Answer on the question #48867, Chemistry, Other

Question:

0.35 g FeSO4 is dissolved to give 100 mL stock solution. 25 mL of this stock solution in turn is diluted to 250 mL. Calculate the [Fe2+] (mol/L) in the final solution.

Solution:

Let's calculate the concentration of the stock solution:

$$c\ (stock) = \frac{n(FeSO_4)}{V(st.sol.)} = \frac{m(FeSO_4)}{M(FeSO_4)V(st.sol.)} = \frac{0.35}{151,908 * 0.1} = 0.023 \frac{mol}{L}$$

Then the dilution of stock will produce:

$$c(Fe^{2+}) = \frac{c(stock)V(stock)}{V} = \frac{0.023 * 25}{250} = 2.3 * 10^{-3} \frac{mol}{L}$$

Answer: $2.3 * 10^{-3} \frac{mol}{L}$