

Answer on Question #59830, Chemistry / General Chemistry

1. The mass percent of an aqueous solution of Na_3PO_4 is 12.77%. The density of the solution is 1.04 g/mL. What is the molarity of the solution?

Solution:

$$C_M = \frac{\omega \times \rho \times 10}{M}$$

ω – mass percent

ρ – density

M – molar mass, $M(\text{Na}_3\text{PO}_4) = 164 \text{ g/mol}$

$$C_M = \frac{\omega \times \rho \times 10}{M} = \frac{12.77 \times 1.04 \times 10}{164} = 0.8 \text{ mol/L}$$

Answer: Molarity = 0.8 mol/L.