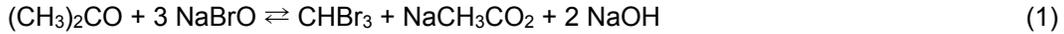


CE 329, Fall 2015
Assignment 13 Solution

Problem Statement

Suppose that the bromination of acetone using sodium hypobromite, equation (1) was studied using a 120 cm³ CSTR. Test the validity of the rate expression given in equation (2) and, if it is valid, determine the best value for the rate coefficient, k_2 using the data below.



$$r_2 = k_2 C_{(\text{CH}_3)_2\text{CO}} C_{\text{NaOH}} \quad (2)$$

C_{NaOH}^0 mM	$C_{(\text{CH}_3)_2\text{CO}}^0$ mM	C_{NaBrO}^0 mM	C_{NaOH} mM	\dot{V}^0 $\mu\text{L s}^{-1}$
1.930	1.593	6.35	4.259	37.10
1.930	1.593	6.35	4.249	37.17
1.665	1.50	6.6	4.354	19.62
1.665	1.50	6.6	4.370	19.60
1.665	1.50	6.6	4.368	19.65
2.410	1.048	8.4	4.119	28.27
2.410	1.048	8.4	4.115	28.55
2.124	1.599	6.4	4.129	56.42
2.124	1.599	6.4	4.176	55.20
1.980	1.492	6.94	2.911	169.05
1.980	1.492	6.94	2.914	169.77
2.666	1.649	5.92	4.151	125.83
2.666	1.649	5.92	4.095	126.35