



KALFLUO[®]



Perfluororelastomer FFKM Series

Guangzhou JST Seals Technology Co., Ltd.

COMPANY PROFILE



JST has a complete technical system, including material formulation laboratory , comprehensive performance laboratory for high & low temperature and high pressure products, -196°C cryogenic temperature laboratory, equipped with high and low temperature tensile testing machine, material abrasion testing machine, material immersion testing machine, low temperature retraction testing machine , DSC vulcanization tester, carbon black dispersion analyzer, creep tester, finite element analysis (FEA) , and in combination with the company's PLM system, it can make deeper researches on elastomer materials, polymer composites and product performance.

We have elastomer seal production workshop, polymer seal production workshop, class 10,000 clean room, and tooling processing workshop.

JST's products and services cover oil & gas drilling, chemicals , semiconductor, new energy, construction machinery, LNG, aerospace, nuclear & wind power, medical equipment and other industries.





To support the replacement and upgrade of seals in semiconductor industry and medical equipment industry, JST has devoted to R&D on semiconductor FFKM compounds, medical & food compounds, and set up a class 10,000 clean room. We have more optimized and advanced production processes, a higher-standard quality control system, a more accurate logistics control system, as well as a safer, healthier and more environment-friendly management system.



KALFLUO®

Perfluororelastomer FFKM Series

This is sealing product developed by JST to meet the increasingly demanding sealing needs of equipment manufacturers and users in semiconductor, petrochemical, mechanical seal, instrumentation, energy, biopharmaceutical, food and medical industries. In addition to chemical inertness and thermal stability, FFKM also has the unique elasticity and durable sealing force of synthetic rubber.

FFKM has excellent chemical corrosion resistance and high temperature resistance characteristics, which makes FFKM widely used in various harsh working conditions for chemical applications.

KALFLUO®	Applicable Temp °C	Color	Hardness Shore A	Tensile Strength MPa	Elongation at break %	Compression set 70Hrs200°C %	Application Characteristics
FW0975	-15~270	Black	77	20.2	153	15.7	Extensive chemical resistance
FW0175	-15~230	Black	76	19.2	146	21	Extensive chemical resistance
FW0275	-20~230	Black	76	20.5	160	21.2	Extensive chemical resistance, withstand hot Ammonia
FW0675	-15~270	White	76	20.2	155	12.6	Extensive chemical resistance
FW0775	-2~315	Black	76	14.2	145	19.3	High temperature
FW0875	-2~300	Black	78	18.7	163	25	Hot steam. Water
FW0190	-10~270	Black	92	17.5	119	25.7	Extensive chemical resistance, high pressure
FW0390	-2~300	Black	91	19.5	121	31	High temperature, high pressure
FW1075	-40~230	Black	77	16	175	29	Low temperature



FFKM for chemical applications can withstand up to 1600 types of chemicals, including acids, alkalis, organic solvents, aromatics, corrosive gases, amines, esters, oils and other chemicals, as shown in the table below:

Chemicals	Immersion Temp (°C)	Immersion Time (hrs)	Medium resistance grade	
			KALFLUO™	FKM
Acid				
HNO3 (65%)	80	72	A	C
HCl (37%)	80	72	A	B
H2SO4 (98%)	60	70	A	A
H3PO4 (45%)	60	168	A	A
ClHSO3	23	168	A	/
HCOOH (80%)	100	168	A	C
	100	336	A	C
Alkalires				
NaOH (50%)	150	72	A	C
NH3	100	500	A	/
NH3 · H2O (28%)	100	336	A	/
C4H12ClN	90	168	A	/
C2H8N2	100	72	B	/
C2H8N2	23	168	A	/
C3H7NO	150	168	A	/
Alcohds,Ketones,Esters,Ethers				
C3H6O	23	168	A	D
C4H8O	23	168	A	/
C4H8O2	23	168	A	D
C3H8O	70	168	A	/
C6H12O	120	168	A	/
C6H14O	90	72	A	/
Hydrocarbons				
C7H	23	168	A	B
C2H4O	23	168	A	/
C7H8	70	168	A	B
C6H5Cl	100	168	A	B
Other				
C2H6OS	80	336	A	/
H2O	220	168	A	/
H2O(g)	220	168	A	/
CH3CN	23	168	A	/
Kerosene	23	168	A	A
Petroleum	236	168	A	B

KALFLUO® FW0975 has excellent chemical corrosion resistance and can resist organic acids, inorganic acids, alkalis, esters, ethers, ketones, aldehydes, superheated water and water vapor. The maximum operating temperature is 270°C, and the long-term use temperature is 230°C. It can be made into O-rings, diaphragms, gaskets, rubber strips, rubber sheets and customized products.

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	77	ASTM D2240
100% modulus	MPa	8.8	ASTM D412, 500mm/min
Tensile strength	MPa	20.2	ASTM D412, 500mm/min
Elongation at break	%	153	ASTM D412, 500mm/min
Compression set 70h×204°C	%	15.7	ASTM D395B 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	++++
Alcohol	++++
Aldehydes	++++
Amine	+++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	++++
Strong oxidant athylene	++
Oxide/propylene oxide	++++
Hot air	+++

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Mixers and Grinders
- Analytical Instruments
- Spraying equipment

Color

Black

Note: The above tests are sample tests, For reference only.

