

Supporting Information

Table 1. Areas of the free (S_f) and hydrogen bonded (S_b) carbonyl bands of 1a, 1b, 1c and 3 measured by FTIR spectroscopy in dichloromethane, as a function of molar concentration of acid groups ($[A_0]$) and KBr cell path length (l).

compound	$[A_0]$ (10^{-3} mol/l)	l (cm)	S_f	S_b
1a	42.094	0.0498	6.203	32.657
1a	20.940	0.0498	3.527	14.595
1a	8.419	0.0498	2.183	5.946
1a	4.209	0.0962	2.309	5.082
1a	2.094	1	13.787	23.660
1a	1.047	2.5	20.550	27.227
1a	0.524	2.5	12.491	10.888
1a	0.262	2.5	7.320	4.061
1a	0.131	5	7.134	3.416
1a	0.065	5	3.771	1.230
1b	27.344	0.0498	6.319	41.467
1b	19.956	0.0498	5.476	32.902
1b	14.971	0.0498	4.597	25.231
1b	11.219	0.0498	3.910	19.137
1b	8.403	0.0498	3.192	14.446
1b	0.870	1	8.454	21.109
1b	0.067	2.5	1.983	3.366
1b	5.951	0.0498	2.559	9.305
1b	0.652	1	6.922	15.471
1b	0.309	2.5	8.044	15.639
1b	0.154	2.5	4.177	7.165
1b	11.901	0.0498	3.826	16.319

1b	1.190	1	16.382	41.394
1b	0.450	1	3.229	6.492
1b	23.803	0.0498	4.989	28.796
1b	2.898	0.2040	3.520	11.791
1b	3.865	0.2040	4.371	15.917
1c	23.922	0.0498	4.496	20.842
1c	10.294	0.0498	2.673	8.867
1c	3.941	0.0498	1.261	3.152
1c	1.971	0.0498	1.193	2.819
1c	1.000	1	6.004	13.892
1c	0.500	2.5	7.980	17.223
1c	0.250	2.5	4.319	8.319
1c	0.125	5	4.413	8.635
3	1.961	0.2040	4.714	3.843
3	0.981	1	19.686	7.851
3	0.225	2.5	12.949	1.180
3	20.889	0.0498	9.819	41.666
3	15.664	0.0498	9.974	31.068
3	11.748	0.0498	8.051	22.958
3	8.810	0.0498	7.419	16.501
3	1.486	1	41.428	21.107
3	0.594	1	19.361	4.699
3	0.297	1	10.473	1.271
3	3.898	0.0498	2.829	3.846
3	2.650	0.1128	4.479	4.384
3	0.451	1	10.304	1.973

Table 2. Areas of the free (S_f) and hydrogen bonded (S_b) carbonyl bands of 1a, 1b, 1c and 3 measured by FTIR spectroscopy in carbon tetrachloride, as a function of molar concentration of acid groups ($[A_0]$) and KBr cell path length (l).

compound	$[A_0]$ (10^{-3} mol/l)	l (cm)	S_f	S_b
1b	0.021	5	0.163	3.071
1b	0.030	5	0.209	4.565
1b	0.064	2.5	0.174	4.742
1b	0.091	2.5	0.218	6.652
1b	0.206	1	0.201	6.296
1b	0.289	1	0.276	8.564
1b	2.409	0.0498	0.093	3.703
1b	6.212	0.0140	0.051	2.506
1b	12.438	0.0140	0.115	4.954
1b	19.071	0.0140	0.194	7.144
1b	25.428	0.0140	0.258	9.157
3	1.851	0.2040	1.192	7.770
3	1.389	0.2040	1.051	5.775
3	1.041	0.2040	0.841	4.490
3	0.885	1	2.998	14.596
3	0.561	1	2.698	9.711
3	0.155	2.5	3.082	4.156
3	0.058	5	3.887	2.277
3	15.225	0.0498	0.738	14.781
3	7.613	0.0498	0.476	7.701
3	0.610	0.2040	0.930	4.178
3	2.368	0.2040	1.633	13.509
3	3.946	0.2040	2.220	25.336

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Table 3. Areas of the free (S_f) and hydrogen bonded (S_b) carbonyl bands of 1a, 1b, 1c and 3 measured by FTIR spectroscopy in hexane, as a function of molar concentration of acid groups ($[A_0]$) and KBr cell path length (l).

compound	$[A_0]$ (10^{-3} mol/l)	l (cm)	S_f	S_b
1b	2.032	0.0498	0.033	3.063
1b	4.068	0.0498	0.046	5.896
1b	5.086	0.0498	0.041	6.958
1b	7.954	0.0498	0.079	10.454
1b	9.936	0.0498	0.084	13.605
1b	12.424	0.0498	0.101	16.410
1b	12.424	0.0140	0.024	4.553
1b	15.582	0.0140	0.028	5.453
1b	19.478	0.0140	0.039	6.701
1b	24.354	0.0140	0.058	8.131
1b	30.450	0.0140	0.062	9.781
3	23.691	0.0052	0.043	2.322
3	12.692	0.0221	0.146	5.342
3	10.153	0.0498	0.330	10.259
3	8.112	0.0498	0.301	8.623
3	6.490	0.0498	0.293	7.012
3	4.933	0.0498	0.268	5.493
3	3.045	0.2040	0.880	16.059
3	1.523	0.2040	0.646	8.154