Vapourtec V-3 Pump Tube Compatibility Guide

REV. 5.0 | DATE: 9TH APRIL 2025

vapourtec
precision flow chemistry

Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	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	Test pending	Do not use	Do not use	
Aluminum acetate	Do not use	Do not use	Test pending	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

*Maximum 5 bar pressure for GREEN tube

Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
Amyl alcohol	✓	✓	✓	✓		
Amyl nitrate		✓	✓			
Aniline	✓	✓	✓	✓		
Aniline hydrochloride	✓	✓	✓			
Anti-freeze glycol based		✓	✓	✓		
Aqua regia	Do not use	Do not use	Do not use	Do not use	✓	
Argon gas	✓	✓	✓			
Arsenic acid	✓	✓	✓			
Barium chloride	✓	✓	✓	✓		
Barium hydroxide	✓	✓	✓	✓		
Barium nitrate	✓	✓	✓			
Benzaldehyde		✓	✓	✓		
Benzene	✓	✓	✓			
Benzenesulfonic acid	✓	✓	✓			
Benzochloride	✓	✓	✓			
Benzoic acid	✓	✓	✓			
Benzotrifluoride			Test pending			
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	Test pending		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

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Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
Butyl alcohol	✓	✓	✓	✓		
Butyl ether		Reduced life	✓			≥ 15 litres for blue
Butylamine			✓			≥ 15 litres for blue
Butylene	✓		✓			
Butylene glycol		✓	✓			
n-Butyllithium solution (1.6 M in hexanes) [BuLi]	✓		✓	Do not use		
n-Butyllithium solution (2.0 M in pentane) [BuLi]	✓		✓	Do not use		
n-Butyllithium solution (1.5 M in toluene) [BuLi]	✓		✓	Do not use		
Butyric acid		✓	✓	✓		
Butyronitrile		✓	✓			
Calcium acetate		✓	✓	✓		
Calcium carbonate	✓	✓	✓	✓		
Calcium chlorate	✓	✓	✓	✓		
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

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Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
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	Test pending	Do not use	Do not use	
Copper ammonium acetate	Do not use	Do not use	Test pending	Do not use	Do not use	
Copper chloride	✓		✓	✓		
Copper cyanide	✓		✓	✓		
Copper nitrate	✓		✓	✓		
Copper sulfate	✓		✓	✓		
Corn oil	✓	✓	✓	✓		
Cottonseed oil	✓	✓	✓			
Crude oil	✓	✓	✓			
Cumene	✓	✓	✓			
Cyanogen		✓	✓			
Cyclohexane	✓		✓			
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]	✓	✓	✓	Do not use		
Dichlorosiloxane [DCS]		✓	✓			

*Maximum 5 bar pressure for GREEN tube

Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
Diethanolamine		✓	✓			
Diethyl carbonate		✓	✓			
Diethyl ether		Reduced life	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]	✓		✓	Do not use		
Diisobutylaluminium hydride (1.0 M in THF) [DIBAL]			✓	Do not use		
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	✓	✓	✓			
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

*Maximum 5 bar pressure for GREEN tube

Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
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	Test pending	✓		≥ 15 litres for blue
Fatty acids	✓	✓	✓			
Ferric sulfate aqueous	✓	✓	✓	✓		
Ferrous sulfate aqueous	✓	✓	✓	✓		
Fluorine gas	Reduced life		Test pending			≥ 15 litres for red
Fluosilicic acid	✓		Test pending	✓		
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	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	Do not use	
Freon 22	Do not use	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	Do not use	
Fumaric acid	✓	✓	✓			
Furfural		Reduced life	✓	✓		≥ 15 litres for blue
gamma-Valerolactone [GVL]	✓	✓	✓			
Gasoline	✓					
Glacial acetic acid		✓	✓	✓		
Glucose	✓	✓	✓	✓		
Glycerol	✓	✓	✓	✓		
Glycine		✓	✓			
Helium	✓	✓	✓			
Heptane	✓		✓	Reduced life		≥ 10 litres for green
Hexafluoroisopropanol [HFIP]		✓	✓			
n-Hexane	✓	✓	✓	Reduced life		≥ 15 litres for green

*Maximum 5 bar pressure for GREEN tube

Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
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	Do not use	
Hydrogen chloride gas dry		✓	✓			
Hydrogen fluoride anhydrous	Do not use	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	Test pending			≥ 15 litres for blue
Isopropylmagnesium Bromide (1.0 M in THF) [iPrMgBr]		✓	✓			
Isopropylmagnesium chloride.LiCl (1.2 M in THF) [Turbogrignard]			Test pending	Do not use		
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	Test pending		Do not use	
Lithium bis(trimethylsilyl) amide solution (1.0 M in THF) [LiHMDS]			Test pending	Reduced life		CAUTION: 2 litres only for green
Lithium diisopropyl amide (1.0 M in THF/ Hexanes) [LDA]	Do not use	Do not use	✓	Do not use	Do not use	