++++=Excellent
 +++ = Very good
 ++ = Good
 + = Bad

KALFLUO® FW0175 has excellent resistance to chemical corrosion, organic acid, inorganic acid, alkali, ester, ether, ketone, aldehyde, superheated water and steam. The maximum operating temperature is 230 °C. It can be made into O-ring, diaphragm, gasket, rubber strip, rubber plate and customized products.

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Mixers and Grinders
- Analytical Instruments
- Spraying equipment

Color

Black

Note: The above tests are sample tests, For reference only.

++++=Excellent
 +++ = Very good
 ++ = Good
 + = Bad

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	76	ASTM D2240
100% modulus	MPa	6.8	ASTM D412, 500mm/min
Tensile strength	MPa	19.6	ASTM D412, 500mm/min
Elongation at break	%	146	ASTM D412, 500mm/min
Compression set 70h×204°C	%	21.2	ASTM D395B 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	++++
Alcohol	++++
Aldehydes	++++
Amine	++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	++++
Strong oxidant athylene	++
Oxide/propylene oxide	++++
Hot air	+++

KALFLUO® FW0275 has excellent resistance to chemical corrosion, organic acid, inorganic acid, alkali, ester, ether, ketone, aldehyde, superheated water and steam. The maximum operating temperature is 230 °C. It is especially suitable for high-temperature amine (>70 °C) environment. It can be made into O-ring, diaphragm, gasket, rubber strip, rubber plate and customized products.

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	76	ASTM D2240
100% modulus	MPa	10.8	ASTM D412, 500mm/min
Tensile strength	MPa	19.5	ASTM D412, 500mm/min
Elongation at break	%	160	ASTM D412, 500mm/min
Compression set 70h×204°C	%	21.7	ASTM D395B 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	++++
Alcohol	++++
Aldehydes	++++
Amine	++++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	++++
Strong oxidant ethylene	++
Oxide/propylene oxide	++++
Hot air	+++

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Mixers and Grinders
- Analytical Instruments
- Spraying equipment

Color

Black

Note: The above tests are sample tests, For reference only.

++++=Excellent
 +++ = Very good
 ++ = Good
 + = Bad

KALFLUO[®] FW0675 has excellent resistance to chemical corrosion, organic acid, inorganic acid, alkali, ester, ether, ketone, aldehyde, etc. It is applicable to the food and medical industry, especially in the processing of some plasma and gas deposition in the semiconductor manufacturing process. It has extremely low weight loss in oxygen and fluorine-containing plasma, and the maximum service temperature is 270 °C.

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Mixers and Grinders
- Analytical Instruments
- Spraying equipment

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	75	ASTM D2240
100% modulus	MPa	8.2	ASTM D412, 500mm/min
Tensile strength	MPa	20.2	ASTM D412, 500mm/min
Elongation at break	%	155	ASTM D412, 500mm/min
Compression set 70h×204°C	%	12.6	ASTM D395B 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	++++
Alcohol	++++
Aldehydes	++++
Amine	+++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	++++
Strong oxidant athylene	++
Oxide/propylene oxide	++++
Hot air	+++

Color

White

Note: The above tests are sample tests, For reference only.

++++=Excellent
 +++ = Very good
 ++ = Good
 + = Bad

KALFLUO® FW0775 has excellent resistance to chemical corrosion, organic acid, inorganic acid, alkali, ester, ether, ketone, aldehyde, etc. It has outstanding heat-resistant air aging performance. It can be used in the environment of high temperature hot air in the semiconductor manufacturing process, and the maximum operating temperature is 315 °C. It can be made into O-ring, diaphragm, gasket, rubber strip, rubber plate and customized products.

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	76	ASTM D2240
100% modulus	MPa	7.6	ASTM D412, 500mm/min
Tensile strength	MPa	14.2	ASTM D412, 500mm/min
Elongation at break	%	143	ASTM D412, 500mm/min
Compression set 70h×204°C	%	19.3	ASTM D395B 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	+++
Alcohol	++++
Aldehydes	++++
Amine	+
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	+
Strong oxidant athylene	++
Oxide/propylene oxide	X
Hot air	++++

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Gas inlet/outlet
- Reactor
- Mixers and Grinders
- Analytical Instruments

Color

Black

Note: The above tests are sample tests, For reference only.

++++=Excellent
 +++ = Very good
 ++ = Good
 + = Bad

KALFLUO[®] FW0875 has excellent chemical corrosion resistance, the maximum continuous service temperature is 300 °C, especially suitable for high-temperature superheated water and steam. It can be made into O-ring, diaphragm, gasket, rubber strip, rubber plate and customized products.

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Mixers and Grinders
- Analytical Instruments
- Spraying equipment

Color

Black

Note: The above tests are sample tests,
For reference only.

