

TRACE™ GC Ultra K Factor Quick Reference

Helium Carrier Gas Expected K Factors Values

COLUMN ID (mm)

The tables on this card indicate the expected K factors for columns of ideal dimensions when using helium, hydrogen, or nitrogen as a carrier gas. Use this information when interpreting results from a Column Evaluation.

Deviations from this chart will occur due to dimensional tolerances.

For example, a 30 m x 0.25 mm column will typically give K factors of 1.5–2.0. Large deviations from the expected values will indicate leaks in the septum or column ferrule or a plugging of the column at the inlet or exit points.

Refer to Chapter 15 of the TRACE™ GC Ultra Operating Manual for more information about column evaluation.

COLUMN LENGTH (m)	COLUMN ID (mm)							
	0.10	0.15	0.18	0.20	0.22	0.25	0.32	0.53
2.5	5.55	1.095	0.53	0.347	0.237	0.142	0.053	
5	11.1	2.19	1.06	0.694	0.474	0.284	0.106	0.014
6	13.3	2.63	1.27	0.833	0.569	0.341	0.127	0.017
7	15.5	3.07	1.48	0.971	0.663	0.398	0.148	0.020
8	17.8	3.51	1.69	1.11	0.758	0.455	0.169	0.022
9	20.0	3.95	1.90	1.25	0.853	0.511	0.191	0.025
10	22.2	4.39	2.11	1.39	0.948	0.568	0.212	0.028
15		6.58	3.17	2.08	1.42	0.852	0.318	0.042
20		8.77	4.23	2.78	1.90	1.14	0.423	0.056
25		11.0	5.29	3.47	2.37	1.42	0.529	0.070
30		13.2	6.34	4.16	2.84	1.70	0.635	0.084
35		15.3	7.40	4.86	3.32	1.99	0.741	0.098
40		17.5	8.46	5.55	3.79	2.27	0.847	0.113
45		19.7	9.52	6.24	4.26	2.56	0.953	0.127
50		21.9	10.6	6.94	4.74	2.84	1.06	0.141
55		24.1	11.6	7.63	5.21	3.13	1.16	0.155
60			12.7	8.33	5.69	3.41	1.27	0.169
65			13.7	9.02	6.16	3.69	1.38	0.183
70			14.8	9.71	6.63	3.98	1.48	0.197
75			15.9	10.4	7.11	4.26	1.59	0.211
80			16.9	11.1	7.58	4.55	1.69	0.225
85			18.0	11.8	8.06	4.83	1.80	0.239
90			19.0	12.5	8.53	5.11	1.91	0.253
95			20.1	13.2	9.00	5.40	2.01	0.267
100			21.1	13.9	9.48	5.68	2.12	0.281
105			22.2	14.6	9.95	5.97	2.22	0.295

HOME

Thermo
ELECTRON CORPORATION

Nitrogen and Hydrogen Carrier Gas Expected K Factors Values

COLUMN ID (mm)

		0.10		0.15		0.18		0.20		0.22		0.25		0.32		0.53	
		N ₂	H ₂	N ₂	H ₂	N ₂	H ₂	N ₂	H ₂	N ₂	H ₂	N ₂	H ₂	N ₂	H ₂	N ₂	H ₂
COLUMN LENGTH (m)	2.5	4.95	2.49	0.98	0.492	0.471	0.237	0.309	0.155	0.2155	0.106	0.126	0.063	0.047	0.023		
	5	9.90	4.98	1.96	0.984	0.943	0.474	0.619	0.311	0.423	0.213	0.253	0.127	0.094	0.047	0.012	
	6	11.9	5.98	2.35	1.18	1.13	0.569	0.743	0.374	0.507	0.255	0.304	0.153	0.113	0.057	0.015	
	7	13.9	6.97	2.74	1.38	1.32	0.664	0.866	0.436	0.592	0.298	0.355	0.178	0.132	0.066	0.017	
	8	15.8	7.97	3.13	1.57	1.51	0.759	0.990	0.498	0.676	0.340	0.406	0.204	0.151	0.076	0.020	
	9	17.8	8.96	3.52	1.77	1.70	0.854	1.11	0.560	0.761	0.383	0.456	0.229	0.170	0.085	0.022	
	10	19.8	9.96	3.91	1.97	1.89	0.949	1.24	0.623	0.845	0.425	0.507	0.255	0.189	0.095	0.025	0.012
	15	29.7	14.9	5.87	2.95	2.83	1.42	1.86	0.934	1.27	0.638	0.760	0.382	0.283	0.142	0.037	0.019
	20		19.9	7.82	3.93	3.77	1.90	2.48	1.25	1.69	0.850	1.01	0.510	0.378	0.190	0.050	0.025
	25		24.9	9.78	4.92	4.72	2.37	3.09	1.56	2.11	1.06	1.27	0.637	0.472	0.237	0.063	0.031
	30			11.7	5.90	5.66	2.85	3.71	1.87	2.54	1.28	1.52	0.765	0.566	0.285	0.075	0.037
	35			13.7	6.89	6.60	3.32	4.33	2.18	2.96	1.49	1.77	0.892	0.661	0.332	0.088	0.044
	40			15.6	7.87	7.54	3.80	4.95	2.49	3.38	1.70	2.03	1.02	0.755	0.380	0.100	0.050
	45			17.6	8.85	8.49	4.27	5.57	2.80	3.80	1.91	2.28	1.15	0.850	0.427	0.113	0.057
	50			19.6	9.84	9.43	4.74	6.19	3.11	4.23	2.13	2.53	1.27	0.944	0.475	0.125	0.063
	55			21.5	10.8	10.4	5.22	6.81	3.42	4.65	2.34	2.79	1.40	1.04	0.522	0.138	0.069
	60				11.8	11.3	5.69	7.43	3.74	5.07	2.55	3.04	1.53	1.13	0.570	0.151	0.076
65				12.7	12.3	6.17	8.04	4.05	5.49	2.76	3.29	1.66	1.23	0.617	0.163	0.082	
70				13.7	13.2	6.64	8.66	4.36	5.92	2.98	3.55	1.78	1.32	0.665	0.176	0.088	
75				14.7	14.1	7.12	9.28	4.67	6.34	3.19	3.80	1.91	1.42	0.712	0.188	0.095	
80				15.7	15.1	7.59	9.90	4.98	6.76	3.40	4.06	2.04	1.51	0.760	0.201	0.101	
85				16.7	16.0	8.06	10.5	5.29	7.18	3.61	4.31	2.17	1.61	0.807	0.213	0.107	
90				17.7	17.0	8.54	11.1	5.60	7.61	3.83	4.56	2.29	1.70	0.855	0.226	0.114	
95				18.6	17.9	9.01	11.8	5.91	8.03	4.04	4.82	2.42	1.79	0.902	0.238	0.120	
100				19.6	18.9	9.49	12.4	6.23	8.45	4.25	5.07	2.55	1.89	0.950	0.251	0.126	
105				20.6	19.8	9.96	13.0	6.54	8.87	4.46	5.32	2.68	1.98	0.997	0.263	0.133	