



Lined Valve Expert



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We focus on Details
We Make Different
FVFT Brand, that can be trust.

FVFT Technology Founded in year 2010, we specialize in Manufacturing Various Lined Valves&Fittings, Including PTFE/PFA/FEP Lined Valve and Ceramic Lined Valve, as well as standard and customized fittings. The products are widely used in modern anti-corrosion engineering fields such as Lithium Battery, petroleum, chemical industry, pharmacy, printing and dyeing, electrical engineering, ship building, metallurgy, military industry, semiconductor chemistry, electronic phosphoric acid, Etc.

Our Principle: Pragmatic, Creative and Excellent.

FVFT Brand that you can trust.

FVFT Product Line:

Lined Valves (Lined Butterfly Valve, Lined Ball Valve, Lined Diaphragm Valve Etc.)

Lined Pipe&Fittings (Y-Type Strainer, Sight Glass, Elbow, Tee, Reducer, Expansion Joint, Pipe Etc.)

Ceramic Lined Valve (Ceramic Lined Butterfly Valve, Ceramic Lined Ball Valve, Ceramic Lined Diaphragm Valve Etc.)

Ceramic Lined Fitting (Y-Type Strainer, Sight Glass, Elbow, Tee, Reducer, Expansion Joint, Pipe Etc.)

Plastic Valve&Fitting (Plastic Globe Valve, Plastic Check Valve, Plastic Y-Type Strainer Etc.)



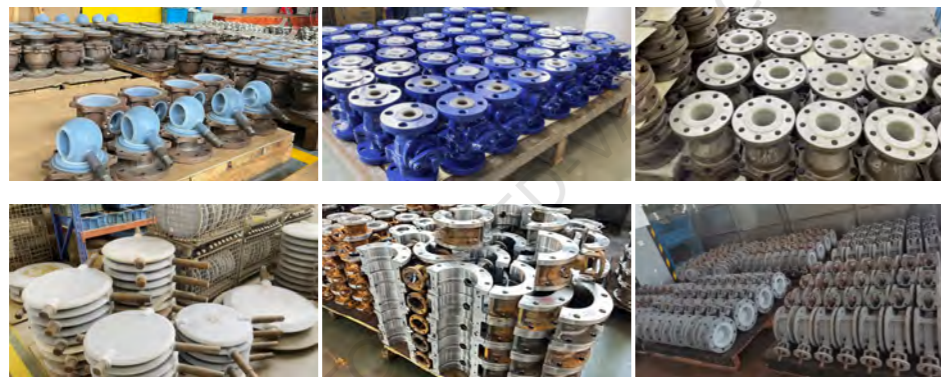
Contents

01	Lined Ball Valve	Page 7-18
02	Lined Butterfly Valve	Page 19-26
03	Lined Diaphragm Valve	Page 27-32
04	Lined Check Valve	Page 33-40
05	Lined Wedge Gate Valve	Page 41-44
06	Lined Globe Valve	Page 45-50
07	Lined Plug Valve	Page 51-54
08	Lined Control Valve	Page 55-60
09	Lined Accessories	Page 61-66
10	Lined Pipe Fittings	Page 67-74
11	Fluorine Plastic Performance	Page 75-76

Processing



Stockage



Inspection



FVFT

FVFT Lined Valve



Lined Control Valve



Lined Control Valve

The Pneumatic/electric lined single-seat control valve is the execution unit in automation instrument system. It consists of many spring film actuators/electric actuators and through-way fluorine-lined single-seat regulator. Installed on the medium pipeline and operated with other instrument to control parameters such as flow rate etc.

Due to the wetted parts of valve are lined with fluorine plastic (PTFE, PFA, FEP), and the stem sealing adopts PTFE bellow and packing, it has better performance in corrosion resistance and sealing and its installation has better reliability. It's suitable for any corrosive medium except for "molten alkali metals and fluorine element". The lined control valves are widely used in petrochemical, electric power, metallurgy, pulp & paper and other industrial auto-mation device.

Lining material: FEP, PTFE, PFA, GXPO etc.

