

CHAPTER SEVEN

Solubility

7.80 Define solute, solvent, and solution by describing the process of dissolving a solid in a liquid.

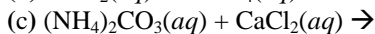
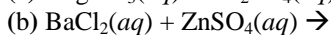
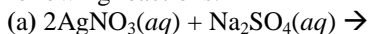
7.81 What is the difference between an ionic equation and a molecular equation?

7.82 What is the advantage of writing net ionic equations?

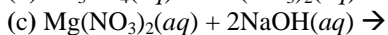
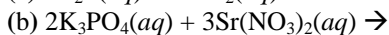
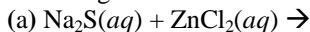
7.83 Characterize the following compounds as soluble or insoluble in water: (a) $\text{Ca}_3(\text{PO}_4)_2$, (b) $\text{Mn}(\text{OH})_2$, (c) AgClO_3 , (d) K_2S .

7.84 Characterize the following compounds as soluble or insoluble in water: (a) CaCO_3 , (b) ZnSO_4 , (c) $\text{Hg}(\text{NO}_3)_2$, (d) HgSO_4 , (e) NH_4ClO_4 .

7.85 Write ionic and net ionic equations for the following reactions:



7.86 Write ionic and net ionic equations for the following reactions:



7.87 Which of the following processes will likely result in a precipitation reaction? (a) Mixing a NaNO_3 solution with a CuSO_4 solution. (b) Mixing a BaCl_2 solution with a K_2SO_4 solution. Write a net ionic equation for the precipitation reaction.

7.88 With reference to Table 4.2, suggest one method by which you might separate (a) K^+ from Ag^+ , (b) Ag^+ from Pb^{2+} , (c) NH_4^+ from Ca^{2+} , (d) Ba^{2+} from Cu^{2+} . All cations are assumed to be in aqueous solution, and the common anion is the nitrate ion.