spex® certiprep

GRADES OF SOLVENTS

Grade	Application/Use	Analytical
ACS	General Procedures	Meets or exceeds ACS Specifications
Anhydrous	Water Sensitive Reactions and Synthesis	Low Water Levels (10-30 ppm)
Biotechnical	Biotechnical Applications	Low Water, Low Residue, Low UV
Environmental	Environmental Analysis, HPLC, Trace Organic	Trace Organics
Food/FCC	Food and Drug Applications	Meets Specifications of Food Chemicals Codex (FCC)
GC	GC Applications	ppb Levels of Contamination
HPLC	HPLC Applications	Sub-micron Filtration, Some Low UV Absorbance
LC/MS	LC/MS Applications	Low Ionic Impurities, < 0.1 ppm
Pesticide Residue	Pesticide, Environmental Analyses, Trace Analyses, and GC-ECS, FID, MS	Meets or Exceeds ACS Pesticide Specifications
Purge & Trap	For Use with P&T Volatile Systems	Low in VOA Impurities, Low BP
Reagent	General Lab Use	> 95% Purity
Spectrophotometric	UV Applications	UV, Vis, IR
Technical	General Lab Use	Non-critical Tasks
USP	Food and Drug Applications	Meets or Exceeds USP Specifications

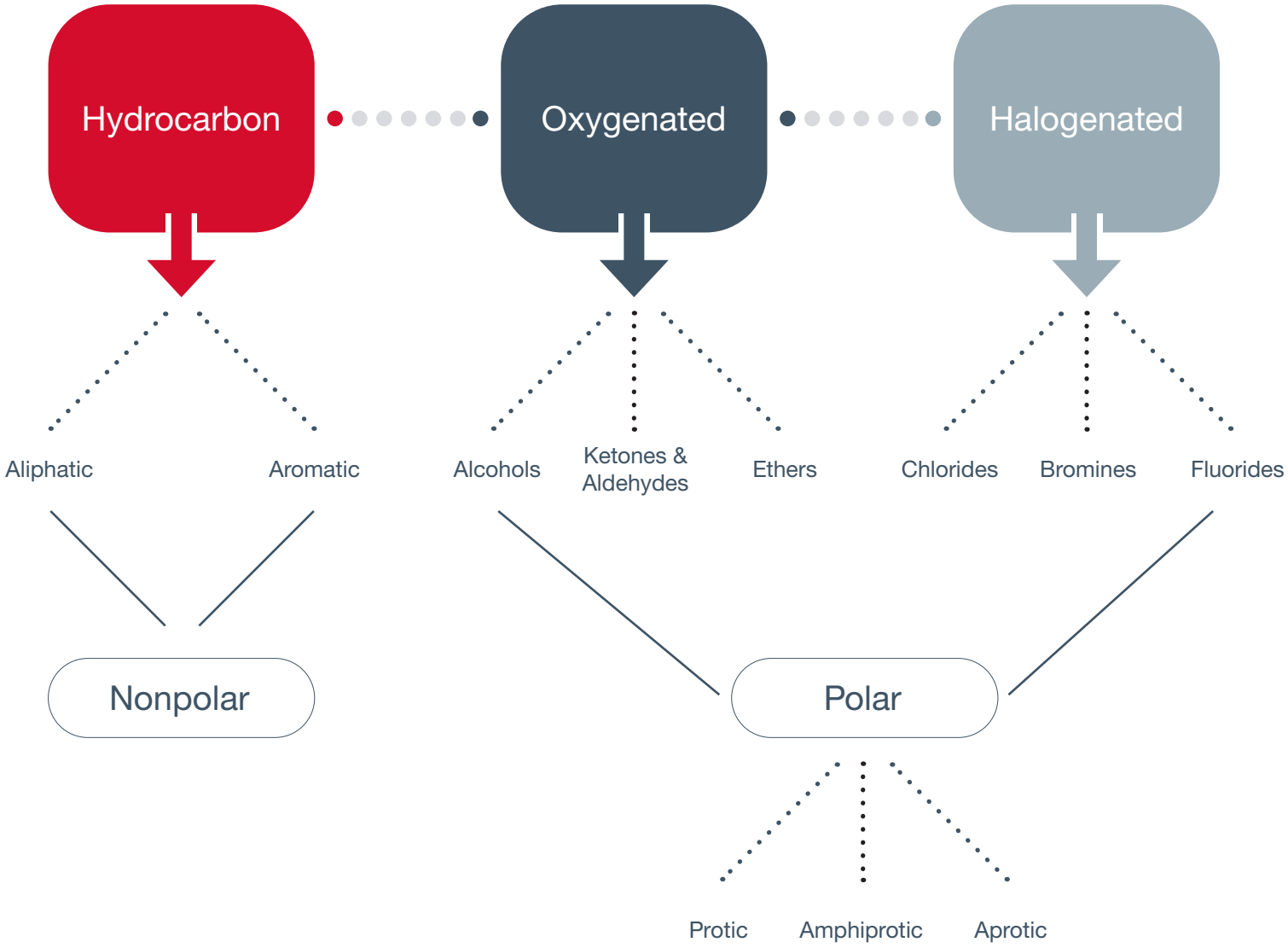
Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company

