

Solvent Retention Data

Column: **DB-624**
125-1334
30 m x 0.53 mm, 3.00 µm

Carrier: Helium, constant pressure at 30 cm/sec (40°C)

Oven: 40°C for 5 min
40-260°C at 10°/min
260°C for 3 min

Injection: Split 1:10, 250°C

Detector: FID, 300°C

Column: **DB-1**
125-1034
30 m x 0.53 mm, 3.00 µm

Carrier: Helium, constant pressure at 30 cm/sec (40°C)

Oven: 40°C for 5 min
40-260°C at 10°/min

Injection: Split 1:10, 250°C

Detector: FID, 300°C

Column: **DB-WAX**
125-7032
30 m x 0.53 mm, 1.00 µm

Carrier: Helium, constant pressure at 34 cm/sec (40°C)

Oven: 40°C for 5 min
40-230°C at 10°/min
230°C for 7 min

Injection: Split 1:10, 250°C

Detector: FID, 300°C

These solvent tables have many uses, not least of which is to determine impurities in bulk solvents. All of the columns were selected for their capacity, selectivity and reproducibility.

Warning: Other manufacturers' look-a-like columns do not have the same selectivity as Agilent J&W GC Columns. We do not recommend using this data on other manufacturers' columns.

Analyte	DB-624	DB-1	DB-WAX
1,1,1,2-tetrachloroethane	14.38	13.43	13.80
1,1,1-trichloroethane	8.05	7.56	4.85
1,1,2,2-tetrachloroethane	16.38	14.67	17.73
1,1,2-trichloroethane	12.60	11.00	13.80
1,1,2-trichlorotrifluoroethane (Freon 113)	4.00	4.09	2.13
1,10-decanediol	27.43	25.84	34.11
1,1-dichloroethane	6.11	5.02	9.10
1,1-dichloroethylene (vinylidene chloride)	4.00	3.75	2.65
1,1-dichloropropane	8.72	8.55	9.71
1,1-dichloropropene	8.34	7.85	4.56
1,2,3-trichlorobenzene	22.23	21.28	21.25
1,2,3-trichloropropane	16.46	14.84	17.06
1,2,3-trimethylbenzene (hemimellitene)	18.18	17.61	15.29
1,2,4,5-tetrachlorobenzene	24.02	23.35	22.08
1,2,4-trichlorobenzene	21.41	20.63	20.03
1,2,4-trimethylbenzene (pseudocumene)	17.47	16.99	14.27
1,2-dibromo-3-chloropropane (DBCP)	20.02	18.50	20.57
1,2-dibromoethane (EDB)	13.43	12.10	13.80
1,2-dichlorobenzene	18.69	17.81	17.80
1,2-dichloroethane (ethylene dichloride)	9.62	7.17	7.20
1,2-dichloropropane	10.17	8.93	4.95
1,3,5-trichlorobenzene	20.35	19.85	18.19
1,3,5-trimethylbenzene (mesitylene)	16.82	16.41	13.55
1,3-butanediol	16.10	13.30	20.96
1,3-dichlorobenzene	17.96	17.20	16.60
1,3-dichloropropane	12.86	11.35	12.38
1,3-diisopropylbenzene	20.35	20.02	15.47

