Chapter 4 — Problem 10

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October 5, 2020

- 10. Write a net ionic equation for any precipitation reaction that occurs when 1[M] solutions of the following are mixed:
 - (a) Na_3PO_4 and $BaCl_2$ (1)

$$3 \operatorname{Ba}^{2+}(\operatorname{aq}) + 2 \operatorname{PO_4}^{3-}(\operatorname{aq}) \longrightarrow \operatorname{Ba_3}(\operatorname{PO_4})_2(\operatorname{s}) \tag{1}$$

(b) $ZnSO_4$ and KOH (2)

$$\operatorname{Zn}^{2+}(\operatorname{aq}) + 2\operatorname{OH}^{-}(\operatorname{aq}) \longrightarrow 2\operatorname{ZnOH}(\operatorname{s})$$
 (2)

(c) $(NH_4)_2SO_4$ and NaCl (3)

No reaction because neither Ammonium nor Sulfate are soluble (3)

(d) $Co(NO_3)_3$ and Na_3PO_4 (4)

$$\operatorname{Co}^{3+}(\operatorname{aq}) + \operatorname{SO_4}^{3-}(\operatorname{aq}) \longrightarrow \operatorname{CoPO_4}(\operatorname{s})$$
 (4)