

7. A sample of a saturated solution of MgF_2 was evaporated and the following data table was constructed:

Mass of empty evaporating dish	78.5418 g
Mass of evaporating dish and MgF_2 residue after evaporation	78.5434 g
Volume of saturated MgF_2	100.00 mL
Temperature	25.0 °C

Use this data to calculate the value of K_{sp} for MgF_2 at 25 °C. Show all of your steps clearly.

8. Calculate the $[\text{Ag}^+]$ required to just start precipitation of Ag_2CO_3 in a 0.0030 M solution of $(\text{NH}_4)_2\text{CO}_3$.
9. A solution is prepared by mixing 20.0 mL of 0.60 M Na_2SO_4 with 60.0 mL of 1.1 M NaOH . Calculate the $[\text{Na}^+]$ in the final mixture.

10. The molar solubility of nickel (II) sulphide is 3.317×10^{-11} M. Calculate the value of the solubility product for nickel (II) sulphide. Show all of your work clearly.
11. A solution of potassium chloride is titrated with 0.200 M silver nitrate solution. The following data table was obtained:

	Trial 1	Trial 2	Trial 3
Initial AgNO ₃ burette reading (mL)	0.00	5.26	14.63
Final AgNO ₃ burette reading (mL)	5.26	12.19	19.87
Volume of KCl titrated	25.0	25.0	25.0

Use the information in the data table to calculate the [Cl⁻] in the KCl solution. Show all of your work clearly.