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Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
Lithium tetramethylpiperidide in THF [LiTMP]	Do not use	Do not use	Test pending		Do not use	
Magnesium chloride	✓	✓	✓	✓		
Magnesium hydroxide	✓	✓	✓	✓		
Magnesium sulfate	✓	✓	✓	✓		
Maleic acid	✓	✓	✓			
Maleic anhydride		✓	✓			
Malic acid	✓	✓	✓	✓		
Manganous chloride	✓	✓	✓			
Melamine resin		✓	✓			
Mercuric chloride	✓	✓	✓	✓		
Mesityl oxide	Do not use	✓	✓			
Methane	✓		✓			
Menthanesulfonic acid solution (85 % v/v in DCE) [MsOH]		✓	✓			
Methyl acetate		Reduced life	Test pending	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	Test pending			≥ 15 litres for blue
Methyl methacrylate		✓	✓			
Methyl propionate		✓	✓			
Methyl tertiary butyl ether		Reduced life	Test pending			≥ 15 litres for blue
Methylene bromide	Reduced life	Reduced life	Test pending			≥ 15 litres for red ≥ 15 litres for blue
Methyllithium solution (1.6 M in diethyl ether) [MeLi]	Do not use	Do not use	Test pending	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	Test pending		Do not use	
2-Methyltetrahydrofuran		✓	✓			
Naphthalene	✓	✓	✓			

*Maximum 5 bar pressure for GREEN tube

Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
Natural gas sour	✓		✓	✓		
Nickel chloride	✓	✓	✓	✓		
Nickel sulfate	✓	✓	✓	✓		
Nitric acid solution (≥ 10%)	✓		✓	✓		
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	Test pending			
Oxygen gas	✓	✓	✓	✓		
Ozone gas	✓	✓	✓	✓		
Palm oil		✓	✓			
Palmitic acid	✓	✓	✓	✓		
Pentane	✓		✓			
Peptide coupling reagents		✓	✓			
Perchloric acid	✓	✓	✓	✓		
Perchloroethylene	✓		Test pending			
Phenol 10 %	✓	✓	✓			
Phenylacetic acid	✓	✓	✓			
Phosphoric acid concentrated	✓	✓	✓	✓		
Phosphoric acid diluted	✓	✓	✓	✓		
Phthalic anhydride		✓	✓			
Picoline alpha		✓	✓			
Picric acid (aqueous solution)		✓	✓	✓		
Polyethylene glycol	✓	✓	✓	✓		
Polypropylene slurry	✓	✓	✓			

*Maximum 5 bar pressure for GREEN tube

Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
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	✓	Do not use		
Potassium bromide	✓	✓	✓	✓		
Potassium carbonate	✓	✓	✓	✓		
Potassium chlorate	✓	✓	✓	✓		
Potassium chloride	✓	✓	✓	✓		
Potassium cyanide	✓	✓	✓	✓		
Potassium dichromate	✓	✓	✓	✓		
Potassium hydroxide diluted		✓	✓	✓		
Potassium hydroxide concentrated		Reduced life	Test pending	✓		≥ 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	Test pending	Reduced life		≥ 15 litres for blue ≥ 10 litres for green
n-Propyl alcohol	✓	✓	✓	✓		
Propylene	✓		✓			
Propylene oxide		Reduced life	Test pending			≥ 15 litres for blue
Pyridine		✓	✓			
Pyrrole		✓	✓			
Red-Al® (≥60 wt. % in toluene)				Reduced life		≥ 15 litres for green
Silver nitrate	✓	✓	✓	✓		
Sodium acetate solution (2.0 M)	✓	✓	✓	✓		
Sodium bicarbonate	✓	✓	✓	✓		

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Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
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 nitrate	✓	✓	✓	✓		
Sodium peroxide	✓	✓	✓	✓		
Sodium phosphate	✓	✓	✓	✓		
Sodium silicate	✓	✓	✓	✓		
Sodium sulfate	✓	✓	✓	✓		
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	Test pending		Do not use	
Tallow	✓	✓	✓			
Tartaric acid aqueous	✓	✓	✓	✓		
Terephthalic acid	✓	✓	✓			
Tetra-n-butylammonium fluoride solution (in THF)		✓	✓			

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Chemical Name	Which tube to use					Notes
	RED	BLUE	BLACK	GREEN*	GOLD	
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
Triflic acid			Test pending	Reduced life		≥ 20 litres for green
Trifluoroacetic acid [TFA]		Reduced life	✓	✓		≥ 15 litres for blue
Triisobutylaluminium solution (1.0 M in hexanes)			✓			
Trimethylsilyl chloride			✓	✓		
Triphenylphosphine (in a concentration up to 200 mg/ml) [PPh3]		Reduced life	Test pending			≥ 15 litres for blue
Triphosgene solution (in DCM)	✓					
Triphosgene solution (in toluene)	✓					
Urea		✓	✓	✓		
Urea-formaldehyde resin		✓	✓			
Vinyl acetate		Reduced life	Test pending			≥ 15 litres for blue
Vinyl chloride	✓		✓			
Vinylidine chloride	✓		✓			
Water	✓	✓	✓	✓		
Xylene	✓	✓	✓			
Zinc chloride	✓	✓	✓	✓		
Zinc nitrate	✓	✓	✓			
Zinc sulfate		✓	✓	✓		

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