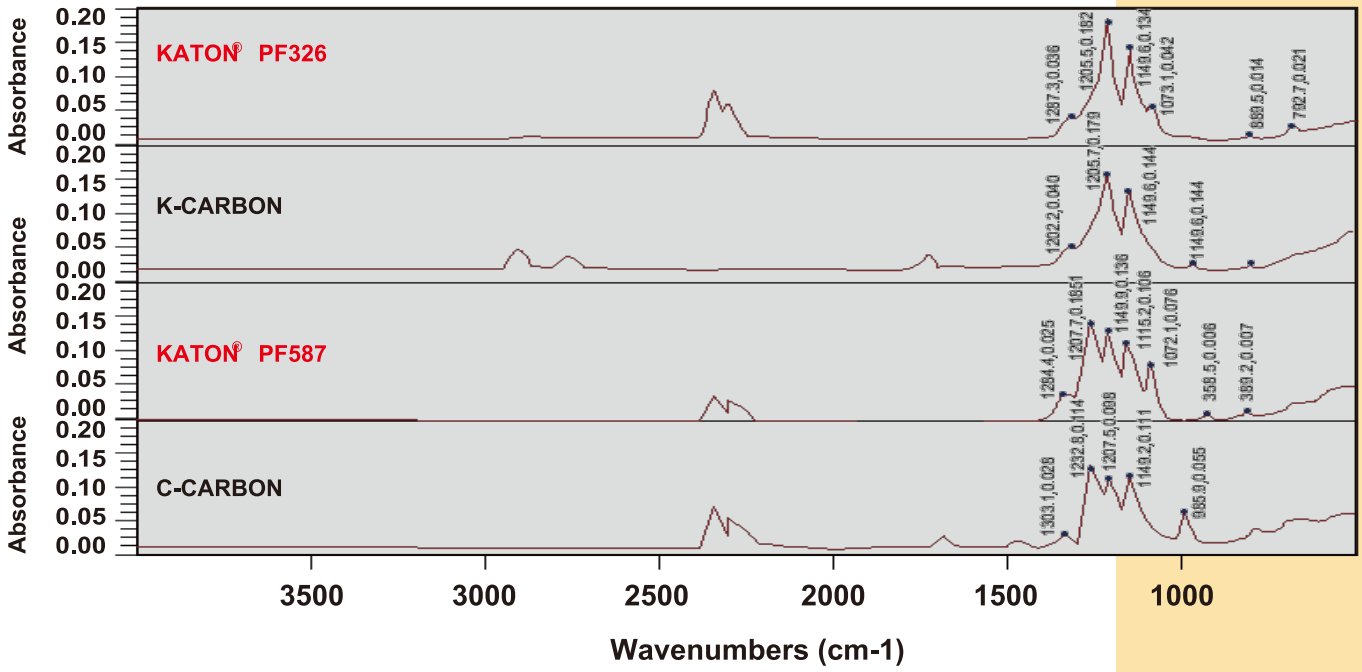

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