

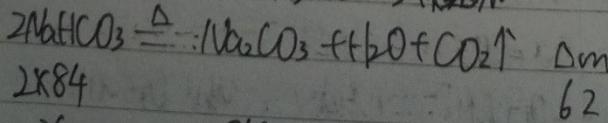
十字交叉法

* 为了检验某含有 NaHCO_3 杂质的 Na_2CO_3 样品的纯度, 现将 $m_1 \text{g}$ 样品加热, 其质量变为 $m_2 \text{g}$, 则该样品的纯度 (质量分数) 是 () P11

- A. $\frac{84m_2 - 53m_1}{31m_1} \times 100\%$ B. $\frac{84(m_1 - m_2)}{31m_1} \times 100\%$
 C. $\frac{73m_2 - 42m_1}{31m_1} \times 100\%$ D. $\frac{115m_2 - 84m_1}{31m_1} \times 100\%$

正解: A

解析方法一: 设样品中含 NaHCO_3 质量为 x .



2x84

62

$$x = \frac{84(m_1 - m_2)}{31}$$

$m_1 - m_2$

$$\therefore \text{Na}_2\text{CO}_3 \text{ 质量} = m_1 \text{g} - \frac{84(m_1 - m_2)}{31}$$

Date N

$$\therefore W = \frac{84m_2 - 53m_1}{31m_1}$$

方法二: $n(\text{Na}) = 2 \cdot \frac{m_1}{106}$ $n(\text{C}) = \frac{m_1}{106}$ NaHCO_3 Na_2CO_3

$$n(\text{C}) = \frac{m_1 - m_2}{62} \quad \therefore n(\text{C}) = \frac{m_2}{106} + \frac{m_1 - m_2}{106}$$

$$\therefore n(\text{NaHCO}_3) = \frac{m_2}{106} + \frac{m_1 - m_2}{106} \Rightarrow \text{十字交叉}$$