

Analytical Chemistry

Chapter 9

by

Wan Norfazilah Wan Ismail
Faculty of Industrial Sciences & Technology
norfazilah@ump.edu.my



Chapter Name

by Main Author's Name

<http://ocw.ump.edu.my/course/view.php?id=467>

Activity 9

1. Calculate pCl for titration of 100 mL of 0.1 M Cl^- with 0.1 M AgNO_3 for the addition of 0.00, 20.00, 99.00, 99.50, 100.00, 100.50 and 110.00 mL AgNO_3 . ($K_{sp} = 1.0 \times 10^{-10}$)
- a. At 0.00 mL
 - b. At 20.00 mL
 - c. At 99.00 mL
 - d. At 99.50 mL
 - e. At 100.00 mL, all the Cl^- is reacted with Ag^+
 - f. At 100.50 mL
 - g. At 110.00 mL, all the Cl^- is reacted with Ag^+



Chapter Name

by Main Author's Name

<http://ocw.ump.edu.my/course/view.php?id=467>

Activity 9

2. 20.00 mL of a silver nitrate solution requires 17.25 mL of a potassium thiocyanate solution to reach the iron(III) endpoint. When 0.1350 g of NaCl is treated with 20.00 mL of this silver solution and the AgCl formed is removed, only 2.50 mL of the thiocyanate solution is required. A 0.2550 g sample of an unknown containing chloride, following treatment with 20.00 mL of the silver solution and removal of the precipitate, requires 12.50 mL of thiocyanate to reach the iron(III) endpoint. Calculate the percent chloride in the unknown.



Chapter Name

by Main Author's Name

<http://ocw.ump.edu.my/course/view.php?id=467>

Activity 9

3. Suppose that it is desired to perform Mohr titrations using thallium as a titrant instead of silver. Which of chloride, bromide and/or iodide would it be possible to determine using chromate as indicator? Assume that each halide is originally present at 0.200 M, K_2CrO_4 is added to the titrate at a concentration about 0.02 M in the vicinity of the endpoint, thallium chromate (Tl_2CrO_4) is highly colored and the thallium halide precipitates are not.



Chapter Name

by Main Author's Name

<http://ocw.ump.edu.my/course/view.php?id=467>

Author Information

Wan Norfazilah Wan Ismail

Industrial Chemistry Programme
Faculty of Industrial Sciences & Technology
Universiti Malaysia Pahang



Chapter Name

by Main Author's Name

<http://ocw.ump.edu.my/course/view.php?id=467>