

V vrtcu smo vzeli vzorec kosila. Določili bomo masni delež NaCl. Najprej pripravimo analizni vzorec. Zatehtamo 10 g homogeniziramega obroka v merilno bučko. Vzorec redčimo do 250 ml. Odpipetiramo 50 mL v erlenmajerico, dodamo indikator in titriramo z AgNO<sub>3</sub> do spremembe barve oborine. Pri titraciji smo porabili 170 mL AgNO<sub>3</sub>.

Izračunajte masni delež NaCl v vzorcu!  $M(\text{NaCl}) = 58.5 \text{ g/mol}$ ,  $c(\text{AgNO}_3) = 0.0988 \text{ mol/L}$



(vir: mag. Irena Štrumbelj Drusany, Živilska kemija z analizo živil, Laboratorijske vaje, BIC LJ, VSŠ, Ljubljana, 2014)

$$m(\text{vzorca}) = 10 \text{ g} + 250 \text{ g vode} = 260 \text{ g}$$

$$V(\text{vzorca}) = 250 \text{ mL} \rightarrow \text{aliquot } 50 \text{ mL} = 0,05 \text{ L}$$

$$V(\text{AgNO}_3) = 170 \text{ mL} = 0,17 \text{ L}$$

$$c(\text{AgNO}_3) = 0,0988 \frac{\text{mol}}{\text{L}}$$

$$M(\text{NaCl}) = 58,5 \frac{\text{g}}{\text{mol}}$$

---

**W(NaCl) = ?**

1.  $n(\text{NaCl}) = ?$

$$\frac{n(\text{NaCl})}{n(\text{AgNO}_3)} = \frac{1}{1} \rightarrow n(\text{NaCl}) = n(\text{AgNO}_3) \rightarrow \frac{m(\text{NaCl})}{M(\text{NaCl})} = c(\text{AgNO}_3) \times V(\text{AgNO}_3)$$

$$\boxed{m(\text{NaCl}) = c(\text{AgNO}_3) \times V(\text{AgNO}_3) \times M(\text{NaCl})}$$

$$m(\text{NaCl}) = 0,0988 \frac{\text{mol}}{\text{L}} \times 0,17 \text{ L} \times 58,5 \frac{\text{g}}{\text{mol}}$$

$$\underline{m(\text{NaCl}) = 0,9826 \text{ g}}$$

2.  $W(\text{NaCl}) = ?$

$$\boxed{W(\text{NaCl}) = \frac{m(\text{NaCl}) \times 5}{m(\text{vzorca})} \times 100}$$

$$W(\text{NaCl}) = \frac{4,913 \text{ g}}{260 \text{ g}} \times 100$$

$$\underline{W(\text{NaCl}) = 1,8896\%}$$