



## Chemical Compatibility with the NGC Chromatography System



The materials used in the NGC Chromatography System flow path have chemical compatibilities suitable for most common aqueous liquid chromatography applications. These wetted parts are also compatible with select applications that require the use of organic liquid chromatography, such as reverse phase. In addition, all wetted materials are suitable for biological purification because they have low protein binding properties, and because there is no contact with iron, including stainless steel.

### Wetted Materials

All listed materials may come into contact with sample and solutions in the NGC System flow path:

- **System and sample pumps:** polyetheretherketone (PEEK), fluorinated ethylene propylene (FEP), ultra-high molecular weight polyethylene (UHMWPE)
- **Pump heads:** sapphire, ruby, ceramic
- **Mixer module:** PEEK, titanium, polytetrafluoroethylene (PTFE), ethylene chlorotrifluoroethylene (ECTFE)
- **Buffer blending valve:** PEEK, PTFE, ethylene propylene diene monomer (EPDM)
- **Inlet, column switching, and outlet valves:** PEEK, glass-filled PEEK
- **UV flow cells:** quartz, PEEK
- **Conductivity flow cell:** PEEK, EPDM, Viton, titanium
- **Combined UV and conductivity flow cell:** quartz, PEEK, PTFE, perfluoroalkoxy alkane (PFA), titanium
- **pH module:** glass, EPDM
- **Backpressure regulator:** PEEK, Tefzel, polychlorotrifluoroethylene (PCTFE), gold
- **BioFrac Fraction Collector:** PEEK, PTFE, Tefzel, Delrin
- **NGC Fraction Collector:** PEEK, EPDM, FEP

## Chemicals Compatible with the NGC Chromatography System

Acids and Bases	Salts	Alcohols	Organics	Buffers	Detergents and Other
1 M acetic acid	6 M guanidine hydrochloride	100% ethanol	10% acetone	Bicine	0.1% bleach
Citric acid	Potassium chloride	40% ethylene glycol	100% acetonitrile*	Bis-Tris	$\beta$ -mercaptoethanol ( $\beta$ -ME)
Dimethyl arsenic acid (cacodylate)	Potassium dihydrogen orthophosphate	100% isopropanol	Diethanolamine	Bis-Tris hydrochloride	10% CHAPS
1% formic acid*	Potassium dihydrogen phosphate	100% methanol*	Ethanolamine	Bis-Tris propane	Dithiothreitol (DTT)
1 M hydrochloric acid*	Potassium hydrogen phosphate		N-methyl piperazine	Glycine hydrochloride	50%
1 M nitric acid*	Potassium hydrogen phthalate		N-methyl piperazine dihydrochloride	HEPES	ethylenediaminetetraacetic acid (EDTA)
0.1 M phosphoric acid	Potassium phosphate		Piperazine	MES monohydrate	40% glycerol
1 M sodium hydroxide*	Saline sodium citrate		Triethanolamine	MOPS	30% hydrogen peroxide
Succinic acid	Sodium acetate trihydrate		Triethanolamine hydrochloride	PIPES	2% lysozyme
1% trifluoroacetic acid*	Sodium bicarbonate			Sodium formate	N-dodecyl- $\beta$ -D-maltoside
	10% sodium bromide			Sodium HEPES	N-octyl- $\beta$ -D-glucopyranoside
	Sodium carbonate			Sodium MES	Sodium barbital
	4 M sodium chloride			Sodium TAPS	10% sodium dodecyl sulfate (SDS)
	Sodium citrate			Sodium tetraborate	8 M Tris (2-carboxyethyl) phosphine (TCEP)
	Sodium dihydrogen orthophosphate			TAPS	2% Triton X-100
	Sodium dihydrogen phosphate			TES	8 M urea
	Sodium hydrogen orthophosphate			Tricine	
	Sodium hydrogen phosphate			Tris base	
	Sodium hydrogen phthalate			Tris hydrochloride	
	Sodium phosphate dibasic heptahydrate			Trisodium citrate dihydrate	
	Sodium phosphate monobasic monohydrate				

\* This chemical can be used with the NGC Chromatography System, but prolonged exposure (more than 2 hours) should be avoided. Thoroughly wash the flow path with water after use of this chemical and store the system in 20% ethanol.

The following chemicals can be used with the NGC Chromatography System, but prolonged exposure (more than 2 hours) should be avoided. Thoroughly wash the flow path with water after use of these chemicals and store the system in 20% ethanol. These chemicals are annotated (\*) in the compatibility table.

- 100% acetonitrile
- Strong acids ( $\leq 1$  M)
- Most aldehydes
- Strong bases ( $\leq 1$  M)
- Select esters
- Strong oxidants

**Warning:** The following solvents will damage the NGC Chromatography System and are not recommended for use.

- Aliphatics
- Aromatic and halogenated hydrocarbons
- Most esters
- Heptaldehyde
- Ketones
- Strong oxidizing agents

For any chemical not listed in this document, check the chemical compatibility of the module materials list against published chemical compatibility tables.

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