

Supporting Information

Table S1. Fe(VI) Oxidation of thiocyanate in 0.0075 M phosphate at pH 9.2 determined under anaerobic conditions.

[SCN] 10 ⁻³ M	k ₁ 10 ⁻¹ s ⁻¹	[SCN] 10 ⁻³ M	k ₁ 10 ⁻¹ s ⁻¹	[SCN] 10 ⁻³ M	k ₁ 10 ⁻¹ s ⁻¹
<u>5 °C</u>		<u>15 °C</u>		<u>25 °C</u>	
2.18	0.19±0.01	19.8	2.55±0.10	1.92	0.35±0.01
5.44	0.42±0.01	33.0	4.94±0.11	3.20	0.49±0.01
13.6	1.04±0.01	55.0	7.18±0.16	5.34	0.87±0.01
34.0	2.58±0.02	91.6	12.0±0.92	6.60	1.36±0.03
85.0	5.72±0.06	153	17.3±0.39	8.90	1.62±0.01
142	10.5±0.23			16.5	2.66±0.04
236	16.8±0.11			22.2	3.66±0.03
				27.5	4.37±0.06
				45.8	5.87±0.11
				55.6	10.1±0.09
				76.4	12.8±0.06
				127	21.6±0.16
				212	34.6±0.70
k = 7.14 ± 0.11 M ⁻¹ s ⁻¹		k = 11.0 ± 0.69 M ⁻¹ s ⁻¹		k = 16.5 ± 0.30 M ⁻¹ s ⁻¹	
<u>35 °C</u>		<u>45 °C</u>			
16.8	4.40±0.03	7.70	3.37±0.07		
28.1	6.26±0.08	21.4	9.44±0.40		
46.8	11.4±0.25	59.4	25.5±0.53		
78.0	20.4±0.41	99.0	45.6±0.90		
217	53.1±0.14	198	87.4±0.32		
k = 24.6 ± 0.50 M ⁻¹ s ⁻¹		k = 44.4 ± 0.73 M ⁻¹ s ⁻¹			

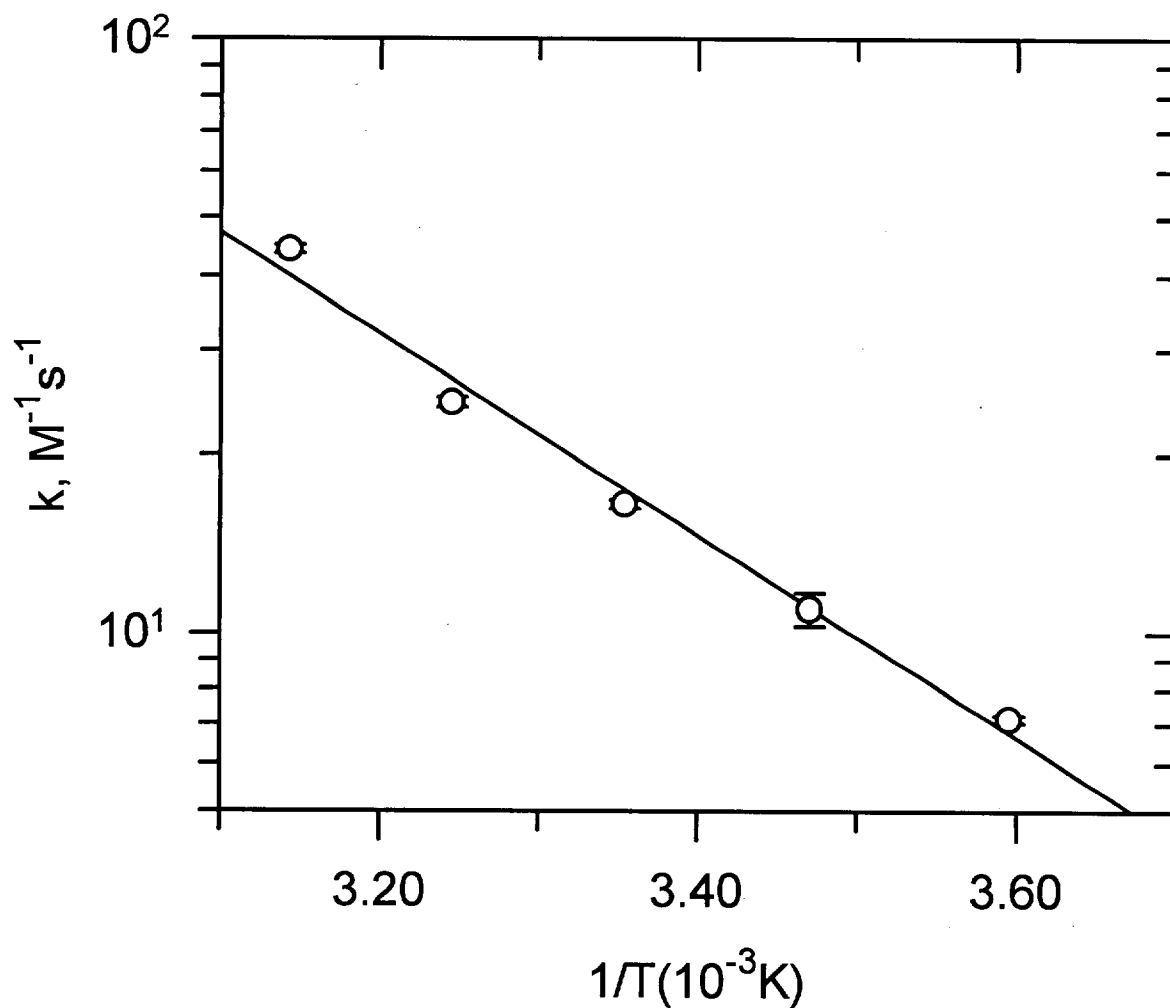


Figure S1. Activation energy plot for the oxidation of thiocyanate by Fe(VI) at pH 9.2.