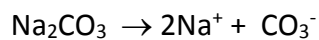


## Answer on Question #43192, Chemistry, Inorganic Chemistry

### Question:

25.3g of sodium carbonate,  $\text{Na}_2\text{CO}_3$  is dissolved in enough water to make 250ml of solution. If sodium carbonate dissociates completely, molar concentration of sodium ion,  $\text{Na}^+$  and carbonate ions are respectively?

### Solution:



$$n(\text{Na}_2\text{CO}_3) = n(\text{CO}_3^-) = m/M = 25.3/106 = 0.24 \text{ mole}$$

$$n(\text{Na}^+) = 2n(\text{Na}_2\text{CO}_3) = 2 \times 0.24 = 0.48 \text{ mole}$$

$$C(\text{CO}_3^-) = n/V = 0.24 \text{ mole} / 0.25 \text{ L} = 0.96 \text{ mole/L}$$

$$C(\text{Na}^+) = n/V = 0.48 \text{ mole} / 0.25 \text{ L} = 1.92 \text{ mole/L}$$

**Answer:** 1.92 mole/L and 0.96 mole/L of sodium ions and carbonate ions respectively.