spex® certiprep

SOLVENT CLASSES



Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company

spex® certiprep

CHEMICAL SOLVENT COMPATIBILITY - NPLC (NORMAL PHASE LIQUID CHROMATOGRAPHY)

Part #	Solvent	CAS #	Formula Weight	Melting Point °C	Boiling Point °C	Refractive Index	Specific Gravity	UV Cutoff (nm)	Polarity Index (Snyder)	Viscosity (cP)	Solubility in Water (% wt/wt)	Benzene	Butyl Acetate	Carbon tetrachloride	Cyclohexane	1,2-Dichloroethane	Dichloromethane	Diethyl ether	Diisopropyl ether	Isooctane	tert-Butyl methyl ether (MTBE)	n-Heptane	n-Hexane	Pentane	Toluene	o-Xylene	p-Xylene
Custom	Benzene	71-43-2	78.11	5	80	1.501	0.874	290	2.7	0.65	0.18		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
S-635	Butyl acetate	123-86-4	116.16	-78	126	1.394	0.882	254	3.9	2.98	7.81	M		M	M	M	M	M	M	M	M	M	M	M	M	M	M
S-750	Carbon tetrachloride	56-23-5	153.82	-23	77	1.460	1.594	263	1.6	0.97	0.08	M	M		M	M	M	M	M	M	M	M	M	M	M	M	M
S-1015	Cyclohexane	110-82-7	84.16	6.5	81	1.426	0.779	200	0.2	1	<0.01	M	M	M		M	M	M	M	M	M	M	M	M	M	M	M
S-1380	1,2-Dichloroethane	107-06-2	98.96	-35	83	1.444	1.256	225	3.5	0.79	0.81	M	M	M	M		M	M	M	M	M	M	M	M	M	M	M
S-2480	Dichloromethane	75-09-2	84.93	-97	40	1.424	1.325	235	3.4	0.44	0.016	M	M	M	M	M		M	M	M	M	M	M	M	M	M	M
S-1900	Diethyl ether	60-29-7	74.12	-116	35	1.353	0.708	220	2.8	0.32	6.89	M	M	M	M	M	M		M	M	M	M	M	M	M	M	M
S-2310	Diisopropyl ether	108-20-3	102.17	-86.8	68.5	1.368	0.726	220	2.2	0.273	0.2	M	M	M	M	M	M	M		M	M	M	M	M	M	M	M
S-3730	Isooctane	540-84-1	114.23	-107	99	1.391	0.692	215	0.1		<0.01	M	M	M	M	M	M	M	M		M	M	M	M	M	M	M
S-2455	tert-Butyl methyl ether (MTBE)	1634-04-4	88.15	--	55	1.369	0.740	210	2.5	0.27	4.8	M	M	M	M	M	M	M	M	M		M	M	M	M	M	M
S-2125	n-Heptane	142-82-5	100.21	-91	98	1.387	0.684	200	0.1	0.39	<0.01	M	M	M	M	M	M	M	M	M	M		M	M	M	M	M
S-2190	n-Hexane	110-54-3	86.18	-95	69	1.375	0.659	200	0	0.33	<0.01	M	M	M	M	M	M	M	M	M	M	M		M	M	M	M
S-2975	Pentane	109-66-0	72.15	-130	36	1.358	0.626	200	0	0.23	<0.01	M	M	M	M	M	M	M	M	M	M	M	M		M	M	M
S-3505	Toluene	108-88-3	92.14	-93	111	1.496	0.867	285	1	0.59	0.051	M	M	M	M	M	M	M	M	M	M	M	M	M		M	M
S-3835	o-Xylene	95-47-6	106.17	-24	144	1.505	0.870	290	2.5	0.61	0.018	M	M	M	M	M	M	M	M	M	M	M	M	M	M		M
S-3840	p-Xylene	106-42-3	106.17	13	138	1.495	0.866	290	2.5	0.603	<0.01	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	

Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company

spex® certiprep

CHEMICAL SOLVENT COMPATIBILITY - RPLC (REVERSED PHASE LIQUID CHROMATOGRAPHY)

