

CH1020 Exercises (Worksheet 7)

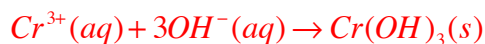
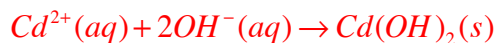
1. Determine whether each compound is soluble or insoluble. For the soluble compounds, list the ions present in solution

- a. AgNO_3 soluble; $\text{Ag}^+(\text{aq})$, $\text{NO}_3^-(\text{aq})$
- b. KNO_3 soluble; $\text{K}^+(\text{aq})$, $\text{NO}_3^-(\text{aq})$
- c. $(\text{NH}_4)_2\text{S}$ soluble; $\text{NH}_4^+(\text{aq})$, $\text{S}^{2-}(\text{aq})$
- d. AgI insoluble
- e. K_3PO_4 soluble; $\text{K}^+(\text{aq})$, $\text{PO}_4^{3-}(\text{aq})$
- f. $\text{Cu}_3(\text{PO}_4)_2$ insoluble
- g. CoCO_3 insoluble
- h. LiOH soluble; $\text{Li}^+(\text{aq})$, $\text{OH}^-(\text{aq})$
- i. CaCO_3 insoluble
- j. PbSO_4 insoluble
- k. $(\text{NH}_4)_3\text{PO}_4$ soluble; $\text{NH}_4^+(\text{aq})$, $\text{PO}_4^{3-}(\text{aq})$
- l. Fe_2S_3 insoluble

2. Complete and balance each equation. If no reaction occurs, write "No Reaction".

- a. $\text{NaNO}_3(\text{aq}) + \text{KCl}(\text{aq}) \rightarrow \text{No Reaction}$
- b. $2\text{NaCl}(\text{aq}) + \text{Hg}_2(\text{CH}_3\text{CO}_2)_2(\text{aq}) \rightarrow 2\text{NaCH}_3\text{CO}_2(\text{aq}) + \text{Hg}_2\text{Cl}_2(\text{s})$
- c. $(\text{NH}_4)_2\text{SO}_4(\text{aq}) + \text{SrCl}_2(\text{aq}) \rightarrow 2\text{NH}_4\text{Cl}(\text{aq}) + \text{SrSO}_4(\text{s})$
- d. $3\text{NaOH}(\text{aq}) + \text{FeCl}_3(\text{aq}) \rightarrow 3\text{NaCl}(\text{aq}) + \text{Fe}(\text{OH})_3(\text{s})$

3. Show with appropriate net ionic reactions how Cr^{3+} and Cd^{2+} can be removed from wastewater by treatment with solutions of sodium hydroxide.



4. Write balanced complete ionic and net ionic equations for each reaction

