

Schrijf de volledige reactievergelijkingen en de essentiële ionaire vergelijkingen voor:

- a) $\text{ZnS} + \text{HCl}$
- b) $\text{Na}_2\text{SO}_3 + \text{HCl}$
- c) $\text{Na}_2\text{SO}_4 + \text{Ba}(\text{OH})_2$
- d) $\text{Pb}(\text{NO}_3)_2 + \text{MgSO}_4$
- e) $\text{Fe}_2(\text{CO}_3)_3 + \text{HNO}_3$
- f) $\text{BaS} + \text{ZnSO}_4$
- g) $\text{ZnSO}_4 + \text{K}_2\text{S}$

Oplossing

- a) $\text{ZnS}(\text{v}) + 2 \text{HCl}(\text{aq}) \rightarrow \text{ZnCl}_2(\text{aq}) + \text{H}_2\text{S}(\text{g})$
 $\text{ZnS}(\text{v}) + 2 \text{H}^+(\text{aq}) \rightarrow \text{Zn}^{2+}(\text{aq}) + \text{H}_2\text{S}(\text{g})$
- b) $\text{Na}_2\text{SO}_3(\text{aq}) + 2 \text{HCl}(\text{aq}) \rightarrow 2 \text{NaCl}(\text{aq}) + \text{H}_2\text{O}(\text{vl}) + \text{SO}_2(\text{g})$
 $\text{SO}_3^{2-}(\text{aq}) + 2 \text{H}^+(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{vl}) + \text{SO}_2(\text{g})$
- c) $\text{Na}_2\text{SO}_4(\text{aq}) + \text{Ba}(\text{OH})_2(\text{aq}) \rightarrow \text{BaSO}_4(\text{v}) + 2 \text{NaOH}(\text{aq})$
 $\text{SO}_4^{2-}(\text{aq}) + \text{Ba}^{2+}(\text{aq}) \rightarrow \text{BaSO}_4(\text{v})$
- d) $\text{Pb}(\text{NO}_3)_2(\text{aq}) + \text{MgSO}_4(\text{aq}) \rightarrow \text{Mg}(\text{NO}_3)_2(\text{aq}) + \text{PbSO}_4(\text{v})$
 $\text{Pb}^{2+}(\text{aq}) + \text{SO}_4^{2-}(\text{aq}) \rightarrow \text{PbSO}_4(\text{v})$
- e) $\text{Fe}_2(\text{CO}_3)_3(\text{aq}) + 6 \text{HNO}_3(\text{aq}) \rightarrow 2 \text{Fe}(\text{NO}_3)_3(\text{aq}) + 3 \text{H}_2\text{O}(\text{vl}) + 3 \text{CO}_2(\text{g})$
 $3 \text{CO}_3^{2-}(\text{aq}) + 6 \text{H}^+(\text{aq}) \rightarrow 3 \text{H}_2\text{O}(\text{vl}) + 3 \text{CO}_2(\text{g})$
- f) $\text{BaS}(\text{aq}) + \text{ZnSO}_4(\text{aq}) \rightarrow \text{BaSO}_4(\text{v}) + \text{ZnS}(\text{v})$
 $\text{Ba}^{2+}(\text{aq}) + \text{S}^{2-}(\text{aq}) + \text{Zn}^{2+} + \text{SO}_4^{2-}(\text{aq}) \rightarrow \text{BaSO}_4(\text{v}) + \text{ZnS}(\text{v})$
- g) $\text{ZnSO}_4(\text{aq}) + \text{K}_2\text{S}(\text{aq}) \rightarrow \text{ZnS}(\text{v}) + \text{K}_2\text{SO}_4(\text{aq})$
 $\text{Zn}^{2+}(\text{aq}) + \text{S}^{2-}(\text{aq}) \rightarrow \text{ZnS}(\text{v})$