

Polyjuice Potion at Hogwarts



Polynectar has to be prepared very carefully to be effective! This potion enables the drinker to physically transform into another person for a few hours...

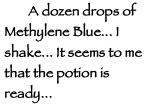
Into a big enough conical flask, introduce 6.0x10⁻² mol sodium hydroxide...

Strange Erlenmeyer!

I add 7 moles of water and 1.6x10⁻² moles of glucose powder...



I stir until the mixture is homogeneous. Let's see...











Oops! I must have forgotten something...
Could you help me make the potion again?

Chemical	Solid sodium hydroxide	Solid glucose	Water
Formula	NaOH	$C_6H_{12}O_6$	H ₂ O

Identifying soda hazards

Warning statement:

Danger

Hazard statements:

H290 May be corrosive to metals

H314 Causes severe skin burns and eye damage

<u>Note</u>

Density of water is $\rho = 1.0 \text{ g.mL}^{-1}$

Atomic molar masses

 $M(Na) = 23.0 \text{ g.mol}^{-1}$

 $M(O) = 16.0 \text{ g.mol}^{-1}$

 $M(H) = 1.00 \text{ g.mol}^{-1}$

 $M(C) = 12.0 \text{ g.mol}^{-1}$

- 1. Prepare the potion according to the safety instructions, then leave it to stand for a few moments... You'll need to stir it regularly for it to work effectively.
- 2. Determine mass concentrations of sodium hydroxide (t_{m1}) and of glucose (t_{m2}) in the potion.

Mass concentrations are measured in g.L⁻¹.

3. Determine molar concentrations of sodium hydroxide (C₁) and of glucose (C₂) in the potion. Molar concentrations are measured in mol.L⁻¹.

Note: When a solid is dissolved in a solvent, the change in volume of the solvent is negligible.