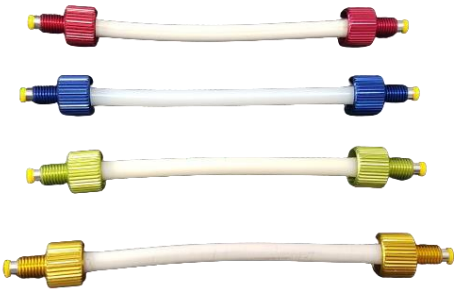
Vapourtec V-3 Pump Tube Compatibility Table



Rev. 4.0
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vapourtec
precision flow chemistry

Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Acetaldehyde		✓	✓		
Acetic anhydride		✓	Reduced life		≥ 10 litres for green
Acetone		✓	✓		
Acetone cyanohydrin		✓			
Acetonitrile		✓	Reduced life		≥ 10 litres for green
Acetyl chloride	✓	✓			
Acetylene gas	✓	✓			
Acrylonitrile		✓	Reduced life		≥ 10 litres for green
Acryloyl chloride (1.0 M in THF)		✓	Reduced life		≥ 10 litres for green
Adipic acid	✓	✓			
Alcohol	✓	✓	✓		
Alkyl benzene	✓	✓			
Alkyl-arylsulphonic acid		✓			
Alumina trihydrate	Do not use	Do not use	Do not use	Do not use	
Aluminum acetate	Do not use	Do not use	Do not use	Do not use	
Aluminum chloride	✓		✓		
Aluminum nitrate	✓				
Aluminum potassium sulfate	✓				
Aluminum sulfate	✓		✓		
Amines mixed		Reduced life			≥ 15 litres for blue
Ammonia Gas cold		✓	✓		
Ammonium acetate		✓			
Ammonium bicarbonate		✓	✓		
Ammonium bromide		✓	✓		
Ammonium carbonate	✓	✓	✓		
Ammonium chloride	✓	✓	✓		
Ammonium hydroxide		✓	✓		
Ammonium nitrate	✓	✓	✓		
Ammonium phosphate	✓	✓	✓		
Ammonium stearate		✓			
Ammonium sulfate	✓	✓	✓		
Ammonium thiocyanate	✓	✓	✓		
Amyl acetate		Reduced life			≥ 15 litres for blue
Amyl alcohol	✓	✓	✓		
Amyl nitrate		✓			
Aniline	✓	✓	✓		
Aniline hydrochloride	✓	✓			
Anti-freeze glycol based		✓	✓		
Aqua regia	Do not use	Do not use	Do not use	✓	

* Maximum 5 bar pressure for **GREEN** tube

Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Argon gas	✓	✓			
Barium chloride	✓	✓	✓		
Barium hydroxide	✓	✓	✓		
Barium nitrate	✓	✓			
Benzaldehyde		✓	✓		
Benzene	✓	✓			
Benzenesulfonic acid	✓	✓			
Benzochloride	✓	✓			
Benzoic acid	✓	✓			
Benzotrifluoride	Do not use	Do not use		Do not use	
Benzyl alcohol	✓	✓			
Benzyl ether		✓	✓		
Bismuth (III) trifluoromethanesulfonate solution (0.1 M in ACN)		✓			
Bleach solutions	✓	✓	✓		
Boric acid	✓	✓	✓		
Boron trichloride	✓				
Boron trifluoride diethyl etherate solution (0.5 M in dry DCM)	✓				
Bromine	✓				
Bromo trifloride	Do not use	Do not use		Do not use	
Bromobenzene	✓		Reduced life		≥ 25 litres for green
Bromoform			Reduced life		≥ 25 litres for green
n-bromosuccinimide solutions (in ACN) [NBS]		✓			
Butadiene	✓				
Butane	✓				
Butyl acetate		Reduced life			≥ 15 litres for blue
Butyl alcohol	✓	✓	✓		
Butyl ether		Reduced life			≥ 15 litres for blue
Butylamine		Reduced life			≥ 15 litres for blue
Butylene	✓				
Butylene glycol		✓			
n-Butyllithium solution (1.6 M in hexanes) [BuLi]	✓		Reduced life		CAUTION: 2 litres only for green
n-Butyllithium solution (2.0 M in pentane) [BuLi]	✓				
n-Butyllithium solution (1.5 M in toluene) [BuLi]	✓		Reduced life		CAUTION: 2 litres only for green
Butyric acid		✓	✓		

