

6.1

The solubility of Potassium perchlorate in water at 20 °C is 1.73 g in 100 g of water and at 40 °C 3.63 g in 100 g of water. Determine the heat of solution.

6.2

5 g of an unknown substance give a reduction of the vapor pressure by 2.5% in 100 g of benzene. Calculate the molar mass of the unknown substance.

6.3

The freezing point of an aqueous solution containing 2.37 g of Na_2SO_4 in one liter of solution is -0.095°C . From this information, determine the number of particles into which a Na_2SO_4 molecule decomposes on dissociation.

6.4

Cyanic acid (HCN) has at room temperature a degree of dissociation $\alpha = 2.2 \cdot 10^{-5}$. Calculate the pK_S -Value.

6.5

Calculate the pH values of the following solutions:

0,003 M HCl

0,003 M H_2SO_4

2 M HCl

0,0005 M NaOH

10^{-9} M NaOH

0,003 M NaOH und 0,003 M H_2SO_4

0,003 M NaOH und 0,003 M HCl