

448. Kolika je količinska koncentracija (mol/dm^3) koncentrovane hlorovodonične kiseline kod koje je maseni udeo $\omega=0,37$ a gustina $1,19\text{g/cm}^3$. (Cl-35,5)

$$Mr(\text{HCl}) = 36,5$$

$$M(\text{HCl}) = 36,5 \frac{\text{g}}{\text{mol}}$$

$$\omega = 0,37 = 37\%$$

$$37\text{g}(\text{HCl}) \rightarrow 100\text{g}(\text{rastvora})$$

$$m(\text{rastvora}) = 100\text{g}$$

$$\rho(\text{rastvora}) = 1,19 \frac{\text{g}}{\text{cm}^3}$$

$$\rho(\text{rastvora}) = \frac{m(\text{rastvora})}{V(\text{rastvora})}$$

$$V(\text{rastvora}) = \frac{m(\text{rastvora})}{\rho(\text{rastvora})}$$

$$V(\text{rastvora}) = 84\text{cm}^3$$

$$V(\text{rastvora}) = 0,084\text{dm}^3$$

$$m(\text{HCl}) = 37\text{g}$$

$$M(\text{HCl}) = 36,5 \frac{\text{g}}{\text{mol}}$$

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

$$n = 1,01\text{mol}$$

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

$$c = \frac{1,01\text{mol}}{0,084\text{dm}^3}$$

$$c = 12,02 \frac{\text{mol}}{\text{dm}^3}$$
