

FEP Chemical Resistance

Chemical Resistance Overview

FEP exhibits excellent chemical resistance against most acids, alkalis, and organic solvents. Based on long-term immersion testing (50 days at 95°C), FEP showed very low chemical absorption and minimal weight change in most aggressive media.

Practical Chemical Resistance Classification		
Chemical	Resistance Rating	Remarks
Sulfuric Acid (98%)	Excellent	No significant weight change
Hydrochloric Acid (36%)	Excellent	Highly stable
Nitric Acid (60%)	Excellent	Very low absorption
Caustic Soda (50%)	Excellent	Resistant to strong alkali
Aqueous Ammonia (28%)	Fair-Good	Slight absorption possible
Toluene	Fair-Good	Minor swelling possible
Diethylamine	Fair-Good	Moderate absorption
Acetone	Fair-Good	Slight effect after long immersion
Chloroform	Applicable with caution	Noticeable absorption
Chlorinated Solvents	Limited resistance	Slight influence observed
Weight Change Performance of FEP		
Chemical	Weight Change (%)	
Hydrochloric Acid (35%)	0	
Sulfuric Acid (98%)	0	
Nitric Acid (60%)	-0.1	
Hydrofluoric Acid (50%)	0	
Chromic Acid (50%)	0	
Acetic Acid (50%)	0	
Caustic Soda (50%)	0	
Aqueous Ammonia (28%)	0	
Sodium Chloride (30%)	0	
Ethyl Alcohol	0	
Acetone	0.2	
Carbon Tetrachloride	2.2	
Chloroform	1.1	
Trichloroethylene	1.1	
Toluene	0.3	
Xylene	0.3	
Benzene	0.4	
n-Hexane	0.5	
Methyl Ethyl Ketone	0.3	
Aniline	0	
Ethyl Acetate	0.3	
Ether	0.3	
Dioxane	0.3	
Diethylamine	0.6	
Formaldehyde	0	
Phenol	0	
Key Features of FEP Chemical Resistance		
Excellent resistance to:		
<ul style="list-style-type: none"> Strong acids Strong alkalis Oxidizing chemicals Most aqueous solutions 		
Very low absorption characteristics		
Better dimensional stability than many fluoropolymers in corrosive environments		
Slight swelling may occur in:		
<ul style="list-style-type: none"> Chlorinated solvents Aromatic hydrocarbons Amines under prolonged high-temperature exposure 		

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