

Question # 77910, answer

You need 200mL of 2M H<sub>2</sub>SO<sub>4</sub> but they only supply available is concentrated H<sub>2</sub>SO<sub>4</sub> whose concentration is 18M. How will you prepare the solution?

Answer:

Use dilution equation  $M_1V_1 = M_2V_2$  to calculate the volume of 18M H<sub>2</sub>SO<sub>4</sub> solution:

$$2 \text{ mol/L} \times 0.2\text{L} = 18 \text{ mol/L} \times V_2; V_2 = 0.022 \text{ L} = 22 \text{ mL};$$

To prepare the desired solution take 22 mL of 18M H<sub>2</sub>SO<sub>4</sub> and bring it to 200 mL with water (using 200 mL graduated cylinder or add 178 mL of water to 22 mL of H<sub>2</sub>SO<sub>4</sub> solution)