

Additions and Corrections

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K. M. Delak* and N. Sahai: Amine-Catalyzed Biomimetic Hydrolysis and Condensation of Organosilicate.

Please note the following corrections to this article (*Chem. Mater.* **2005**, *17*, 3221).

A recent review of some of the data used revealed some errors. Specifically, the calculation of the hydrolysis and condensation rate constants are incorrect by roughly a factor of 2, because the starting molarity used for trimethylethoxysilane was actually 2 M, rather than the 4 M that was used in our calculations. Further inspection also showed that individual hydrolysis rate constants for the catalysts tetraethylenepentamine and imidazole were incorrectly calculated.

The amended data are summarized in Tables 1 and 2. Graphical data are included in Supporting Information. These errors have no adverse effects on the overall conclusions drawn from the work.

Supporting Information Available: Graphical data. This material is available free of charge via the Internet at <http://pubs.acs.org>.

Table 1

name	catalyst	no. of functional groups	pK _a ^a	k _{hyd} (10 ⁻⁴ mol L ⁻¹ s ⁻¹)	k _{cond} (10 ⁻⁸ L mol ⁻¹ s ⁻¹)	conjugate base concentration ^b (10 ⁻⁶ mol L ⁻¹)
HCl	(control)	0		0.58 ± 0.06	3.3 ± 0.8	0.0063 (OH ⁻)
Polyamines						
DB	1,4-diaminobutane	2	9.1	0.33 ± 0.02	0.77 ± 3.06 ^c	0.54
SPD	spermidine	3	7.82	6 ± 1	42 ± 9	4.01
SPM	spermine	4	7.18	13 ± 2	80 ± 10	35.8
TET	triethylenetetramine	4	2.38	177 ± 2 ^d	2300 ± 200	1200
TEP	tetraethylenepentamine	5	1.88	174 ± 2 ^d	3100 ± 100	1830
Monoamines						
PIP	piperidine	1	11.24	0.24 ± 0.03	6 ± 4	0.0031
ET	ethylamine	1	10.63	0.212 ± 0.009	6 ± 1	0.014
IMI	imidazole	1	6.95	120 ± 10	490 ± 70	68
PYR	pyridine	1	5.63	174 ± 2 ^d	6000 ± 2000	550
Multiple Amine Concentrations						
2 × ET	ethylamine	1	10.63	0.30 ± 0.04	3 ± 4	0.030
4 × ET	ethylamine	1	10.63	0.20 ± 0.01	5 ± 1	0.072
2 × DB	1,4-diaminobutane	2	9.1	10.9 ± 0.5	111 ± 4	1.53
0.5 × TEP	tetraethylenepentamine	5	1.88	164 ± 1 ^d	1400 ± 500	1470
0.8 × TEP	tetraethylenepentamine	5	1.88	180 ± 1 ^d	4700 ± 200	915

^a Most acidic pK_a for polyamines and imidazole. ^b Conjugate base concentrations calculated based on published pK_a^{1,2} values using PHREEQC³. ^c The exceptionally large error of the sample is due to a significant amount of noise in the data, which made linear fits difficult. ^d Hydrolysis was mostly complete by the time the first data point was acquired, so the value was calculated using a starting concentration of 1.89 M (starting concentration based on the y intercept from other analyses) and the first point from this data set.

Table 2. Slopes and Correlation Coefficients for Figures

figure	data	slope	R ²	figure	data	slope	R ²
4a	log(k _{hyd}) vs amine number	0.8 ± 0.1	0.9416	5a	log(k _{hyd}) vs -log(B)	-0.60 ± 0.05	0.9612
4b	log(k _{cond}) vs amine number	0.8 ± 0.2	0.8625	5b	log(k _{cond}) vs -log(B)	-0.59 ± 0.08	0.9132

- (1) De Robertis, A.; Foti, C.; Giuffre, O.; Sammartano, S. *J. Chem. Eng. Data* **2001**, *46*, 1425.
- (2) De Stefano, C.; Foti, C.; Gianguzza, A.; Sammartano, S. *Anal. Chim. Acta* **2000**, *418*, 43.
- (3) Parkhurst, D. *User's guide to PHREEQC*; a computer program for speciation, reaction-path, advective-transport, and inverse geochemical calculations; U.S. Geological Survey: Lakewood, CO, 1995.

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