Part #	Solvent	CAS #	Formula Weight	Melting Point °C	Boiling Point °C	Refractive Index	Specific Gravity	UV Cutoff (nm)	Polarity Index (Snyder)	Viscosity (cP)	Solubility in Water (% wt/wt)	1-Propanol	2-Propanol	Acetic Acid	Acetone	Acetonitrile	Dimethyl Sulfoxide	Ethanol	Ethyl acetate	Methanol	N,N-Dimethylformamide	Tetrahydrofuran	Water
S-3160	1-Propanol	71-23-8	60.1	-127	97	1.384	0.804	210	4	2.27	100		M	M	M	M	M	M	M	M	M	M	M
S-3167	2-Propanol	67-63-0	60.1	-89.5	82	1.377	0.785	205 (210)	4.3	2.3	100	M		M	M	M	M	M	M	M	M	M	M
S-133	Acetic Acid	64-19-7	60.05	16.6	118	1.371	1.049	230	6.2	1.26	100	M	M		M	M	M	M	M	M	M	M	M
S-140	Acetone	67-64-1	58.08	-94	56	1.359	0.791	330	5.4	0.32	100	M	M	M		M	M	M	M	M	M	M	M
Custom	Acetonitrile	75-05-8	41.05	-43 to -49	82	1.344	0.786	190	6.2	0.37	100	M	M	M	M		M	M	M	M	M	M	M
S-2565	Dimethyl Sulfoxide (DMSO)	67-68-5	78.13	18.4	189	1.479	1.101	268	6.5	2	100	M	M	M	M	M		M	M	M	M	M	M
S-1885	Ethanol	64-17-5	46.07	-114	78	1.360	0.785	210	5.2	1.2	100	M	M	M	M	M	M		M	M	M	M	M
S-1920	Ethyl acetate	141-78-6	88.11	-84	77	1.372	0.902	260	4.3	0.45	0.09	M	M	M	M	M	M	M		M	M	M	I
S-2380	Methanol	67-56-1	32.04	-98	65	1.329	0.791	205	6.6	0.6	100	M	M	M	M	M	M	M	M		M	M	M
S-1620	N,N-Dimethylformamide	68-12-2	73.1	-61	153	1.431	0.944	268	6.4	0.92	100	M	M	M	M	M	M	M	M	M		M	I
S-3460	Tetrahydrofuran	109-99-9	72.11	-108	65	1.407	0.886	212 (215)	4.2	0.55	100	M	M	M	M	M	M	M	M	M	M		M
Custom	Water	7732-18-5	18.02	0	100	1.333	1.000	200	9	1	100	M	M	M	M	M	M	M	I	M	i	M	

Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company

spex® certiprep

SOLVENT BOILING POINTS

Solvent	Boiling Point (°C)
Dichloromethane	40
Acetone	56
Methanol	65
Tetrahydrofuran	65
Ethyl Acetate	77
Ethanol	78
Cyclohexane	81
Acetonitrile	82
Isopropanol	82
Water	100
Toluene	111

Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company

spex® certiprep

Chemical Structure and UV-VIS Absorbance

Bond or Functional Group	Absorption Max (nm)
Alkene	171
Alkyne	180
Ether	185
Ketone	190
Oxime	190
Amine	195
Aldehyde	210
Nitro	210
Nitrite	225
Nitrate	270
Carbonyl	180, 290
Benzene Ring	184, 255
Naphthalene Ring	220, 286

Solvent	UV Cutoff (nm)
Acetonitrile	190
Hexane	195
Cyclohexane	202
2-Propanol	205
Isooctane	205
Methanol	205
THF	210
Ethyl Ether	218
Methylene Chloride	233
Ethyl Acetate	255
DMSO	262
Toluene	285
Acetone	330
Water	N/A

Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company

spex® certiprep

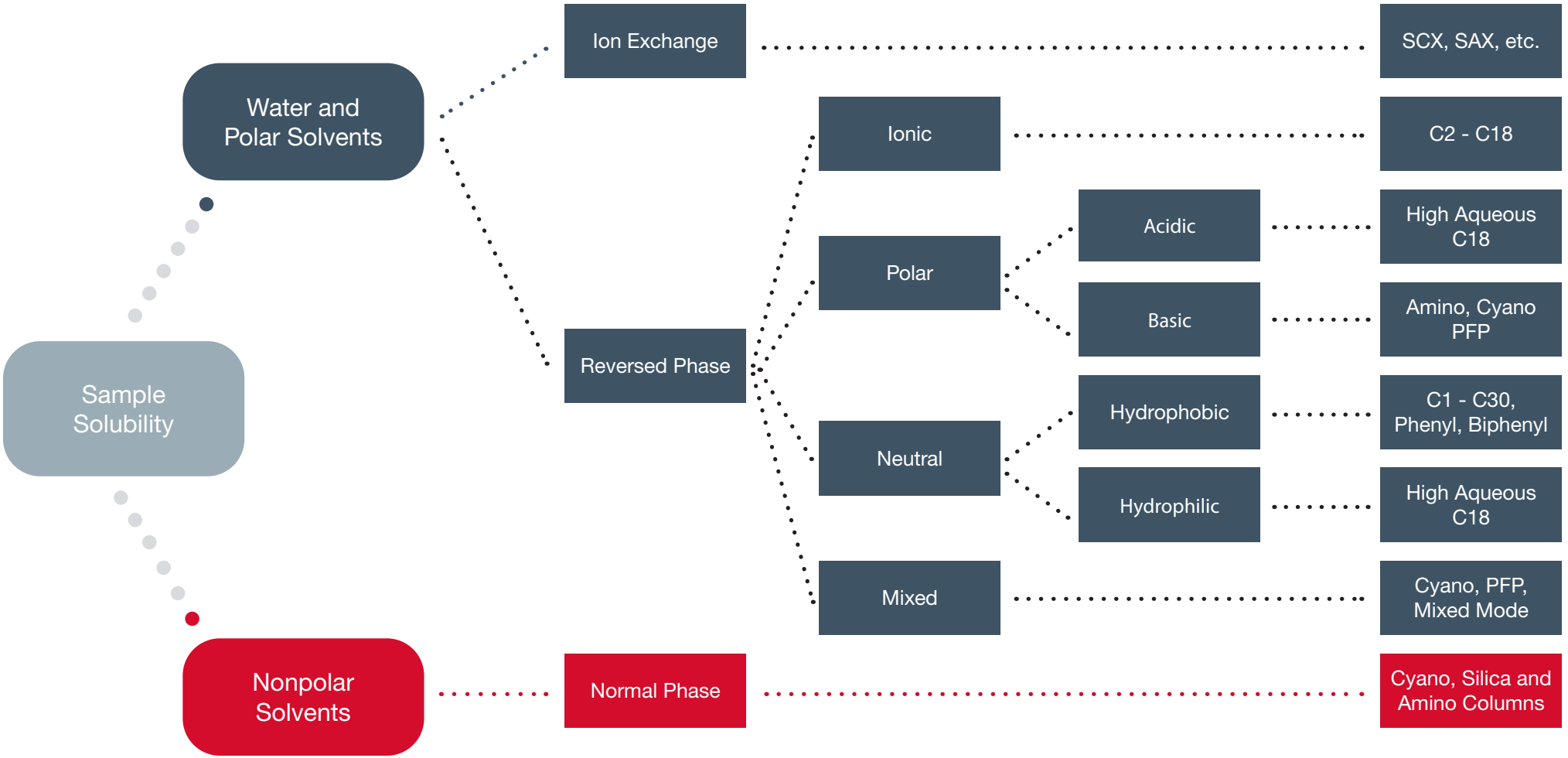
ADDITIVES, BUFFERS AND MODIFIERS

Buffer	pKa	pH Range	UV Cutoff (nm) (10 mM)	LC/MS
TFA	0.5	< 1.5	210 (0.05%)	Y
Phosphate (pk1)	2.1	1.1 - 1.3	200	N
Citrate (pk1)	3.1	2.1 - 4.1	230	N
Formate	3.8	2.8 - 4.8	210	Y
Acetate	4.8	3.8 - 5.8	210	Y
Ammonia	9.2	8.2 - 10.2	200	Y

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® certiprep

COLUMN PHASES



Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company

spex® certiprep

ESTIMATED TYPICAL VOID VOLUME*

Diameter (I.D.) (mm)	Length (mm)	Void Volume (mL)	Dwell Time (min) @ 0.1 mL/min	Dwell Time (min) @ 0.5 mL/min	Dwell Time (min) @ 1 mL/min	Dwell Time (min) @ 2 mL/min
2.1	50	0.12	1.2	0.24	0.12	0.06
2.1	100	0.24	2.4	0.48	0.24	0.12
2.1	150	0.37	3.7	0.74	0.37	0.185
4.6	50	0.58	5.8	1.16	0.58	0.29
4.6	100	1.16	11.6	2.32	1.16	0.58
4.6	150	1.75	17.5	3.5	1.75	0.875

* Note: The void volumes presented are estimates based on average conditions and column packing. Individual system setups can change dwell times; the chart should only be used as a guide to approximate dwell times.

$$V_v\ (\mu l) = d^2 * \pi * L * V_p) / 4$$

d = column diameter (mm), L = column length (mm), V_p = pore volume

Contact Us

Phone: +1.800.LAB.SPEX • +1.732.549.7144 • Fax: +1.732.603.9647
CRMSales@spex.com • spex.com

spex® an antylia scientific company