* Maximum 5 bar pressure for **GREEN** tube

Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Butyronitrile		✓			
Calcium acetate		✓	✓		
Calcium carbonate	✓	✓	✓		
Calcium cyanide	✓	✓			
Calcium hydrogen sulfite		✓			
Calcium hydrosulfide		✓			
Calcium hydroxide aqueous	✓	✓	✓		
Calcium hypochlorite	✓	✓	✓		
Calcium magnesium chloride		✓			
Calcium nitrate	✓	✓	✓		
Calcium phosphate	✓	✓			
Calcium sulfate aquious	✓	✓	✓		
Carbamate	✓	✓			
Carbon dioxide	✓	✓	✓		
Carbon disulfide	✓	✓			
Carbon monoxide	✓	✓	✓		
Carbon tetrachloride	✓				
Carbonic acid	✓	✓	✓		
Chloric acid		✓			
Chlorinated solvents	✓				
Chlorine	✓				
Chlorine dioxide	✓				
Chloroacetic acid		Reduced life			≥ 15 litres for blue
Chloroacetone		Reduced life			≥ 15 litres for blue
Chlorobenzene	✓	✓	Reduced life		≥ 10 litres for green
Chloroform	✓	✓	Reduced life		≥ 10 litres for green
Chlorosulfonic acid		✓			
Chromic acid	✓		✓		
Chromic oxide	✓	✓			
Chromium potassium sulfate		✓	✓		
Citric acid	✓	✓	✓		
Cod-liver oil	✓	✓			
Copper acetate	Do not use	Do not use	Do not use	Do not use	
Copper ammonium acetate	Do not use	Do not use	Do not use	Do not use	
Copper chloride	✓		✓		
Copper cyanide	✓		✓		
Copper nitrate	✓		✓		
Copper sulfate	✓		✓		
Corn oil	✓	✓	✓		
Cottonseed oil	✓	✓			

* Maximum 5 bar pressure for **GREEN** tube

Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Crude oil	✓	✓			
Cumene	✓	✓			
Cyclohexane	✓		Reduced life		≥ 5 litres for green
Cyclopentyl methyl ether [CPME]	✓	✓			
Decahydronaphthalene		✓			
Decane	✓				
Diacetone alcohol		✓	✓		
Diallyl phthalate	✓	✓			
Dibromoethyl benzene	✓				
Dibutyl Cellosolve adipate		✓			
Dibutyl phthalate		✓			
Dibutylamine		Reduced life			≥ 15 litres for blue
Dichlorobenzene	✓				
Dichloromethane [DCM]	✓	✓			
Dichlorosiloxane [DCS]		✓			
Diethanolamine		✓			
Diethyl carbonate		✓			
Diethyl ether		Reduced life	Reduced life		≥ 15 litres for blue ≥ 10 litres for green
Diethyl phthalate	✓	✓			
Diethylamine		Reduced life			≥ 15 litres for blue
Diethylene glycol	✓	✓	✓		
Diethylenetriamine		✓			
Diisobutyl ketone		✓			
Diisobutylaluminium hydride (1.0 M in DCM) [DIBAL]	✓		Do not use		
Diisobutylaluminium hydride (1.0 M in Toluene) [DIBAL]	✓		Reduced life		CAUTION: 2 litres only for green
Diisobutylaluminium hydride (1.0 M in THF) [DIBAL]	✓		Reduced life		CAUTION: 2 litres only for green
Dimethoxyethane [DME]		✓	Reduced life		≥ 10 litres for green
Dimethylacetamide		✓			
Dimethyl phthalate	✓	✓			
Dimethyl sulfoxide [DMSO]		✓			
Dimethyl terephthalate		✓			
Dimethylamine		✓			
Dimethylformamide [DMF]		✓	✓		
Dinitrochlorobenzene		✓			
Dioctyl phthalate	✓	✓			
1,4-Dioxane		✓			
Diphenyl	✓	✓			

