**CHM 101A ASSIGNMENT 1**

Q. The rate of the following reaction in aqueous solution is monitored by measuring the number of moles of Hg2Cl2 that precipitate per liter per minute. The data obtained are listed in the table.

2 HgCl2(*aq*) + C2O42–(*aq*) → 2 Cl–(*aq*) + 2 CO2(*g*) + Hg2Cl2(*s*)

**Experiment [HgCl2] (M) [C2O42–] (M)Initial rate (mol L–1 min–1)**

1 0.105 0.15 1.8×10–5

2 0.105 0.15 1.8×10–5

3 0.052 0.30 7.1×10–5

4 0.052 0.15 8.9×10–6

a) Determine the order of reaction with respect to HgCl2, with respect to C2O42– and overall.

b) What is the value of the rate constant *k*?

c) What would be the initial rate of reaction if [HgCl2] = 0.094 M and [C2O42–] = 0.19 M?

d) Are all four experiments necessary to answer parts (a) - (c)? Explain.

**SOLUTIONS**

**NAME:**

**MATRIC NUMBER:**

**DEPAERTMENT:**

**FACULTY:**

**NOTE: Solve the question on the page and submit on the google classroom.**

**Mr. Kassim**