Operating method: Electric, Pneumatic, Hydraulic



Lined Control Valve

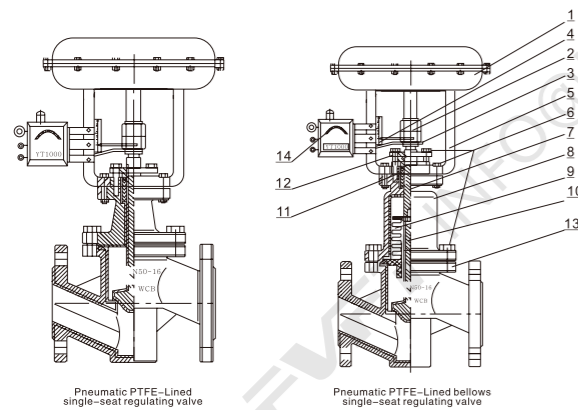


PTFE-Lined pneumatic single seat control valve

In contact with liquid in the valve body wall and fluorine plastic process components adopt heat moulding line, coating a layer of FEP(F46), polytetrafluoroethylene (PTFE), soluble anti-corrosion materials such as PTFE(PFA), can achieve completely cut off the contact between corrosive media and the valve body shell. They have good sealing performance, sensitive action, S-shaped fluid channel, small pressure drop loss, large valve capacity, precise flow characteristics, with electric or pneumatic valve positioners, can achieve automatic adjustment and control of process pipeline fluids, widely applicable to highly corrosive media such as acids, alkalis, toxic and volatile substances. Suitable for porous media, such as gases and liquids.

In addition to the functions mentioned above, pneumatic PTFE-Lined electric single-seat bellows corrugated pipe regulating valve also adds a PTFE corrugated pipe sealing structure, which can better meet the sealing performance, achieve multiple sealing protections, without leakage, and provide better sealing guarantee for demanding media (such as chlorine gas, which is highly toxic and corrosive).

Sealing guarantee for demanding media (such as chlorine gas, which is highly toxic and corrosive).



Characteristic

1. The corrosion resistance, can almost all media(including concentrated nitric acid and aqua regia)corrosion.
2. The sealing performance is good, use double sealing structure, corrugated pipe and packing to ensure no leakage.
3. Due to the use of soft seals for the valve core and seat, the leakage is low.
4. With a multi spring pneumatic diaphragm actuator, it has a large output torque and a compact structure.

Structure principle

The pneumatic fluorine lined single seat regulating valve and the pneumatic fluorine lined single seat corrugated pipe regulating valve are composed of a pneumatic thin film actuator, a corrosion-resistant straight through valve, and a locator. Their structural principles are shown in the following figure: the pneumatic thin film actuator is an important component of the automatic control system for the production process of pneumatic regulating valves, and it has two forms of action: positive and negative

1. When the signal pressure increases, the push rod extends out of the diaphragm chamber, which is called positive action, and cooperates with the valve to form an air closing type (B).

2. When the signal pressure increases, the push rod returns to the diaphragm chamber, which is called a reaction and cooperates with the valve to form an air opening (K).

The principle is to use compressed air as the energy source, and according to the pressure signal of the gas source input by the electric pneumatic valve positioner or solenoid valve, this pressure acts on the diaphragm chamber to generate a thrust compression spring component, and cause the push rod to displace. When the reaction force generated by the compression of the push rod and the spring component is balanced, the valve stem stabilizes on the corresponding stroke. According to the principle of force balance, a certain proportional relationship is formed between the size and the input size of the pressure signal, thereby achieving accurate positioning of the valve core.

Material List of Main Parts

No.	Name	No.	Name
01	Pneumatic actuators	08	Corrugated pipetop cover
02	Pointer disk	09	Corrugated pipe
03	Travel indicatorscale	10	Valve core
04	Hexagon nut	11	Packing
05	Actuator support	12	Packing gland
06	Nut, Bolt	13	Body
07	Stem	14	Positioner

