

## Answer on Question #73597 – Chemistry – General Chemistry

### Task:

What is the molar concentration of a solution containing 10.0 g of NaOH in 250 mL of solution?

### Solution:

- 1) Calculate the number of moles of solute:

$$\text{Moles of NaOH} = 10.0 \text{ g NaOH} * \frac{1 \text{ mol NaOH}}{40.00 \text{ g NaOH}} = 0.25 \text{ mol NaOH}$$

- 2) Calculate the number of liters of solution:

$$\text{Volume} = 250 \text{ mL} * \frac{1 \text{ L}}{1000 \text{ mL}} = 0.25 \text{ L}$$

- 3) Calculate the molar concentration:

$$\text{Molarity} = \frac{n(\text{NaOH})}{V(\text{NaOH})} = \frac{0.25 \text{ mol}}{0.25 \text{ L}} = 1 \text{ mol/L} = 1 \text{ M}$$

**Answer:**  $C_m(\text{NaOH})=1\text{M}$ .