Analyte	DB-624	DB-1	DB-WAX
1,3-dioxolane	7.30	4.09	7.09
1,3-propanediol	13.13	9.95	18.97
1,4-butanediol	17.70	15.03	23.14
1,4-dichlorobenzene	18.79	17.31	17.06
1,4-diisopropylbenzene	20.73	20.42	16.20
1,4-dioxane	10.38	9.18	9.65
1,5-pentanediol	19.52	17.17	24.43
1,6-hexanediol	21.30	19.17	25.75
1,7-heptanediol	22.97	21.03	27.26
1,8-octanediol	24.54	22.73	29.06
1,9-nonanediol	26.02	24.33	31.29
1-butanol	9.73	7.90	11.48
1-chloro-4-nitrobenzene (diisopropyl ketone)	3.06	21.34	23.97
1-chlorobutane	8.25	7.56	3.99
1-chlorohexane	14.21	13.69	9.10
1-decanol	22.65	21.85	21.12
1-heptanol	17.22	16.13	16.91
1-hexanol	15.06	13.81	15.31
1-methyl-2-pyrrolidone	19.66	17.21	20.71
1-nonanol	20.97	20.11	19.80
1-octanol	19.17	18.21	18.40
1-pentanol	12.63	11.11	13.54
1-penten-3-ol	10.20	8.54	11.77
1-penten-3-one (ethyl vinyl ketone)	10.03	8.40	8.56
1-propanol	6.34	4.44	9.11
2,2-dichloropropane	7.16	6.34	3.99
2,3-butanediol	14.14	11.40	18.70
2,3-butanedione (diacetal)	6.99	5.09	7.44
2,3-pentanedione	10.34	8.66	9.49
2,4-dimethyl-3-pentanone	12.94	11.90	7.94
2,6-dimethyl-4-heptanone	17.06	16.26	12.03
2-butanone (MEK)	7.19	5.41	5.35
2-buten-1-ol (crotyl alcohol)	9.87	7.99	12.95
2-butoxyethanol (butyl cellosolve)	15.89	14.72	16.31
2-chlorotoluene	16.71	16.07	14.71
2-ethoxyethanol (cellosolve)	10.98	9.39	13.11
2-ethoxyethyl acetate	15.57	14.40	14.31
2-ethyl-1-hexanol	18.40	17.42	17.41
2-heptanol	15.63	14.61	14.71
2-heptanone	15.46	14.26	12.27
2-hexanol	13.31	12.06	12.95
2-hexanone	13.01	11.60	10.04
2-methoxyethanol (methyl cellosolve)	8.67	6.74	12.25
2-methyl-1-butanol (active amyl alcohol)	11.87	10.30	12.73
2-methyl-2-butanol (tert-amyl alcohol)	8.73	7.14	8.43
2-methyl-3-buten-2-ol	7.91	6.17	9.11
2-methyl-3-pentanone	11.85	10.59	7.94
2-methylbutyl acetate	14.82	14.81	12.05
2-nitrotoluene	21.60	20.02	22.62
2-octanone	17.63	16.46	14.20
2-pentanol	10.60	9.10	10.94
2-pentanone	10.11	8.46	7.44
2-penten-1-ol	12.63	11.11	14.65
2-phenoxyethanol	22.65	20.92	26.14
2-propen-1-ol (allyl alcohol)	6.21	4.09	10.78
2-propyn-1-ol (propargyl alcohol)	7.55	4.57	15.16
3-buten-1-ol	9.02	6.95	12.02
3-chloropropene (allyl chloride)	4.57	3.96	3.46
3-chlorotoluene	16.82	16.07	14.90
3-heptanol	15.53	14.54	14.29
3-heptanone	15.29	14.19	11.66
3-hexanol	13.16	11.97	12.49
3-hexanone	12.80	11.52	9.34
3-methyl-1-butanol (iso-amyl alcohol)	11.78	10.17	12.73
3-methyl-2-butanone	9.21	7.60	6.15
3-methyl-2-buten-1-ol	12.85	11.33	14.82
3-nitrotoluene	22.40	20.72	21.92
3-octanone	17.45	16.46	13.66
3-pentanol	10.60	9.10	10.66
3-pentanone	10.34	8.80	7.44
3-penten-2-one (methyl vinyl ketone)	6.93	5.09	6.61
4-chlorostyrene (diisobutyl ketone)	19.35	18.56	18.19
4-chlorotoluene	16.82	16.07	14.90
4-heptanone	14.95	13.88	11.06
4-hexen-3-one	14.24	12.76	12.55
4-hydroxy-4-methyl-2-pentanone	14.98	12.89	15.70
4-methyl-2-pentanol	12.28	10.93	11.89
4-methyl-2-pentanone	11.64	10.22	8.19
4-methyl-3-penten-3-one	13.20	11.90	11.26
4-methylstyrene	17.68	16.99	15.61
4-nitrotoluene	22.79	21.05	23.14
4-phenyl-2-butanone (benzyl acetone)	22.91	21.36	22.76
4-tert-butyltoluene	19.35	18.97	15.13
5-methyl-2-hexanone	14.73	13.46	11.40