Technical parameter

DN(mm)	20												25	32	40	50	65	80	100	125	150	200	250	300							
Valve seat diameter	10	12	15	20	25	32	40	50	65	80	100	125	150	200	250	300															
Rated flow coefficient	Linear															1.8	2.8	4.4	6.9	11	17.6	27.5	44	69	110	176	275	440	690	1000	1600
	Equal percentage															1.6	2.5	4	6.3	10	16	25	40	63	100	160	250	400	630	900	1440
Actuator model	KA-2				KA-3				KA-4				KA-5				KA-6														
Effective area of diaphragm	280				350				560				900				1400														
Rated travel	10				16				25				40				60				100										
PN	0.6MPa 1.0MPa 1.6MPa 2.5MPa																														
Mode of action	Air to close type, Air to open type																														
Signal range	20-100, 40-200, 80-240																														
Flow characteristics	Linear, Equal percentage																														
Adjustable range	30: 1																														
Working temperature	-30° C-150° C																														
Air supply pressure	0.14-0.4																														
Allowable differential pressure (MPa)	Without positioner															5.3	3.7	2.3	1.3	0.85	0.74	0.47	0.3	0.27	0.18	0.11	0.12	0.08	0.05	0.04	0.03
	With positioner															6.4	6.4	5.5	3.01	2	1.7	1.1	0.71	0.63	0.41	0.26	0.28	0.20	0.11	0.08	0.05

Note:

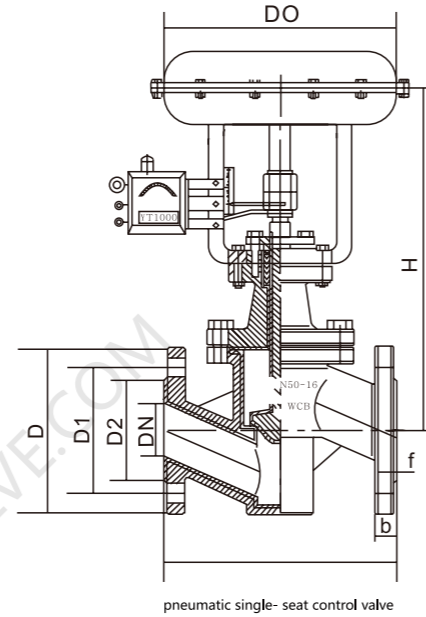
1. The data in this table are according to allowable differential pressure 20-100 Kpa standard springs.
2. This table allows the pressure difference to be calculated for the fully closed position (P2=0) of the valve in the open state, and the valve seat pressing force is taken as 0.05Ae.
3. The pressure difference exceeds the range in the table above. An actuator corresponding to the output force can be selected.

Technical Performance

Item	General regulating valve		Middle temperature (flexible graphite packing) or below sealed regulating valve															
	Without positioner	With positioner	Without positioner	With positioner														
Basic deviation(%)	±5	+1	±15	±4														
backlash(%)	3	1	10	3														
Dead zone(%)	3	0.4	8	1														
Always pointdeviation	Air to open	Opening point	±2.5	±6														
		Terminal point	±5	±15														
	Air to close	Closing point	±5	±15														
		Terminal point	±2.5	±6														
Rated travel deviation(%)	±2.5	±2.5	±6															
Allowable leakage	Regulating type	10-4X Rated capacity of valve																
	Regulating cut-off valve	Valve seat diamete	20	25	40	50	65	80	100	150	200	250	300					
		Soft seal: VI Level																
Rated flow deviation(%)	±10																	
Fixed flow characteristic deviation	Meet the standards of IEC534-1976 and GB/T13927																	
Optional accessories	positioner, air set, solenoid valve, limit switch etc.																	

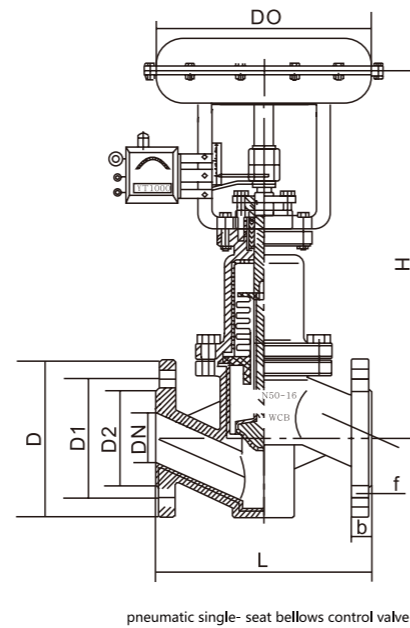
Material List of Main Parts

Name	Material quality
Body, Cover	HT200, ZG230-450, ZG0Cr18Ni9
Lining materials	F46, F4, PFA, PO, PE, PP
Corrugated pipematerials	PTFE(F4)
Spool material	0Cr18Ni9
Thin film membrane	Nitrile rubber reinforced polyester plant
Packing Gasket	PTFE, Flexible graphite
Spring	60Si2Mn
Film cover	A3
Stem, Push rod	2Cr13, 0Cr18Ni9



