

## Lab 12 A - Investigating Chemical Equilibrium

**Purpose:** The purpose of this lab is to observe and record the shifts in equilibrium caused by changes in concentrations and temperature.

**Chemical:**

Part 1: Equilibrium involving Chromium(VI) Ions:

Table 1

Reagent added	Reagent	Color change and no. of drops required	Direction of Equilibrium shift
NaCl (step 1)	no	yellow (2)	products
Silver NO <sub>3</sub> (step 2)	no	yellow (2)	products
NaOH (step 3)	200	green (200)	reactants
Silver NaOH (step 4)	200	blue (240)	reactants

Part 2: Equilibrium involving Cobalt (II) Chloride

Table 2

Color of CoCl <sub>2</sub> · 6H <sub>2</sub> O	Light Purple	Color of CoCl <sub>2</sub> · 6H <sub>2</sub> O	Red
Reagent added	Reagent	Color Observation	Direction of Equilibrium shift
Step 1 (water added)	none	Red	reactants
Step 2 (acetone)	none	Deep Purple	products
Step 3 (acetone)	2000	light red, pinkish	reactants

Part 3: Equilibrium involving Chromate and Dichromate ions

Table 3

Step 1: 1. 1. and 2.	yellow color and NaOH added and HCl added	0.1 M K <sub>2</sub> CrO <sub>4</sub> yellow 0.1 M HCl orange	0.1 M K <sub>2</sub> CrO <sub>4</sub> orange yellow orange
Step 2		0.1 M K <sub>2</sub> CrO <sub>4</sub>	0.1 M K <sub>2</sub> CrO <sub>4</sub>

# Investigating Chemical Equilibrium Lab Report

**Albert A Gayle**



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