

LIUOKSEN VALMISTAMINEN

tiedossa on yleensä liuokselle haluttu konsentraatio ja liuokselle haluttu tilavuus

ESIM

Halutaan 100 ml suolaliuosta NaCl(aq), jonka konsentraatio on 0,237 mol/l

$$c = \frac{n}{V}$$

$$n = \frac{m}{M}$$

Handwritten diagram: A blue circle around the 'm' in the equation above, with an arrow pointing to a question mark. A blue arrow also points from the question mark down towards the next equation.

$$m = n \cdot M$$

Handwritten diagram: A green arrow points from the 'n' in the equation above down to the next equation.

$$n = c \cdot V$$

$$V(\text{liuos}) = 100 \text{ ml} = 0,100 \text{ l}$$

$$c(\text{NaCl}) = 0,237 \text{ mol/l}$$

$$M(\text{NaCl}) = 58,44 \text{ g/mol}$$

$$n(\text{NaCl}) = c \cdot V = 0,0237 \text{ mol}$$

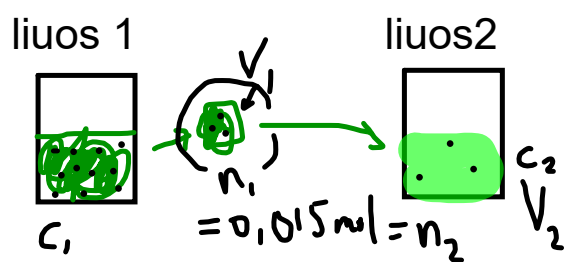
$$m(\text{NaCl}) = n \cdot M = 1,38503 \text{ g}$$

"Punnitaan mahdollisimman tarkasti 1,38503g ruokasuolaa, ja liuotetaan veteen 100 ml mittapullossa"

Liuoksen laimentaminen

$c = \frac{n}{V} \rightarrow n = c \cdot V$

liuos 1 liuos 2



The diagram illustrates the dilution process. On the left, a beaker labeled 'liuos 1' contains a green liquid with a concentration c_1 . A portion of this liquid, with volume V_1 and amount of substance n_1 , is being transferred to a second beaker labeled 'liuos 2'. The transferred amount is specified as $= 0,015 \text{ mol} = n_2$. The final solution in beaker 2 has a concentration c_2 and a total volume V_2 .

$n_1 = n_2$

$c_1 V_1 = c_2 V_2$

tehtävät s.45

2.31, 2.33, 2.34