* Maximum 5 bar pressure for **GREEN** tube

Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Epichlorohydrin		✓			
Ethane	✓	✓			
Ethanethiol	✓	✓			
Ethanolamine		✓			
Ethyl acetate		✓	Reduced life		≥ 10 litres for green
Ethyl alcohol [Ethanol]	✓	✓	✓		
Ethyl formate	✓	✓	Reduced life		≥ 10 litres for green
Ethylamine		Reduced life			≥ 15 litres for blue
Ethylbenzene	✓	✓			
Ethylene	✓	✓			
Ethylene dibromide	✓		Reduced life		≥ 25 litres for green
Ethylene dichloride [DCE]	✓	✓	Reduced life		≥ 5 litres for green
Ethylene glycol	✓	✓	✓		
Ethylene oxide		Reduced life	✓		≥ 15 litres for blue
Fatty acids	✓	✓			
Ferric sulfate aqueous	✓	✓	✓		
Ferrous sulfate aqueous	✓	✓	✓		
Fluorine gas	Reduced Life				≥ 15 litres for red
Fluosilicic acid	✓		✓		
Formaldehyde		✓	✓		
Formic acid		✓	✓		
Freon 11	Reduced Life				≥ 15 litres for red
Freon 113	Do not use	Do not use	Do not use	Do not use	
Freon 114	Reduced Life				≥ 15 litres for red
Freon 12	Do not use	Do not use	Do not use	Do not use	
Freon 22	Do not use	Do not use	Do not use	Do not use	
Freon 502	Do not use	Do not use	Do not use	Do not use	
Fumaric acid	✓	✓			
Furfural		Reduced life	✓		≥ 15 litres for blue
gamma-Valerolactone [GVL]	✓	✓			
Gasoline	✓				
Glacial acetic acid		✓	✓		
Glucose	✓	✓	✓		
Glycerol	✓	✓	✓		
Glycine		✓			
Helium	✓	✓			

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Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Heptane	✓		Reduced life		≥ 10 litres for green
Hexafluoroisopropanol [HFIP]		✓			
n-Hexane	✓	✓	Reduced life		≥ 15 litres for green
Hexyl alcohol	✓	✓			
Hydrazine		✓			
Hydrochloric acid solution (≥ 10 % v/v)	✓		✓		
Hydrochloric acid Concentrated	✓		✓		
Hydrocyanic acid	✓	✓	✓		
Hydrofluoric acid	Do not use	Do not use	Do not use	Do not use	
Hydrogen chloride gas dry		✓			
Hydrogen fluoride anhydrous	Do not use	Do not use	Do not use	Do not use	
Hydrogen gas	✓	✓	✓		
Hydrogen peroxide	✓	✓			
Hydrogen sulfide		✓	✓		
Hypochlorous acid	✓	✓	✓		
Iodoform			Reduced life		≥ 10 litres for green
Isobutane	✓				
Isopropyl acetate		Reduced life	Reduced life		≥ 15 litres for blue ≥ 10 litres for green
Isopropyl alcohol [IPA]	✓	✓	✓		
Isopropyl ether		Reduced life			≥ 15 litres for blue
Isopropylmagnesium Bromide (1.0 M in THF) [iPrMgBr]		✓			
Isopropylmagnesium chloride.LiCl (1.2 M in THF) [Turbogrignard]			Reduced life		CAUTION: 2 litres only for green
Kerosene	✓	✓			
Lactic acid	✓	✓	✓		
Ligroin	✓		Reduced life		≥ 10 litres for green
Linoleic acid	✓	✓			
Linseed oil	✓	✓	✓		
Liquefied petroleum gas	✓				
Lithium 4,4′-Di-tert-butylbiphenylide (in THF) [LiDBB]	Do not use	Do not use		Do not use	
Lithium bis(trimethylsilyl)amide solution (1.0 M in THF) [LiHMDS]			Reduced life		CAUTION: 2 litres only for green