DIMENSIONS PN10

DN	L	D	D1	D2	f	b	Z-Φd
15	130	95	65	45	3	16	4-Φ14
20	150	105	75	55	3	18	4-Φ14
25	160	115	85	65	3	18	4-Φ14
32	180	140	100	78	3	18	4-Φ18
40	200	150	110	85	3	18	4-Φ18
50	230	165	125	100	3	18	4-Φ18
65	290	185	145	120	4	18	4-Φ18/8-Φ18
80	310	200	160	135	4	20	8-Φ18
100	350	220	180	155	4	20	8-Φ18
125	400	250	210	185	4	22	8-Φ18
150	480	285	240	210	5	22	12-Φ22
200	600	340	295	265	5	24	12-Φ22
250	730	395	350	320	5	26	12-Φ22
300	850	445	400	368	5	28	12-Φ22



DIMENSIONS PN10

DN	L	D	D1	D2	f	b	Z-Φd
15	130	95	65	45	3	16	4-Φ14
20	150	105	75	55	3	18	4-Φ14
25	160	115	85	65	3	18	4-Φ14
32	180	140	100	78	3	18	4-Φ18
40	200	150	110	85	3	18	4-Φ18
50	230	165	125	100	3	18	4-Φ18
65	290	185	145	120	4	18	4-Φ18/8-Φ18
80	310	200	160	135	4	20	8-Φ18
100	350	220	180	155	4	20	8-Φ18
125	400	250	210	185	4	22	8-Φ18
150	480	285	240	210	5	22	12-Φ22
200	600	340	295	265	5	24	12-Φ26
250	730	405	355	320	5	26	12-Φ26
300	850	460	410	370	5	28	16-Φ30

Notes of installation and usage

1. Pneumatic single seat control valves should be installed vertically on pipelines, and those with large volume and weight, as well as those used in vibration situations, should be supported and clamped.
2. Pneumatic single seat control valves are generally installed in bypass pipelines, so that they can be converted to bypass operation in case of diaphragm failure or maintenance, enabling the normal operation of the production process. In generally unimportant situations, the bypass pipeline can be omitted after installing a handwheel mechanism for manual operation, and the valve opening can be limited. When the handwheel mechanism stops using, it should be restored to the original neutral position to facilitate the normal operation of the self-control system.
3. When cleaning the pipeline, adjust it to the maximum opening to remove any dirt from the pipeline.
4. If the valve body is lined with an anti-corrosion layer, a corrosion-resistant soft pad should be used when installed on the pipeline, and care should be taken not to damage the sealing of the valve body flange.
5. The packing gland should be inspected regularly to prevent damage to other parts and accidents caused by leakage and corrosion.

Technical Performance

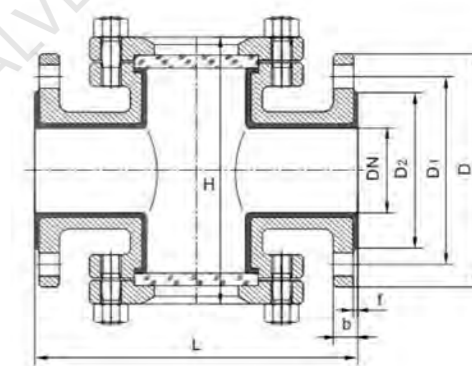
Items		Technical performance											
Basic error(%)		≤ ±5											
Return difference(%)		≤ 3											
Dead zone(%)		≤ 5											
Leakage rate		≤ 0.01% Rated capacity of valve											
<(%)Rated travel deviation		≤ ±10; if KV ≤ 6.3 , ≤ ±15											
Allowable leakage	Regulating type	10-4X Rated capacity of valve											
	Regulating cut-off valve	Valve seat diamete	20	25	40	50	65	80	100	150	200	250	300
		Soft seal: VI Level											
Rated flow deviation(%)		±10											
Adjustable range		Meet the standards of IEC534-1976 and GB/T13927											

Lined Accessories



Lined Double Window Sight Glass

The lined sight glass is used to observe the flow rate and color changes of unit fluids in pipelines or equipment, and directly monitor the chemical process flow. The body is made of carbon steel precision casting, lined with fluoroplastic, and the lens is made of high-quality tempered glass, which has the best corrosion resistance and mechanical strength, and has the characteristics of beautiful appearance, high strength, and durability. It is currently the most ideal choice for anti-corrosion equipment.



