

Answer on the question #42926, Chemistry, Other

Question:

calculate the molarity for 32 grams of NaCl dissolved in 250 mL H₂O

Solution:

The molar concentration c_i is defined as the amount of substance of the constituent n_i divided by the volume of the mixture:

$$c_i = \frac{n_i}{V}$$

$$n(\text{NaCl}) = \frac{m(\text{NaCl})}{M(\text{NaCl})} = \frac{32}{58,443} = 0.5475 \text{ mol}$$

$$c_i = \frac{0.5475}{0.25} = 2.19 \text{ mol L}^{-1}$$

Answer: 2.19 mol L⁻¹