Magboltz Simulation

Magboltz Version 11.9
no Penning transfers
Gas mixture Ar:CF_4:iC_4H_{10} 95:3:2
E_{drift} = 280 V/cm

Run 6916

B = 0T
T = 32.6° C
p = 758.312 torr
(= 1011 mbar)

O_2 = 256 ppm

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.877 ± 0.0008	331 ± 6	205 ± 3
256 ppm	7.744 ± 0.0008	316 ± 6	211 ± 3
1000 ppm	7.331 ± 0.0007	318 ± 4	213 ± 4
3000 ppm	6.167 ± 0.0006	285 ± 5	230 ± 4
5000 ppm	5.054 ± 0.0015	263 ± 4	259 ± 6
7000 ppm	4.105 ± 0.0016	237 ± 5	264 ± 8
?	6.30034	287	268

Run 6917

B = 0T
T = 33.0° C
p = 759.062 torr
(= 1012 mbar)

O_2 = 251 ppm

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.876 ± 0.0008	338 ± 3	206 ± 4
251 ppm	7.746 ± 0.0008	326 ± 5	204 ± 3
1000 ppm	7.331 ± 0.0007	314 ± 3	213 ± 4
3000 ppm	6.168 ± 0.0006	281 ± 4	237 ± 5
5000 ppm	5.053 ± 0.0015	257 ± 5	261 ± 3
7000 ppm	4.108 ± 0.0012	245 ± 4	264 ± 4
?	6.30206	287	268

Run 6918

B = 0T
T = 33.2° C
p = 759.813 torr
(= 1013 mbar)

O_2 = 246 ppm

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.876 ± 0.0008	323 ± 6	209 ± 5
246 ppm	7.749 ± 0.0008	326 ± 4	213 ± 3
1000 ppm	7.329 ± 0.0007	311 ± 5	209 ± 3
3000 ppm	6.166 ± 0.0012	285 ± 4	240 ± 5
5000 ppm	5.054 ± 0.0015	263 ± 3	258 ± 6
7000 ppm	4.105 ± 0.002	246 ± 4	261 ± 3
?	6.16319	287	268

6916, 6917, 6918

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.877 ± 0.0008	331 ± 6	205 ± 3	7.876 ± 0.0008	338 ± 3	206 ± 4	7.876 ± 0.0008	323 ± 6	209 ± 5
256 ppm	7.744 ± 0.0008	316 ± 6	211 ± 3	7.746 ± 0.0008	326 ± 5	204 ± 3	7.749 ± 0.0008	326 ± 4	213 ± 3
1000 ppm	7.331 ± 0.0007	318 ± 4	213 ± 4	7.331 ± 0.0007	314 ± 3	213 ± 4	7.329 ± 0.0007	311 ± 5	209 ± 3
3000 ppm	6.167 ± 0.0006	285 ± 5	230 ± 4	6.168 ± 0.0006	281 ± 4	237 ± 5	6.166 ± 0.0012	285 ± 4	240 ± 5
5000 ppm	5.054 ± 0.0015	263 ± 4	259 ± 6	5.053 ± 0.0015	257 ± 5	261 ± 3	5.054 ± 0.0015	263 ± 3	258 ± 6
7000 ppm	4.105 ± 0.0016	237 ± 5	264 ± 8	4.108 ± 0.0012	245 ± 4	264 ± 4	4.105 ± 0.002	246 ± 4	261 ± 3
?	6.30034	287	268	6.30206	287	268	6.16319	287	268

Run 6983

B = 1T
T = 31.0° C
p = 767.313 torr
(= 1023 mbar)

O_2 = 595 ppm

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.868 ± 0.0008	114 ± 2	194 ± 3
595 ppm	7.533 ± 0.0008	116 ± 2	211 ± 5
1000 ppm	7.279 ± 0.0007	117 ± 2	215 ± 4
3000 ppm	6.098 ± 0.0006	115 ± 1	235 ± 5
5000 ppm	4.971 ± 0.001	123 ± 2	253 ± 4
7000 ppm	4.014 ± 0.002	125 ± 2	263 ± 4
?	5.87502	120	251

Run 6986

B = 1T
T = 31.1° C
p = 767.313 torr
(= 1023 mbar)

O_2 = 606 ppm

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.869 ± 0.0008	113 ± 2	202 ± 5
606 ppm	7.528 ± 0.0008	114 ± 2	206 ± 3
1000 ppm	7.300 ± 0.0007	115 ± 1	211 ± 3
3000 ppm	6.098 ± 0.0012	120 ± 2	242 ± 5
5000 ppm	4.972 ± 0.0015	123 ± 2	258 ± 3
7000 ppm	4.019 ± 0.0016	128 ± 1	267 ± 7
?	5.82876	120	251

Run 6989

B = 1T
T = 31.2° C
p = 767.313 torr
(= 1023 mbar)

O_2 = 618 ppm

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.868 ± 0.0008	115 ± 2	207 ± 4
618 ppm	7.520 ± 0.0008	114 ± 2	204 ± 3
1000 ppm	7.298 ± 0.0007	116 ± 2	213 ± 4
3000 ppm	6.099 ± 0.0006	117 ± 1	238 ± 5
5000 ppm	4.974 ± 0.001	125 ± 3	261 ± 5
7000 ppm	4.019 ± 0.0012	129 ± 2	272 ± 4
?	5.890797	120	251

Run 6990

B = 1T
T = 30.6° C
p = 766.563 torr
(= 1022 mbar)

O_2 = 618 ppm

H_2O	V_{drift} cm/µs	D_T µm/√cm	D_L µm/√cm
0 ppm	7.869 ± 0.0008	113 ± 2	199 ± 2
618 ppm	7.520 ± 0.0008	113 ± 2	219 ± 4
1000 ppm	7.296 ± 0.0015	115 ± 3	213 ± 2
3000 ppm	6.092 ± 0.0012	118 ± 2	243 ± 4
5000 ppm	4.963 ± 0.0015	124 ± 2	257 ± 5
7000 ppm	4.010 ± 0.002	127 ± 2	269 ± 4
?	5.71644	120	251