

Unknown Carbonate Pre-lab

Chris Agrella

10/20/2021

q1

a

- Unbalanced: $\text{Li}_2\text{CO}_3 + \text{HCl} \longrightarrow \text{LiCl} + \text{CO}_2 + \text{H}_2\text{O}$
- $\text{Li}_2\text{CO}_3 + 2 \text{HCl} \longrightarrow 2 \text{LiCl} + \text{CO}_2 + \text{H}_2\text{O}$

b

- Unbalanced: $(\text{K}_2\text{CO}_3 \cdot \frac{1}{2} \text{H}_2\text{O}) + \text{HCl} \longrightarrow \text{KCl} + \text{CO}_2 + \text{H}_2\text{O}$
- $2 (\text{K}_2\text{CO}_3 \cdot \frac{1}{2} \text{H}_2\text{O}) + 4 \text{HCl} \longrightarrow 4 \text{KCl} + 2 \text{CO}_2 + 3 \text{H}_2\text{O}$

c

- $\text{NaHCO}_3 + \text{HCl} \longrightarrow \text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$

d

- Unbalanced: $\text{Na}_2\text{CO}_3 + \text{HCl} \longrightarrow \text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$
- $\text{Na}_2\text{CO}_3 + 2 \text{HCl} \longrightarrow 2 \text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$

q2

- Unbalanced: $\text{BaCO}_3 + \text{HCl} \longrightarrow \text{BaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$
- $\text{BaCO}_3 + 2 \text{HCl} \longrightarrow \text{BaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$
- $0.4440g \text{ BaCO}_3 \cdot \frac{1\text{mol BaCO}_3}{197.34g/\text{mol BaCO}_3} \cdot \frac{1\text{mol BaCl}_2}{1\text{mol BaCO}_3} \cdot \frac{208.23g/\text{mol BaCl}_2}{1\text{mol BaCl}_2} = 0.4685g \text{ BaCl}_2$