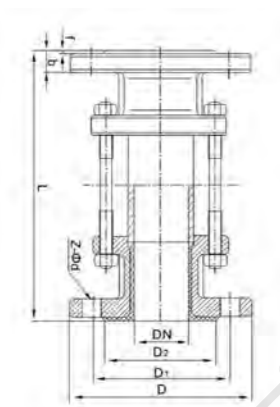
DIMENSIONS PN16

DN (mm)	NPS (inch)	L	D	D1	D2	b	f	Z-Φd	H
15	1/2	160	95	65	45	16	3	4-Φ14	103
25	1	160	115	85	68	18	3.5	4-Φ14	122
32	1-1/4	200	140	100	78	18	3.5	4-Φ18	130
40	1-1/2	200	150	110	88	18	3.5	4-Φ18	140
50	2	230	165	125	102	18	4	4-Φ18	140
65	2-1/2	290	185	145	122	18	4	4/8-Φ18	170
80	3	300	200	160	138	20	4	8-Φ18	190
100	4	350	220	180	158	20	4.5	8-Φ18	210
125	5	350	250	210	188	22	4.5	8-Φ18	250
150	6	390	285	240	212	22	4.5	8-Φ18	265
200	8	450	340	295	268	24	4.5	12-Φ22	300

Lined Tubular Sight Glass



Sight glasses are widely used in industrial pipelines such as petroleum, chemical, pharmaceutical and food industries. Through the sight glass, the flow of liquids, gases, vapors, lubricants and other media in the pipeline can be observed at any time, so as to monitor production and avoid accidents during the production process. They are necessary accessories on pipeline installations.



Dimensions

DN (mm)	PN1.6(MPa)							
	L	D	D1	D2	f	b	Z-Φd	H
20	220	105	75	58	3	18	4-Φ14	100
25	220	115	85	68	3.5	18	4-Φ14	100
32	230	140	100	78	3.5	18	4-Φ18	100
40	235	150	110	88	3.5	18	4-Φ18	100
50	245	165	125	102	4	18	4-Φ18	100
65	230	185	145	122	4	18	4-Φ18/8-Φ18	100
80	270	200	160	138	4	20	8-Φ18	100
100	255	220	180	158	4	20	8-Φ18	100
125	300	250	210	188	4.5	22	8-Φ18	100
150	310	285	240	212	4.5	22	8-Φ22	100
200	310	340	295	268	5	24	12-Φ22	100

Lined Y Type Strainer



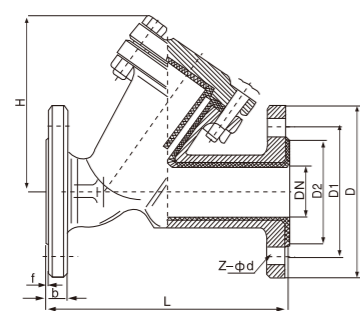
A lined basket strainer is an anti-corrosion equipment used to remove solid particles from liquids, which can protect the normal operation of compressors, pumps, instruments, and etc. When the fluid goes through the filter screen, its impurities are blocked, and the clean filtrate is discharged from the filter outlet. When cleaning is needed, simply remove the detachable filter barrel, process it and then reinstall it. Therefore, it is easy to maintain. Nowadays, it has been widely used in industries such as petrochemicals, pharmaceuticals, refrigeration, light industry and environmental protection. If it is installed at the inlet of the pump or other parts of the system pipeline, it can extend the service life of the pump and other equipments. Basket type strainers are essential equipment in industrial production as they ensure the safety of the entire system.

