

Answer on question #58777 - Chemistry - General Chemistry

Question:

0.35g FeSO₄ is dissolved to give 100 ml stock solution 25 ml of this stock solution in turn is diluted to 250ml calculate the [Fe²⁺] (mol/l)

Solution:

The mass of FeSO₄ in 25 ml of stock solution is:

$$m(\text{FeSO}_4) = 0.35 \text{ g} / 4 = 0.0875 \text{ g}$$

The amount of substance of FeSO₄ is:

$$n(\text{FeSO}_4) = 0.0875 \text{ g} / (152 \text{ g/mol}) = 0.000576 \text{ mol}$$

The concentration of FeSO₄ in 250 ml solution is:

$$C(\text{FeSO}_4) = n/V = 0.000576 \text{ mol} / 0.25 \text{ L} = 0.0023 \text{ mol/L}$$

The concentration of Fe²⁺ is 0.0023 mol/L

Answer:

The concentration of Fe²⁺ is 0.0023 mol/L