Additional Information

Material compatibility of the mp6-hyb

In the mp6 the only material in contact with the media is polyphenylsulfone (PPSU). The following table shows the chemical resistance for different media under the stated conditions. The given values are guiding values from the material manufacturer Solvay Advanced Polymers.

Chemical resistance of polyphenylsulfone by immersion*

Reagent	Concentration (%)	Weight change (%)	Comments	Rating system**
Organic Chemicals				
1,1,1-Trichloroethane	100	0,0	No change	G
Acetic acid - glacial	100	0,0	Slight attack	G
Acetic anhydride	100	+1,0	Crazed	P
Acetone	100	+9,0	Surface softened	P
Benzene	100	+0,7	Cloudy	F
Butanol	100	0,0	No change	E
Butyl acetate	100	0,0	No change	E
Carbitol solvent	100	0,0	No change	E
Carbon tetrachloride	100	0,0	No change	E
Citric acid	100	+0,5	No change	G
Cyclohexane	100	0,0	No change	E
Ethanol	100	+0,3	Dark spots	F
Ethyl acetate	100	+3,7	Edges whitened	P
Ethylene glycol	100	–0,4	No change	G
Formaldehyde	40	+0,4	No change	G
Formic acid	10	+0,6	No change	G
Glycerol	100	0,0	No change	E
Methanol	100	+0,9	Cloudy	F
Toluene	100	+0,8	Whitened	F
Inorganic Chemicals				
Hydrochloric acid	20	+0,2	No change	E
Hydrochloric acid	37	+0,2	Bleached	F
Nitric acid	20	+0,5	No change	G
Nitric acid	71	+26,9	Opaque cracked	P

Oleic acid	100	0,0	No change	E
Potassium hydroxide	10	+0,5	No change	G
Sodium hydroxide	10	+0,5	No change	G
Sulfuric acid	50	+0,1	No change	G
Sulfuric acid	97	-11,3	Etched	P
Functional Fluids				
Brake fluid	100	-0,2	Cloudy	F
Gasoline	100	+0,1	Cloudy	F
Hydraulic oil LO-1	100	0,0	No change	E
Jet fuel JP-4	100	0,0	Cloudy	F
Kerosene	100	0,0	No change	E
Motor oil 10W-40	100	0,0	Cloudy	G
Skydrol® 500B	100	-0,3	Crazing	P

* Test specimens of polyphenylsulfone were immersed in a variety of common reagents for seven days at room temperature. The effects were monitored by measuring the change in weight and noting any change in appearance.

** Rating system

E Excellent: Little to no effect
G Good: No serious loss of properties
F Fair: Some negative effects, some useful properties retained
P Poor: Sever attack or rupture

Next to aqueous solution this plastic exhibits a good chemical resistance against diluted acids and many organic solvents. Furthermore it is resistant against diluted alkali solutions. Most organic chemicals, with exception of ketones, have no influence to polyphenylsulfone in the tested time slot. From the tested inorganic reagents concentrated acids have a damaging effect to polyphenylsulfone.

As this data was determined under restricted test conditions, we recommend verifying the compatibility of the pump directly with the pumped media in the customer application. If your media is not compatible with polyphenylsulfone or if you need a different material for the mp6-hyb, it is possible to change the material on a customer basis to suit your requirements.

Please note that Bartels Mikrotechnik can't assume any warranty and liability if a pump gets damaged through the pumping media.

Contact Data:
Bartels Mikrotechnik GmbH

Konrad-Adenauer-Allee 11

44263 Dortmund Germany

www.bartels-mikrotechnik.de

info@bartels-mikrotechnik.de

Tel: +49-231-47730-500

Fax: +49-231-47730-501

Visit our Website

www.bartels-mikrotechnik.de

for further information on applications.

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