Chapter 1: solubility

ACTIVITY 1 : Problem solving at the hospital

Problem

Theo, a nurse student needs to prepare a saline solution fit for nasal or eye rinsing. His solution should be equivalent to the over the counter solution proposed in document 1. The room temperature is 15°C. Here is the protocol he decides to follow:

1. Weigh out 9.0 g of salt.
2. Place the salt in a 1L volumetric flask
3. Add a small volume of distilled water to dissolve the salt.
4. Fill the flask to the 1L line, invert and swirl several times.

Will he manage to prepare the solution without any difficulties even though the temperature is a bit cold today?

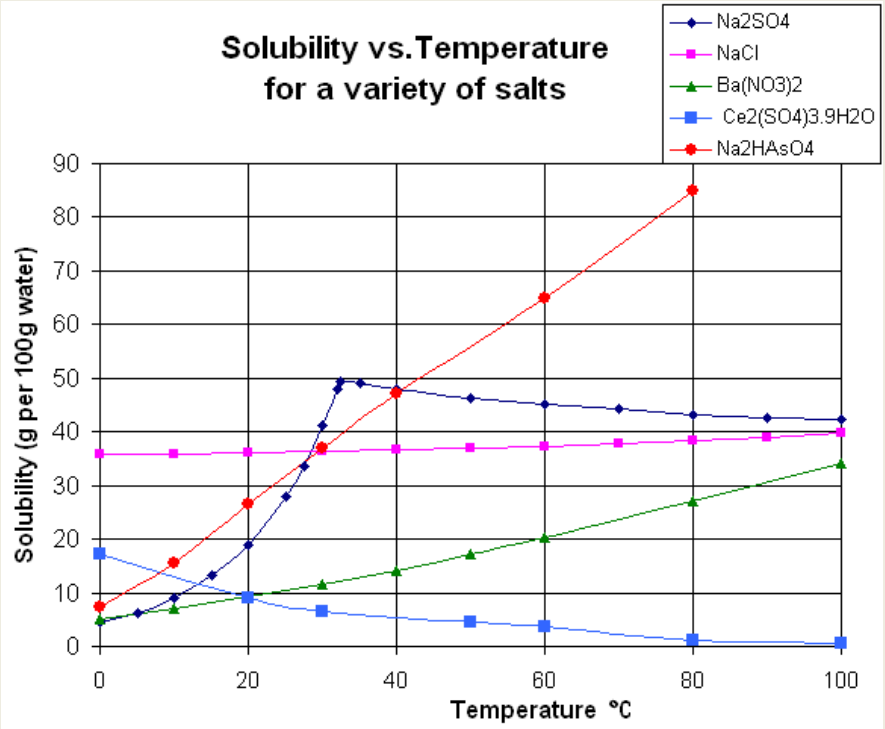
Molar mass of NaCl = 58.4 g/mol

DOCUMENT 1: Saline solution at 0,9% weight per volume

Source: https://www.dowa.co/content/images/thumbs/0000586_pic-sterile-saline-solution.jpeg

DOCUMENT 2: Solubility product

https://en.wikipedia.org/wiki/Solubility_equilibrium#/media/File:SolubilityVsTemperature.png



Activity summary

What you must remember:
- molarity
- volumetric flask
- percentage by weight (w/v)

Compétences	Capacités à maitriser
– APP	Exploiter des documents scientifiques
– ANA	Utiliser le produit de solubilité.
– REA	Prévoir l'influence de la température sur la solubilité d'une espèce chimique en exploitant des données.
– COM	Formuler et argumenter des réponses structurées Formuler et présenter une conclusion