

1 Phase change

homogeneous, inhomogeneous and heterogeneous systems; phase and phase equilibrium; Clapeyron equation, Clausius–Clapeyron equation; boiling point, melting point and triple point; change of boiling point with pressure (10 points)

Minor questions (10×1 points)

1 equation for the change of S at the formation of ideal mixtures

2 definition of chemical potential

3 definition of activity

4 Raoult's law

5 van't Hoff equation for the calculation of osmotic pressure

6 equation for the calculation of K_p from the standard reaction Gibbs function

7 definition of diffusion flux

8 Fick's 2nd law of diffusion

9 definition of surface tension

10 calculation of the half-life of a species consumed in a second order reaction