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Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Lithium diisopropyl amide (1.0 M in THF/Hexanes) [LDA]	Do not use	Do not use	Reduced life	Do not use	CAUTION: 2 litres only for green
Lithium tetramethylpiperidide in THF [LTMP]	Do not use	Do not use		Do not use	
Magnesium chloride	✓	✓	✓		
Magnesium hydroxide	✓	✓	✓		
Magnesium sulfate	✓	✓	✓		
Maleic acid	✓	✓			
Maleic anhydride		✓			
Malic acid	✓	✓	✓		
Manganous chloride	✓	✓			
Melamine resin		✓			
Mercuric chloride	✓	✓	✓		
Mesityl oxide		✓			
Methane	✓				
Menthanesulfonic acid solution (85 % v/v in DCE) [MsOH]		✓			
Methyl acetate		Reduced life	Reduced life		≥ 15 litres for blue ≥ 10 litres for green
Methyl alcohol [Methanol]	✓	✓	✓		
Methyl benzoate	✓	✓			
Methyl bromide	✓				
Methyl chloride	✓	✓			
Methyl ethyl ketone [MEK]		✓			
Methyl formate		✓	Reduced life		≥ 10 litres for green
Methyl isobutyl ketone		Reduced life			≥ 15 litres for blue
Methyl methacrylate		✓			
Methyl propionate		✓			
Methyl tertiary butyl ether		Reduced life			≥ 15 litres for blue
Methylene bromide	Reduced Life	Reduced life			≥ 15 litres for red ≥ 15 litres for blue
Methyllithium solution (1.6 M in diethyl ether) [MeLi]	Do not use	Do not use	Reduced life	Do not use	CAUTION: 2 litres only for green
Methyllithium solution (3.1 M in DME) [MeLi]	Do not use	Do not use		Do not use	
2-Methyltetrahydrofuran		✓			
Naphthalene	✓	✓			
Natural gas sour	✓		✓		
Nickel chloride	✓	✓	✓		
Nickel sulfate	✓	✓	✓		
Nitric acid solution (≥ 10%)	✓		✓		

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Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Nitric acid concentrated (69 %)	✓		Reduced life		≥ 30 litres for green
Nitric acid (Fuming)	✓		Do not use		
Nitrobenzene	✓	✓			
Nitrogen gas	✓	✓	✓		
Nitromethane		✓			
n-Methyl-2-pyrrolidone [NMP]		✓			
Octadecene*	✓				
Oleic acid	✓	✓	Reduced life		≥ 10 litres for green
Oleylamine		✓			
Oxalic acid	✓	✓	✓		
Oxalyl chloride solution (1.0 M in toluene)	✓	Do not use			
Oxygen gas	✓	✓	✓		
Ozone gas	✓	✓	✓		
Palm oil		✓			
Palmitic acid	✓	✓	✓		
Pentane	✓				
Peptide coupling reagents		✓			
Perchloric acid	✓	✓	✓		
Perchloroethylene	✓				
Phenol 10 %	✓	✓			
Phenylacetic acid	✓	✓			
Phosphoric acid concentrated	✓	✓	✓		
Phosphoric acid diluted	✓	✓	✓		
Phthalic anhydride		✓			
Picoline alpha		✓			
Picric acid (aqueous solution)		✓	✓		
Polyethylene glycol	✓	✓	✓		
Polypropylene slurry	✓	✓			
Polyvinyl acetate emulsion		✓			
Polyvinyl alcohol		✓			
Potassium bis(trimethylsilyl)amide solution (1.0 M in THF) [KHMDS]	Do not use				
Potassium bis(trimethylsilyl)amide solution (0.5 M in toluene) [KHMDS]	✓	Do not use	Reduced life		CAUTION: 2 litres only for green
Potassium bromide	✓	✓	✓		
Potassium carbonate	✓	✓	✓		
Potassium chlorate	✓	✓	✓		
Potassium chloride	✓	✓	✓		