Lined Basket Strainer

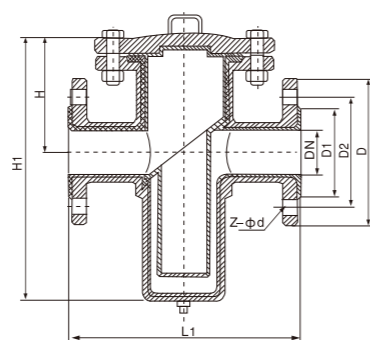


Material List of Main Parts

NO.	Part name	Material
1	Body and Cover	WCB CF8 CF8M CF3 CF3M
2	Lining	FEP, PTFE, PFA, PO
3	Filter screen	PTFE



Y type filter



Basket type filter

DIMENSIONS

DN	NPS	L	L1	D	D1	D2	f	b	Z-φd	L	L1	D	D1	D2	f	b	Z-φd
mm	inch	PN10(1.0MPa)								PN16(1.6MPa)							
15	1/2	150	160	95	65	45	3	16	4-φ14	150	160	95	65	45	3	16	4-φ14
20	3/4	150	170	105	75	55	3	18	4-φ14	150	170	105	75	55	3	18	4-φ14
25	1	160	180	115	85	65	3	18	4-φ14	160	180	115	85	65	3	18	4-φ14
32	1-1/4	180	200	140	100	75	3	18	4-φ18	160	200	140	100	75	3	18	4-φ18
40	1-1/2	200	260	150	110	85	3	18	4-φ18	200	260	150	110	85	3	18	4-φ18
50	2	230	260	165	125	100	3	18	4-φ18	220	260	165	125	100	3	18	4-φ18
65	2-1/2	290	330	185	145	120	3	18	4-φ18/8-φ18	290	330	185	145	120	3	18	4-φ18/8-φ18
80	3	310	340	200	160	135	3	20	8-φ18	310	340	200	160	135	3	20	8-φ18
100	4	350	400	220	180	155	3	20	8-φ18	350	400	220	180	155	3	20	8-φ18
125	5	400	480	250	210	185	4	22	8-φ18	400	480	250	210	185	4	22	8-φ18
150	6	480	500	285	240	210	4	22	8-φ22	480	500	285	240	210	4	22	8-φ22
200	8	600	560	340	265	265	4	24	8-φ22	550	560	340	295	265	4	24	12-φ22

DN	NPS	L	L1	D	D1	D2	f	b	Z-φd
mm	inch	PN25(2.5MPa)							
15	1/2	150	160	95	65	45	3	14	4-φ14
20	3/4	150	170	105	75	55	3	16	4-φ14
25	1	160	180	115	85	65	3	16	4-φ14
32	1-1/4	180	200	140	100	75	3	18	4-φ18
40	1-1/2	200	260	150	110	85	3	18	4-φ18
50	2	230	260	165	125	100	3	20	4-φ18
65	2-1/2	290	330	185	145	120	3	22	8-φ18
80	3	310	340	200	160	135	3	24	8-φ18
100	4	350	400	235	190	155	3	26	8-φ22
125	5	400	480	270	220	185	4	28	8-φ26
150	6	480	500	300	250	210	4	30	8-φ26
200	8	600	560	360	310	275	4	32	12-φ26

Fluorine Plastic Performance

Performance	Item	Name Code Unit	PTFE	PCTFE	PVDF	RE.	PFA	GXPO	PE	PP
			F4	F3	F2	F46	PFA	GXPO	PE	PP
Physical Performance	Specific Gravity	g/cm ³	2.1~2.2	2.1~2.2	1.76	2.1~2.2	2.1~2.2	0.92	0.92	0.92
	Water absorption	%	0.001~0.005	≤ 0.005	0.04	≤ 0.01	≤ 0.01	0.005	0.005	0.005
	Shrinkage rate of finished product	%	1~5	1~2.5	2.0	2~5	1~5	1~2	1~2	1~2
	Embrittlement coefficient	10 ⁻⁵ /K	10-12	4.5-7.0	8.5-15.3	8.3~10.5	8.3-12	-	-	-
	Embrittlemen temperature T1	°C	-180~-195	-180~-195	-62	-260	-180~-195	-40	-40	-20
	Hot resistance T2	°C	260	120-190	150	204	260	100	100	100
	Recommend working temperature T3	°C	≤ 180	≤ 120	≤ 100	≤ 150	≤ 200	≤ 85	≤ 85	≤ 85