Solvent Retention Data

Analyte	DB-624	DB-1	DB-WAX	Analyte	DB-624	DB-1	DB-WAX
5-methyl-3-heptanone	16.52	15.55	12.38	hexadecane	26.63	26.88	18.70
acetal (acetaldehyde diethyl acetal)	10.58	10.21	5.09	hexanal	13.14	11.88	10.07
acetaldehyde	2.46	2.16	2.47	hexane	5.82	6.25	2.05
acetone	4.05	3.05	3.60	iodobenzene	18.10	17.87	18.30
acetic acid	9.10	16.87	16.87	iodomethane	4.27	3.75	3.46
acetonitrile	4.27	2.87	8.12	iso-amyl acetate	14.75	13.97	10.31
acetophenone	19.69	18.13	20.13	iso-butanol	8.60	6.74	10.96
acrolein	3.81	2.98	4.10	iso-butyl acetate	12.19	11.30	8.36
acrylic acid	12.21	19.16	19.61	iso-butylbenzene	17.68	17.31	13.47
acrylonitrile	5.22	3.43	7.81	iso-butylaldehyde	5.66	4.37	3.54
a-ethylphenethyl alcohol	22.65	21.38	23.10	iso-octane	8.81	9.27	2.44
allyl ether	9.65	9.05	6.04	isophorone	21.04	19.31	19.47
allyl ethyl ether	6.41	6.00	3.05	iso-propanol	4.27	3.22	6.28
a-methylphenyl alcohol	19.60	18.03	22.00	iso-propyl acetate	8.87	7.88	5.32
a-methylstyrene	17.22	16.62	15.13	iso-propyl ether	6.23	6.21	3.27
amyl acetate	15.57	14.04	10.96	iso-propylbenzene (cumene)	15.88	15.43	12.13
benzaldehyde	17.45	15.88	17.25	methacrolein	6.01	4.68	4.83
benzene	8.69	8.00	6.46	methacrylonitrile	7.53	5.36	7.54
benzointrile 1	18.21	16.26	19.55	methanol	2.59	2.15	5.40
benzyl acetate	21.07	19.86	21.01	methyl acetate	4.60	3.79	3.78
benzyl alcohol	19.27	17.42	22.82	methyl benzoate	19.90	18.76	19.70
benzyl ether	29.08	27.72	30.41	methyl formate	2.80	2.44	2.85
b-ethylphenethyl alcohol	23.03	21.71	24.12	methyl propionate	7.88	6.78	5.54
bromobenzene	16.39	15.54	15.47	methyl tert-butyl ether (MTBE)	5.30	5.06	2.30
bromochloromethane	7.59	4.79	9.26	methylene chloride	4.80	3.85	6.18
bromodichloromethane	10.64	9.22	11.76	morpholine	12.98	13.62	13.62
bromoethane	4.27	3.75	2.95	m-tolualdehyde	19.63	18.23	19.77
bromoform	15.61	14.20	17.00	m-xylene	14.62	14.11	11.44
butyl acetate	13.24	12.36	9.85	nitrobenzene	20.35	18.56	21.41
butyl ether	14.41	14.39	6.97	nonanal	19.71	18.84	16.05
butyl ethyl ether	9.34	9.18	3.27	nonane	14.63	14.95	4.97
butyl methyl ether	7.10	6.85	2.80	octanal	17.76	16.80	14.29
butylbenzene	18.69	18.24	14.81	octane	12.11	12.48	3.22
butyraldehyde	6.84	5.29	4.72	o-tolualdehyde	19.63	18.23	19.73
carbon disulfide	4.27	4.09	2.65	o-xylene	15.28	14.69	12.39
carbon tetrachloride	8.34	8.18	4.85	pentachlorobenzene	27.10	26.38	25.09
chlorobenzene	14.25	13.44	13.00	pentadecane	25.26	25.51	17.28
chlorodibromomethane	13.25	11.81	14.52	pentanal (valeraldehyde)	10.25	8.76	7.46
chloroform	7.75	6.34	8.58	pentane	3.37	3.51	1.89
cis-1,2-dichloroethylene	7.16	5.98	7.84	pentyl ether	18.53	18.51	12.66
cis-1,3-dichloropropene	11.38	10.20	11.27	propionaldehyde	3.91	3.11	3.25
cis-2-hexen-1-ol	15.19	13.81	16.31	propionic acid	11.89	18.18	18.18
