



APPLICATION:

FEP protective screens can be used if the sight glass plates, e.g. made of borosilicate glass, are exposed to strong chemical stress. Sight glass plates made of soda lime glass or borosilicate glass are no longer recommended for safe and long-lasting operation when the pH values are elevated, such as in the case of alkaline solutions with a pH value of 14. Because of safety and cost reasons, the use of FEP protective screens is recommended.

Operating conditions:

Temperature:	up to 200 °C
Pressure:	depending on field of application

Technical Information:

modulus of elasticity	30 N/mm ²
Thermal conductivity at 23 °C	0,25 W/(m·Kg)

OPERATIONAL CHARACTERISTICS:

FEP is very similar to PTFE in material properties. Probably the most important difference lies in the transparency. Depending on its thickness, FEP is transparent to milky bluish. Due to its good light transmission, a process medium can be easily detected. By using a FEP protective screen, the aggressive process medium cannot attack the pressure-bearing sight glass plate.

TRANSPARENCY:

Depending on the thickness, the transparency of FEP protective screens may vary. The pictures on the left show an example of the transparency of the FEP protective panes in unfilled condition. On the left a 1.5 mm thick FEP protective screen is installed. On the right a FEP protective screen with a thickness of 0.5 mm. In both cases the process medium is always clearly visible. The application determines the thickness of the FEP shield.



CHEMICAL RESISTANCE:

Below is a selection of common process media depending on the resistance of FEP protective screens.

R = Resistant / NR = Not resistant / ND = No test performed yet

Process media	Resistance		
	20°C	60°C	100°C
Acetaldehyde	R	R	R
Acetic acid (10%)	R	R	R
Acetic acid (glac./anh.)	R	R	R
Acetic anhydride	R	R	R
Aceto-acetic ester	R	R	R
Acetone	R	R	R
Other ketones	R	R	R
Acetonitrile	R	R	R
Acetylene	R	R	R
Acetyl salicylic acid	R	R	R
Acid fumes	R	R	R
Alcohols	R	R	R
Aliphatic esters	R	R	R
Alkyl chlorides	ND	ND	ND
Alum	R	R	R
Aluminium chloride	R	R	R
Aluminium sulphate	R	R	R
Ammonia, anhydrous	R	R	R
Ammonia, aqueous	R	R	R
Ammonium chloride	R	R	R
Amyl acetate	R	R	R
Aniline	R	R	R
Antimony trichloride	ND	ND	ND
Aqua regia	R	R	R
Aromatic solvents	R	R	R
Ascorbic acid	R	R	R
Beer	R	R	R
Benzaldehyde	R	R	R
Benzene	R	R	R
Benzoic acid	R	R	R
Benzoyl peroxide	R	R	R
Boric acid	R	R	R
Brines, saturated	R	R	R
Bromide (K) solution	R	R	R
Bromine	R	R	R
Bromine liquid, tech.	R	R	R
Bromine water, saturated aqueous	R	R	R
Butyl acetate	R	R	R

Process media	Resistance		
	20°C	60°C	100°C
Calcium chloride	R	R	R
Carbon disulphide	R	R	R
Carbonic acid	R	R	R
Carbon tetrachloride	R	R	R
Caustic soda & potash	R	R	R
Cellulose paint	R	R	R
Chlorates of Na, K, Ba	R	R	R
Chlorine, dry	R	R	R
Chlorine, wet	R	R	R
Chlorides of Na, K, Ba	R	R	R
Chloroacetic acid	R	R	R
Chlorobenzene	R	R	R
Chloroform	R	R	R
Chlorosulphonic acid	R	R	R
Chromic acid (80%)	R	R	R
Citric acid	R	R	R
Copper salts (most)	R	R	R
Cresylic acids (50%)	R	R	R
Cyclohexane	R	R	R
Detergents, synthetic	R	R	R
Emulsifiers, concentrated	R	R	R
Ether	R	R	R
Fatty acids (>C6)	R	R	R
Ferric chloride	R	R	R
Ferrous sulphate	R	R	R
Fluorinated refrigerants	R	R	R
Fluorine, dry	R	R	NR
Fluorine, wet	ND	ND	ND
Fluorosilic acid	ND	ND	ND
Formaldehyde (40%)	R	R	R
Formic acid	R	R	R
Fruit juices	R	R	R
Gelatine	R	R	R
Glycerine	R	R	R
Glycols	R	R	R
Glycol, ethylene	R	R	R
Glycolic acid	R	R	R
Hexamethylene diamine	R	R	R

