

$$p_1 = v_1 \frac{RT}{V} = \frac{M_1}{Mr_1} \frac{RT}{V} = \frac{M_1}{V} \frac{RT}{Mr_1} = \rho_1 \frac{RT}{Mr_1}$$

$$p_2 = v_2 \frac{RT}{V} = \frac{M_2}{Mr_2} \frac{RT}{V} = \frac{M_2}{V} \frac{RT}{Mr_2} = \rho_2 \frac{RT}{Mr_2}$$

$$p_1 + p_2 = p_0$$

$$\rho_1 + \rho_2 = \rho$$

$$\rho_2 = \rho - \rho_1$$

$$\rho_1 \frac{RT}{Mr_1} + \rho_2 \frac{RT}{Mr_2} = p_0$$

$$\rho_1 \frac{RT}{Mr_1} + (\rho - \rho_1) \frac{RT}{Mr_2} = p_0$$

$$\rho_1 \left(\frac{RT}{Mr_1} - \frac{RT}{Mr_2} \right) + \rho \frac{RT}{Mr_2} = p_0$$

$$\rho_1 = \frac{p_0 - \rho \frac{RT}{Mr_2}}{\frac{RT}{Mr_1} - \frac{RT}{Mr_2}} = \frac{\frac{p_0}{RT} - \rho \frac{1}{Mr_2}}{\frac{1}{Mr_1} - \frac{1}{Mr_2}} = \frac{\frac{p_0 Mr_2}{RT} - \rho}{\frac{Mr_2}{Mr_1} - 1}$$

$$n_1 = \frac{N_1}{V} = \frac{M_1}{Mr_1} \frac{N_a}{V} = \rho_1 \frac{N_a}{Mr_1} = N_a \frac{\frac{p_0 Mr_2}{RT} - \rho}{Mr_2 - Mr_1} = N_a \frac{\frac{Mr_2}{V_0} - \rho}{Mr_2 - Mr_1} = 1,63\text{E} + 25$$