



## Compatibility of monoliths and CIM® monolithic column materials with different aqueous solutions and organic solvents

### 1. Compatibility of monoliths with different aqueous solutions and organic solvents:

Compatibility was assessed based on chemical properties of different active groups on monolithic matrix. Fields colored in orange were also confirmed with qualitative and/or quantitative measurements.

Conditions: T < 25 °C

Chemistry	Aqueous NaOH (less than 1M)	Aqueous HCl (more than 0.1 M)	Water/Aqueous Buffers (pH 4-9)	Aqueous NaN <sub>3</sub>	20% EtOH	96% EtOH	Other organic solvent, including organic acids, alcohols, esters, ethers, amides, alkanes, aromatic compounds and halogenated solvents	Oxidizing agents (hydrogen peroxide, different chlorates and iodates)	Reducing agents	Urea
Epoxy	+	-	+	o	+	+	o	-	o	+
CDI	-	-	-	-	-	+	o	-	o	o
OH	+	+	+	+	+	+	o	-	o	+
EDA	+	o	+	+	+	+	o	-	o	+
DEAE	+	o	+	+	+	+	o	-	o	+
QA	+	o	+	+	+	+	o	-	o	+
SO <sub>3</sub>	+	o	+	+	+	+	o	-	o	+
C4 HLD	+	+	+	+	+	+	o	o	o	+
C4 A	+	+	+	+	+	+	o	-	o	+
Protein A	-	-	+	+	+	o	o	-	o	o

Legend	
+	Compatible
o	Possible side reactions
-	Not compatible

#### Note:

This is only a guideline, explicit instructions regarding chemical compatibility of a particular monolith chemistry with different solutions are listed in relevant Product Specific Information Sheets (PSIS).

The guideline does not cover the possibilities of mechanical tensions in the monolith structure due to fast changes in the surrounding solutions, which could result in cracking of the monolith (for example washing an anion exchanger with the solution of acid after washing it with alkaline solution).

The guideline does not cover the possibilities of clogging the monolith due to successive application of incompatible solutions (for example washing the monolith with organic solvents, followed by a direct washing with salt containing aqueous buffer).

The guideline does not cover the possibilities of changing the monolith properties due to the side reactions of solutions with the parts of the housings.

To our best knowledge monoliths are compatible with listed aqueous solutions and organic solvents at least for 1h at room temperature.

## 2. Compatibility of CIM® monolithic column materials with different aqueous solutions and organic solvents:

Compatibility was assessed based on chemical properties of different materials.

Conditions: T < 25°C

Material	NaOH (less than 1M)	HCl (less than 0.5 M)	Water/ Aqueous Buffers (pH 4-9)	20% EtOH	96% EtOH	Other alcohols, organic acids and organic esters (i.e. butanol, 2-propanol, methanol, ethyl acetate, acetic acid)	Organic ethers (i.e. diethyl ether, dioxane, THF)	Hydro-carbons (alkanes, benzene, toluene, xylene)	Halogenated solvents (i.e. dichloromethane)	Oxidizing agents (hydrogen peroxide, different chlorates and iodates)	Reducing agents	Urea
PE-HD	+	+	+	+	+	o	o	-	-	o	+	+
POM	o	-	o	+	o	o	o	+	+	-	o	+
PEEK	+	+	+	+	+	+	+	+	+	-	o	+
PP	+	+	+	+	+	o	-	o	-	o	o	+
PARYLENE-C	+	+	+	+	+	+	+	+	+	+	+	+
AISI316	+	+	+	+	+	+	+	+	o	-	-	+

Material Legend	
PE-HD	High-density Polyethylene
POM	Polyacetal or Polyoxymethylene
PEEK	Polyetheretherketone
PP	Polypropylene
AISI316	Stainless steel

Compatibility Legend	
+	Excellent - Good
o	Good - Not Good (compatibility needs to be experimentally determined)
-	Not good

### Note:

To our best knowledge materials are compatible with listed aqueous solutions and organic solvents at least for 1h at room temperature.

For further details please contact BIA Separations's technical support at [tech-support@monoliths.com](mailto:tech-support@monoliths.com) or call us +386 5 9699 500.



For any additional information please contact us:

Tel.: +386 5 9699 500

[sales@biaseparations.com](mailto:sales@biaseparations.com)

[www.biaseparations.com](http://www.biaseparations.com)

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