Process media	Resistance		
	20°C	60°C	100°C
Hexamine	R	R	R
Hydrazine	R	R	R
Hydrobromic acid (50%)	R	R	R
Hydrochloric acid (10%)	R	R	R
Hydrochloric acid (conc.)	R	R	R
Hydrocyanic acid	R	R	R
Hydrofluoric acid (40%)	R	R	R
Hydrofluoric acid (75%)	R	R	R
Hydrogen peroxide (30%)	R	R	R
Hydrogen peroxide (30 - 90%)	R	R	R
Hydrogen sulphide	R	R	R
Hypochlorites	R	R	R
Hypochlorites (Na 12-14%)	R	R	R
Iso-butyl-acetate	R	R	R
Lactic acid (90%)	R	R	R
Lead acetate	R	R	R
Lead perchlorate	ND	ND	ND
Lime (CaO)	R	R	R
Maleic acid	R	R	R
Manganate, potassium (K)	R	R	R
Meat juices	R	R	R
Mercuric chloride	R	R	R
Mercury	R	R	R
Methanol	R	R	R
Methylene chloride	R	R	R
Milk products	R	R	R
Moist air	R	R	R
Molasses	R	R	R
Monoethanolamine	R	R	NR
Naptha	R	R	R
Napthalene	R	R	R
Nickel salts	R	R	R
Nitrates of Na, K and NH3	R	R	R
Nitric acid (<25%)	R	R	R
Nitric acid (50%)	R	R	R
Nitric acid (90%)	R	R	R
Nitric acid (fuming)	R	R	R
Nitrite (Na)	R	R	R

Process media	Resistance		
	20°C	60°C	100°C
Nitrobenzene	R	R	R
Oils, diesel	R	R	R
Oils, essential	R	R	R
Oils, lubricating + aromatic additives	R	R	R
Oils, mineral	R	R	R
Oils, vegetable and animal	R	R	R
Oxalic acid	R	R	R
Ozone	R	R	R
Paraffin wax	R	R	R
Perchloric acid	R	R	R
Petroleum spirits	R	R	ND
Phenol	R	R	R
Phosphoric acid (20%)	R	R	R
Phosphoric acid (50%)	R	R	R
Phosphoric acid (95%)	R	R	R
Phosphorous chlorides	R	R	R
Phosphorous pentoxide	ND	ND	ND
Phthalic acid	R	R	R
Picric acid	R	R	R
Pyridine	R	R	R
Salicyl aldehyde	R	R	R
Sea water	R	R	R
Silicic acid	R	R	R
Silicone fluids	R	R	R
Silver nitrate	R	R	R
Sodium carbonate	R	R	R
Sodium peroxide	R	R	R
Sodium silicate	R	R	R
Sodium sulphide	R	R	R
Stannic chloride	R	R	R
Starch	R	R	R
Sugar, syrups & jams	R	R	R
Sulphamic acid	ND	ND	ND
Sulphates (Na, K, Mg, Ca)	R	R	R
Sulphites	R	R	R
Sulphonic acids	R	R	R
Sulphur	R	R	R
Sulphur dioxide, dry	R	R	R

R = Resistant / NR = Not resistant / ND = No test performed yet

Process media	Resistance		
	20°C	60°C	100°C
Sulphur dioxide, wet	R	R	R
Sulphur dioxide (96%)	R	R	R
Sulphur trioxide	R	R	R
Sulphuric acid (<50%)	R	R	R
Sulphuric acid (70%)	R	R	R
Sulphuric acid (95%)	R	R	R
Sulphuric acid, fuming	R	R	R
Sulphur chlorides	R	R	R
Tallow	R	R	R
Tannic acid (10%)	R	R	R
Tartaric acid	R	R	R
Trichlorethylene	R	R	R
Urea (30%)	R	R	R
Vinegar	R	R	R
Water, distilled.	R	R	R
Water, soft	R	R	R
Water, hard	R	R	R
Wetting agents (<5%)	R	R	R
Yeast	R	R	R
Zinc chloride	R	R	R

R = Resistant / NR = Not resistant / ND = No test performed yet

DELIVERY FORMS AND DIMENSIONS:

We deliver FEP protective screens suitable for our sight glass fittings. Special shapes and dimensions on request. If a FEP protective screen is required for your application, we will always inform you in our offer.

INFO:

When assembling FEP protective screens, depending on their thickness, small air bubbles may occur between the sight glass plate and the FEP protective screen. These will usually disappear under process conditions due to the working pressure.