Dependence of amine-accelerated silicate condensation on amine structure

Supplementary Information

David B. Robinson, Judith L. Rognlien, Christina A. Bauer and Blake A. Simmons*

Sandia National Laboratories, 7011 East Avenue, Livermore, California 94550
Fig. S1. Partial titration curves of the diamines in Table 1, obtained by measuring pH of the 62.5 mM amine solutions after adding discrete amounts of 4 M hydrochloric acid from two different starting points (thus the zigzag in each curve). “E” indicates diaminooethane, “P” indicates diaminopropane, and the digits indicate the number of methyl groups on each amine. Lines are averages of the diamines grouped vertically in the legend, according to their number of tertiary amines.
Fig. S2. Reactivity of phosphate-buffered silicic acid induced by representative diamines at pH 6, as opposed to pH 7 for the data presented in Figures 2-7. The absorbances measured one day later for each curve (from top to bottom) are 3.11, 2.00, 0.48, and 0.23.
Fig. S3. Scanning electron micrograph of dried gel formed using DMAP Bz, showing texture comparable to those formed using P22 Bz and benzyl viologen.