

ESCOLA SECUNDÁRIA JOSÉ SARAMAGO

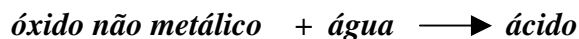
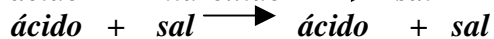
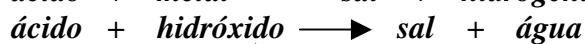
Proposta de Resolução da Ficha de Trabalho

Química

11.º/ 12º Ano

Tema: Equações químicas

Previsão da natureza dos produtos de reacção de algumas reacções simples:



Complete e acerte os seguintes esquemas químicos.

1. Acção de ácidos sobre metais

- $\text{Zn(s)} + 2 \text{HCl(aq)} \longrightarrow \text{ZnCl}_2(\text{aq}) + \text{H}_2(\text{g})$
- $2\text{Na(s)} + \text{H}_2\text{SO}_4(\text{aq}) \longrightarrow \text{Na}_2\text{SO}_4(\text{aq}) + \text{H}_2(\text{g})$
- $3\text{Al(s)} + 6\text{HCl(aq)} \longrightarrow 2\text{AlCl}_3(\text{aq}) + 3\text{H}_2(\text{g})$

2. Ácido-base (neutralização)

- $\text{NaOH(aq)} + \text{HCl(aq)} \longrightarrow \text{NaCl(aq)} + \text{H}_2\text{O(l)}$
- $\text{KOH(aq)} + \text{H}_2\text{SO}_4(\text{aq}) \longrightarrow \text{K}_2\text{SO}_4(\text{aq}) + \text{H}_2\text{O(l)}$
- $3\text{NH}_4\text{OH(aq)} + \text{H}_3\text{PO}_4(\text{aq}) \longrightarrow (\text{NH}_4)_3\text{PO}_4(\text{aq}) + 3\text{H}_2\text{O(l)}$

3. Acção de ácidos sobre sais

- $\text{CaCO}_3(\text{s}) + 2\text{HCl(aq)} \longrightarrow \text{CaCl}_2(\text{aq}) + \text{H}_2\text{CO}_3(\text{aq})$
Como o ácido carbónico é instável decompõe-se em $\text{CO}_2(\text{g})$ e $\text{H}_2\text{O(l)}$.

Reescreva a equação química:

- $\text{CaCO}_3(\text{s}) + 2\text{HCl(aq)} \longrightarrow \text{CaCl}_2(\text{aq}) + \text{H}_2\text{O(l)} + \text{CO}_2(\text{g})$
- $2\text{NaCl(s)} + \text{H}_2\text{SO}_4(\text{aq}) \longrightarrow \text{Na}_2\text{SO}_4(\text{aq}) + 2\text{HCl(aq)}$
- $\text{H}_3\text{PO}_4(\text{aq}) + 3\text{AgNO}_3(\text{aq}) \longrightarrow \text{Ag}_3\text{PO}_4(\text{s}) + 3\text{HNO}_3(\text{aq})$
- $\text{CH}_3\text{CO}_2\text{H(aq)} + \text{NaCN(s)} \longrightarrow \text{NaCH}_3\text{CO}_2(\text{aq}) + \text{HCN(aq)}$

4. Acção da água sobre óxidos metálicos e não metálicos

- $\text{Na}_2\text{O(s)} + \text{H}_2\text{O(l)} \longrightarrow 2\text{NaOH(aq)}$
- $\text{K}_2\text{O(s)} + \text{H}_2\text{O(l)} \longrightarrow 2\text{KOH(aq)}$
- $\text{SO}_3(\text{g}) + \text{H}_2\text{O(l)} \longrightarrow \text{H}_2\text{SO}_4(\text{aq})$

5. Acção da água sobre alguns metais

- $\text{Li(s)} + \text{H}_2\text{O(l)} \longrightarrow \text{LiOH(aq)} + \frac{1}{2} \text{H}_2\text{(g)}$
- $\text{Na(s)} + \text{H}_2\text{O(l)} \longrightarrow \text{NaOH(aq)} + \frac{1}{2} \text{H}_2\text{(g)}$
- $\text{Ba(s)} + 2 \text{H}_2\text{O(l)} \longrightarrow \text{Ba(OH)}_2\text{(aq)} + \text{H}_2\text{(g)}$
- $\text{Sr(s)} + 2 \text{H}_2\text{O(l)} \longrightarrow \text{Sr(OH)}_2\text{(aq)} + \text{H}_2\text{(g)}$

6. Decomposição térmica de carbonatos e hidrogenocarbonatos.

- $\text{CaCO}_3\text{(s)} \xrightarrow{\Delta} \text{CaO(s)} + \text{CO}_2\text{(g)}$
- $\text{MgCO}_3\text{(s)} \xrightarrow{\Delta} \text{MgO(s)} + \text{CO}_2\text{(g)}$
- $2 \text{AgHCO}_3\text{(s)} \xrightarrow{\Delta} \text{Ag}_2\text{CO}_3\text{(s)} + \text{CO}_2\text{(g)} + \text{H}_2\text{O(g)}$
- $\text{Ba(HCO}_3)_2\text{(s)} \xrightarrow{\Delta} \text{BaCO}_3\text{(s)} + \text{CO}_2\text{(g)} + \text{H}_2\text{O(g)}$

7. Combustão

- $\text{Ca(s)} + \text{O}_2\text{(g)} \longrightarrow 2 \text{CaO(s)}$
- $\text{C(s)} + \text{O}_2\text{(g)} \longrightarrow \text{CO}_2\text{(g)}$
- $\text{C}_4\text{H}_{10}\text{(g)} + \frac{13}{2} \text{O}_2\text{(g)} \longrightarrow 4 \text{CO}_2\text{(g)} + 5 \text{H}_2\text{O(g)}$
- $\text{SO}_2\text{(g)} + \frac{1}{2} \text{O}_2\text{(g)} \longrightarrow \text{SO}_3\text{(g)}$

8. Dissociação

- $\text{Al(NO}_3)_3\text{(s)} \xrightarrow{\text{H}_2\text{O}} \text{Al}^{3+}\text{(aq)} + 3 \text{NO}_3^-\text{(aq)}$
- $\text{Na}_2\text{SO}_4\text{(s)} \xrightarrow{\text{H}_2\text{O}} 2 \text{Na}^+\text{(aq)} + \text{SO}_4^{2-}\text{(aq)}$
- $\text{NH}_4\text{CH}_3\text{CO}_2\text{(s)} \xrightarrow{\text{H}_2\text{O}} \text{NH}_4^+\text{(aq)} + \text{CH}_3\text{CO}_2^-\text{(aq)}$
- $\text{KOH(s)} \xrightarrow{\text{H}_2\text{O}} \text{K}^+\text{(aq)} + \text{OH}^-\text{(aq)}$

9. Precipitação

- $\text{AgNO}_3\text{(aq)} + \text{NaCl(aq)} \longrightarrow \text{NaNO}_3\text{(aq)} + \text{AgCl(s)}$
- $3 \text{KOH(aq)} + \text{Al(NO}_3)_3\text{(aq)} \longrightarrow 3 \text{KNO}_3\text{(aq)} + \text{Al(OH)}_3\text{(s)}$
- $(\text{NH}_4)_2\text{S(aq)} + \text{Pb(ClO}_4)_2\text{(aq)} \longrightarrow \text{PbS(s)} + 2 \text{NH}_4\text{ClO}_4\text{(aq)}$
- enunciado incompleto