Mechanical Performance	Hardness	SOSIXO	D50-65	D74-78	D80	(R45)	D50-65	D40	D40	D40
	Friction coefficient f	-	0.06	0.3~0.4	0.14~0.17	0.06~0.01	0.06~0.01	-	-	-
	Tensile strength σ _b	Mpa	13.7-24.5	31.3-39.2	45~48.3	20.0~24.5	14~28	≥ 10	6.9~14	7.5~14
	Bending strength σ _w	Mpa	10.7-137	53.9-68.6	-	-	15~28	-	-	-
	Compression strength σ _y	Mpa	111	80.3-50.9	68.6	-	111	-	-	-
	Impact strength σ _k	KJ/M ²	16	12.7~16.6	19.7	No breakage	1+	-55	45	50
	Ultimate elongation Δλ	%	250~350	30~190	30~300	250~270	300~500	480	300~600	600~700
	Breakdown voltage v	KV/mm	25~40	19.7	10.2	40	24~40	-	-	-

Processing Performance	compression molding	Good	Good	Good	Good	Good	Good	Good	Good
	Injection molding	-	Good	Good	Good	Good	Good	Good	Good
	Lamination	Good	Good	Good	Good	Good	Good	Good	Good
	Layer	Good	Good	Good	Good	Good	Good	Good	Good

Fluorine Plastic Performance

Corrosion Resistance Performance (only for Reference)	Medium	Concentration (%)	Temperature °C	PTFE	PCTFE	PVDF	FEP	PFA	GXPO	PE	PP
	Sulfuric acid	10~98	Normal temperature ~100	A	A~B	A~B	A	A	Concentration ≤ 50%	Concentration ≤ 60%	A
Ntric acid	5~98	Normal temperature ~100	A	A	A	A	A	Concentration ≤ 30%	Concentration ≤ 60%	A	
Hydrochloric acid	10~38	Normal temperature ~100	A	A	A	A	A	Concentration ≤ 38%	Concentration ≤ 60%	A~B	
Acetic acid	10~100	Normal temperature ~100	A	A~B	A~B	A	A	Concentration ≤ 10%	Concentration ≤ 60%	A	
Chromic acid	50~100	Normal temperature ~70	A	A~B	A~B	A	A	Concentration ≤ 30%	Concentration ≤ 20%	A	
phosphoric acic	50~85	Normal temperature ~100	A~B	D	D	A~B	A~B	Concentration ≤ 85%	Concentration ≤ 80%	A	
Trichloromethan	100	Normal temperature	C	B	B	C	C	X	X	X	
Coppersulfate	15	Normal temperature	A	C	C	A	A	Concentration ≤ 90%	Concentration ≤ 80%	A	
Diethy ether	100	Normal temperature	B	C	C	B	B	X	X	X	
Ethyl acetate	100	Normal temperature	B	A	A	B	B	X	X	X	
Petrol	100	Normal temperature	A	A~B	A~B	A	A	X	X	X	
Hydrogen peroxide	3~30	Normal temperature	A	A	A	A	A	Concentration ≤ 30%	Concentration ≤ 60%	A	
Nitrobenzene	100	Normal temperature	A	A~B	A~B	A	A	X	X	X	
Superalkali	10~50	Normal temperature ~100	A	A	A	A	A	Concentration ≤ 80%	Concentration ≤ 60%	A	
Sodium Hypochlorite	-	70	A	B	B	A	A	Concentration ≤ 80%	Concentration ≤ 60%	A~B	
Hydroxyl acid	40~99	-10~30	A~B	B	B	A~B	A~B	Concentration ≤ 80%	Concentration ≤ 60%	A~B	
Oleum	20	Normal temperature	A	B	B	A	A	X	X	X	
Acrylonitrile	-	Normal temperature	B	C	C	B	B	-	-	-	
Aniline	100	Normal temperature	B	B	B	B	B	Concentration ≤ 60%	Concentration ≤ 20%	B	
Benzene	100	Normal temperature	B	C	C	B	B	X	X	X	
Butyl acetate	100	Normal temperature	B	C	C	B	B	Concentration ≤ 60%	Concentration ≤ 20%	B	
Tetrachloromethane	Reagent grade	Normal temperature	B	C	C	B	B	X	X	X	