++++=Excellent
+++ = Very good
++ = Good
+ = Bad

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	76	ASTM D2240
100% modulus	MPa	11.5	ASTM D412, 500mm/min
Tensile strength	MPa	16.7	ASTM D412, 500mm/min
Elongation at break	%	150	ASTM D412, 500mm/min
Compression set 70h×204°C	%	18	ASTM D395B , 214-O-RING
Compression set 70h×280°C	%	40	ASTM D395B , 214-O-RING
Compression set 70h×300°C	%	47	ASTM D395B , 214-O-RING
Compression set 70h×316°C	%	56	ASTM D395B , 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	+++
Alkali	+++
Alcohol	++++
Aldehydes	+++
Amine	++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	++++
Strong oxidant athylene	++
Oxide/propylene oxide	+++
Hot air	++++

KALFLUO® FW0190 is resistant to inorganic acids, organic acids and alkaline substances as well as ketones, esters, ethers, aldehydes, superheated water, steam, etc. It is with high hardness and suitable for high pressure conditions. It is suitable for the environment of ethylene and styrene monomers. The maximum service temperature is 270 °C, the long-term continuous service temperature is 230 °C, and the minimum service temperature is - 10 °C.

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	92	ASTM D2240
100% modulus	MPa	11.2	ASTM D412, 500mm/min
Tensile strength	MPa	17.5	ASTM D412, 500mm/min
Elongation at break	%	119	ASTM D412, 500mm/min
Compression set 70h×204°C	%	25.7	ASTM D395B 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	++++
Alcohol	++++
Aldehydes	++++
Amine	++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	+++
Strong oxidant athylene	++
Oxide/propylene oxide	++++
Hot air	+++

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Analytical Instruments

Color

Black

Note: The above tests are sample tests, For reference only.

++++=Excellent
 +++ = Very good
 ++ = Good
 + = Bad

KALFLUO[®] FW0390 has excellent chemical corrosion resistance, especially suitable for the environment of superheated water and steam under high temperature and pressure. The maximum service temperature is 300 °C, and the minimum service temperature is - 2 °C. It can be made into O-ring, diaphragm, gasket, rubber strip, rubber plate and customized products.

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Mixers and Grinders
- Analytical Instruments
- Spraying equipment

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	91	ASTM D2240
100% modulus	MPa	17.2	ASTM D412, 500mm/min
Tensile strength	MPa	19.5	ASTM D412, 500mm/min
Elongation at break	%	121	ASTM D412, 500mm/min
Compression set 70h×204°C	%	31	ASTM D395B , 214-O-RING
Compression set 70h×280°C	%	42	ASTM D395B , 214-O-RING
Compression set 70h×300°C	%	55	ASTM D395B , 214-O-RING
Compression set 70h×316°C	%	59	ASTM D395B , 214-O-RING

Color

Black

Note: The above tests are sample tests,
For reference only.

++++=Excellent
+++ = Very good
++ = Good
+ = Bad

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	++++
Alcohol	++++
Aldehydes	++++
Amine	++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	++++
Strong oxidant athylene	++
Oxide/propylene oxide	++++
Hot air	+++

KALFLUO® FW1075 has excellent chemical resistance and can withstand organic acids, inorganic acids, alkalis, esters, ethers, ketones, aldehydes, superheated water and steam. The maximum service temperature is 230 °C and the minimum service temperature is - 40 °C. It is especially suitable for the application of low temperature and harsh conditions.

It can be made into O-ring, diaphragm, gasket, rubber strip, rubber plate and customized products.

Mechanical Property

Properties	Unit	Value	Standard
Hardness	Shore A	77	ASTM D2240
100% modulus	MPa	6.8	ASTM D412, 500mm/min
Tensile strength	MPa	16	ASTM D412, 500mm/min
Elongation at break	%	175	ASTM D412, 500mm/min
Compression set 70h×204°C	%	29	ASTM D395B 214-O-RING

Chemical Resistance

Chemicals	Medium resistance grade
Aromatic hydrocarbon/aliphatic hydrocarbon oils	++++
Acid	++++
Alkali	+++
Alcohol	++++
Aldehydes	++++
Amine	+++
Ethers	++++
Ester	++++
Ketones	++++
Hot water and mixed process streams E	+++
Strong oxidant athylene	++
Oxide/propylene oxide	+++
Hot air	+++

Application

- Mechanical seal
- Pump
- Valve
- Compressor
- Centrifuge
- Metering and control instruments
- Reactor
- Gas inlet/outlet
- Analytical Instruments

Color

Black

Note: The above tests are sample tests, For reference only.

++++=Excellent
 +++ = Very good
 ++ = Good
 + = Bad

O ring

- ◆ AS 568A USA Standard
- ◆ JIS B2401 Japan Standard
- ◆ METRIC Metric dimension standard
- ◆ GB3452.1 China national standard
- ◆ Customized non-standard O-ring

Molded parts

JST can make seals of customized shapes through high-precision mold production.

Customized seals

JST engineering team will cooperate with customers to design, develop and produce special seals based on their specific requirements.

Metal bonded parts

Through the special vulcanization process of bonding with stainless steel or other metals, JST manufactures metal and rubber bonded parts, which are suitable for various geometric shapes and metal materials to meet customization requirements.

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