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Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Potassium cyanide	✓	✓	✓		
Potassium dichromate	✓	✓	✓		
Potassium hydroxide diluted		✓	✓		
Potassium hydroxide concentrated		Reduced life	✓		≥ 15 litres for blue
Potassium nitrate	✓	✓	✓		
Potassium permanganate	✓	✓	✓		
Potassium phosphate		✓			
Potassium sulfate	✓	✓	✓		
Potassium tert-butoxide solution (0.1 M in THF)		✓			
Propane	✓				
Propionic acid cold		✓			
Propyl acetate		Reduced life	Reduced life		≥ 15 litres for blue ≥ 10 litres for green
n-Propyl alcohol	✓	✓	✓		
Propylene	✓				
Propylene oxide		Reduced life			≥ 15 litres for blue
Pyridine		✓			
Pyrrole		✓			
Silver nitrate	✓	✓	✓		
Sodium acetate solution (2.0 M)	✓	✓	✓		
Sodium bicarbonate	✓	✓	✓		
Sodium bisulfate	✓	✓	✓		
Sodium bis(trimethylsilyl)amide solution (1.0 M in THF) [NaHMDS]	Do not use				
Sodium bis(trimethylsilyl)amide solution (0.5 M in toluene) [NaHMDS]	✓				
Sodium cyanide aqueous	✓	✓	✓		
Sodium dichromate	✓	✓	✓		
Sodium dithionite		✓			
Sodium hydroxide ≥ 10 %	✓	✓	✓		
Sodium hydroxide ≥ 50 %	✓		✓		
Sodium hypochlorite ≥ 10 %	✓	✓	✓		
Sodium hypochlorite ≥ 20 %	✓		✓		
Sodium nitrate	✓	✓	✓		
Sodium peroxide	✓	✓	✓		
Sodium phosphate	✓	✓	✓		
Sodium silicate	✓	✓	✓		
Sodium sulfate	✓	✓	✓		

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Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Sodium sulfide	✓	✓	✓		
Sodium sulfite	✓	✓	✓		
Sodium thiocyanate	✓	✓			
Sodium thiosulfate	✓	✓	✓		
Stearic acid	✓	✓	✓		
Styrene		✓			
Sulfur chloride	✓	✓			
Sulfur Dioxide Dry	✓	✓	✓		
Sulfur dioxide Wet	✓	✓	✓		
Sulfur In water		✓			
Sulfur molten	✓	✓			
Sulfuric acid ≥10 % v/v	✓		✓		
Sulfuric acid Concentrated	✓		✓		
Sulfuryl chloride solution (3.0 M in DCM)		✓			
Sulfuryl chloride (neat)	Do not use	Do not use		Do not use	
Tallow	✓	✓			
Tartaric acid aqueous	✓	✓	✓		
Terephthalic acid	✓	✓			
Tetra-n-butylammonium fluoride solution (in THF)		✓			
Tetrachloroethane	✓				
Tetrahydrofuran [THF]		✓	Reduced life		≥ 5 litres for green
1,2,3,4-Tetrahydronaphthalene [Tetralin]		✓			
Thiols		✓			
Thionyl chloride	✓				
Titanium dioxide	✓	✓	✓		
Titanium tetrachloride	✓				
Toluene	✓	✓	✓		
Trichloroethane	✓				
Trichloroethylene	✓				
Tricresyl phosphate	✓	✓			
Triethanolamine		✓			
Triethylamine		Reduced life			≥ 15 litres for blue
Trific acid					
Trifluoroacetic acid [TFA]		Reduced life	✓		≥ 15 litres for blue
Triisobutylaluminium solution (1.0 M in hexanes)					
Trimethylsilyl chloride			✓		

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Chemical Name	Which tube to use				Note
	RED	BLUE	GREEN	GOLD	
Triphenylphosphine (in a concentration up to 200 mg/ml) [PPh3]		Reduced life			≥ 15 litres for blue
Triphosgene solution (in DCM)	✔				
Triphosgene solution (in toluene)	✔				
Urea		✔	✔		
Urea-formaldehyde resin		✔			
Vinyl acetate		Reduced life			≥ 15 litres for blue
Vinyl chloride	✔				
Vinylidine chloride	✔				
Water	✔	✔	✔		
Xylene	✔	✔			
Zinc chloride	✔	✔	✔		
Zinc nitrate	✔	✔			
Zinc sulfate		✔	✔		

Get in touch...

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