PRACTICE 6. PREPARING SOLUTIONS FROM A SOLID

Objectives :

- Learning the techniques to prepare solutions with defined concentrations.
- Learning how to handle laboratory equipment.

Material: Volumetric flask, beaker, dropper, spoon-spatula, watch glass, funnel, scale, stirring rod, Sodium Chloride (NaCl).

Procedure: Preparation of 250 mL of a Sodium Chloride (NaCl) solution with a concentration of 10 g/L.

1st - Calculate the quantity of Na needed:

Remember:

$$C = \frac{m_s(g)}{V_T(L)}$$

2nd - Weigh the empty volumetric flask:

$Mass_{Vol.Flask\ (empty)}$ = ……g

3rd - Weigh the quantity of NaCl previously calculated in a watch glass and add it to a certain quantity of water in a beaker. Stir until complete solution.

$Mass_{Solute}$ = ……g

4th - Transfer the previous solution to a volumetric flask (using the funnel).

5th - Rinse the beaker and the funnel, transfering the rinsing wáter to the flask.

6th - Make up to the mark with a dropper, avoiding the parallax error, and label the flask.

7th - Use the scale to determine the weight of the full volumetric flask.

$Mass_{Vol.\ Flask\ (full)}$ = ……g

Questions:

1) Identify solute and solvent of this solution, and the physical state of solvent, solute and solution.
2) Calculate:

   Mass of the solution = …… g

   Volume of the solution = …….. mL
3) Calculate the density of the solution and express in SI units.