



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
<ul style="list-style-type: none"> • 1 M acetic acid • Citric acid • Dimethyl arsenic acid (cacodylate) • 1% formic acid* • 1 M hydrochloric acid* • 1 M nitric acid* • 0.1 M phosphoric acid • 1 M sodium hydroxide* • Succinic acid • 1% trifluoroacetic acid* 	<ul style="list-style-type: none"> • 6 M guanidine hydrochloride • Potassium chloride • Potassium dihydrogen orthophosphate • Potassium dihydrogen phosphate • Potassium hydrogen phosphate • Potassium hydrogen phthalate • Potassium phosphate • Saline sodium citrate • Sodium acetate trihydrate • Sodium bicarbonate • 10% sodium bromide • Sodium carbonate • 4 M sodium chloride • Sodium citrate • Sodium dihydrogen orthophosphate • Sodium dihydrogen phosphate • Sodium hydrogen orthophosphate • Sodium hydrogen phosphate • Sodium hydrogen phthalate • Sodium phosphate dibasic heptahydrate • Sodium phosphate monobasic monohydrate 	<ul style="list-style-type: none"> • 100% ethanol • 40% ethylene glycol • 100% isopropanol • 100% methanol* 	<ul style="list-style-type: none"> • 10% acetone • 100% acetonitrile* • Diethanolamine • Ethanolamine • N-methyl piperazine • N-methyl piperazine dihydrochloride • Piperazine • Triethanolamine • Triethanolamine hydrochloride 	<ul style="list-style-type: none"> • Bicine • Bis-Tris • Bis-Tris hydrochloride • Bis-Tris propane • Glycine hydrochloride • HEPES • MES monohydrate • MOPS • PIPES • Sodium formate • Sodium HEPES • Sodium MES • Sodium TAPS • Sodium tetraborate • TAPS • TES • Tricine • Tris base • Tris hydrochloride • Trisodium citrate dihydrate 	<ul style="list-style-type: none"> • 0.1% bleach • β-mercaptoethanol (β-ME) • 10% CHAPS • Dithiothreitol (DTT) • 50% ethylenediaminetetraacetic acid (EDTA) • 40% glycerol • 30% hydrogen peroxide • 2% lysozyme • N-dodecyl-β-D-maltoside • N-octyl-β-D-glucopyranoside • Sodium barbitone • 10% sodium dodecyl sulfate (SDS) • 8 M Tris (2-carboxyethyl) phosphine (TCEP) • 2% Triton X-100 • 8 M urea

* 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 (≤ 1 M)
- Most aldehydes
- Strong bases (≤ 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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