cis-3-hexen-1-ol	14.88	13.51	15.87	propionitrile	7.25	4.43	8.72
cis-4-hepten-1-ol	17.22	16.02	17.67	propyl acetate	10.51	9.47	7.38
crotonaldehyde	9.18	7.03	9.07	propyl benzoate	22.92	21.91	21.46
cyclohexane	8.10	8.32	2.27	propyl ether	9.05	9.05	3.05
cyclohexanol	15.63	14.26	16.31	propyl formate	7.66	6.48	5.93
cyclohexanone	16.04	14.26	14.61	propyl propionate	13.07	12.25	9.17
cyclopentanol	3.16	11.56	14.57	propylbenzene	16.56	16.07	12.86
cyclopentanone	13.39	11.42	12.46	propylene glycol (1,2-propanediol)	13.16	9.90	18.96
decane	16.82	17.12	7.63	p-tolualdehyde	19.96	18.50	20.13
dibromomethane	10.37	8.93	11.98	p-xylene	14.62	14.11	11.30
diethylene glycol	18.24	15.60	23.91	pyridine	11.70	10.21	12.44
diethylene glycol monobutyl ether	21.46	20.26	21.74	sec-butanol	7.55	5.80	8.77
diethylene glycol monoethyl ether	18.04	16.60	19.48	sec-butyl acetate	11.76	10.91	7.69
diethylene glycol monomethyl ether	16.78	15.09	19.06	sec-butylbenzene	17.68	17.37	13.64
diglyme (diethylene glycol dimethyl ether)	9.92	8.68	6.04	styrene	15.28	14.55	13.80
DMF (dimethylformamide)	13.73	10.80	15.25	styrene oxide	19.46	18.24	19.46
DMSO (methyl sulfoxide)	15.58	11.94	19.21	tert-amyl methyl ether	8.89	8.68	3.27
dodecane	20.58	20.85	12.23	tert-butanol	5.01	3.72	5.54
epichlorohydrin	11.22	9.35	11.69	tert-butyl acetate	10.02	9.32	5.40
ethanol	3.47	2.68	6.46	tert-butyl ethyl ether	6.90	6.85	2.47
ethyl acetate	7.34	6.21	5.03	tert-butylbenzene	17.39	16.99	13.41
ethyl acrylate	10.02	8.93	7.87	tetrachloroethylene	12.86	12.66	8.58
ethyl benzoate	21.22	20.15	20.27	tetradecane	23.80	24.06	15.75
ethyl ether	3.72	3.50	2.13	tetrahydropyran	10.06	9.35	5.83
ethyl formate	4.27	3.56	3.78	THF (tetrahydrofuran)	7.64	6.75	4.45
ethyl propionate	10.37	9.42	6.93	toluene	11.93	11.33	9.06
ethyl vinyl ether	3.72	3.22	2.39	trans-1,2-dichloroethylene	5.33	6.17	4.38
ethylbenzene	14.42	13.90	11.13	trans-1,3-dichloropropene	12.30	10.80	12.78
ethylene glycol	12.15	8.54	19.47	trans-1,4-dichloro-2-butene	16.46	14.91	17.00
ethylene glycol monobutyl ether	15.84	14.68	16.24	trans-2-hepten-1-ol	17.22	16.13	17.77
ethylene glycol monoethyl ether	10.95	9.35	13.11	trichloroethylene	9.80	9.22	7.84
ethylene glycol monomethyl ether	8.64	6.72	12.24	tridecane	22.24	22.51	14.09
fluorobenzene	9.18	8.36	7.72	triethylamine	8.91	8.93	3.26
fluorotrichloromethane (Freon 11)	3.24	3.23	2.13	triglyme (triethylene glycol dimethyl ether)	21.95	20.75	20.77
furan	3.72	3.36	3.27	undecane	18.78	19.07	10.10
furfural	14.63	12.54	18.32	vinyl acetate	6.37	4.09	5.03
furfuryl alcohol	15.32	13.25	19.90				
glycidol	11.93	9.10	17.25				
glyme (propylene glycol dimethyl ether)	8.65	7.56	6.04				
heptanal	15.60	14.52	12.32				
heptane	9.15	9.58	2.65				
hexachloro-1,3-butadiene	21.69	21.46	17.84				

GC and GC/MS