$$E = hf$$

$$\tilde{\nu} = \frac{1}{\lambda} = \frac{f}{c}$$

$$T = \frac{1}{f}$$

$$\lambda = \frac{h}{p} = \frac{h}{mv}$$

$$E_k = \frac{1}{2} m_e v^2$$

$$\tilde{\nu} = R_H \left(\frac{1}{n_j^2} - \frac{1}{n_i^2} \right)$$

$$-log T_\lambda = A_\lambda = \varepsilon_\lambda \cdot c \cdot l$$

$$T_\lambda = \frac{I_\lambda}{I_{0,\lambda}}$$

$$pV = nRT$$

$$\left(p + \frac{a}{V_m^2} \right) (V_m - b) = RT$$

$$z = \frac{V_m}{V_m^0} = \frac{V_m}{\frac{RT}{p}} = \frac{p \cdot V_m}{R \cdot T}$$

$$F\eta = 6\pi\eta r v$$

$$\frac{\eta_1}{\eta_2} = \frac{t_1}{t_2} \frac{\rho_1}{\rho_2}$$

$$W = -\int_{V_1}^{V_2} p \cdot dV$$

$$W = -nRTln\left(\frac{V_2}{V_1}\right)$$

$$W = -p(V_2 - V_1)$$

$$\Delta U = Q + W$$

$$H = U + pV$$

$$C_V = \left(\frac{\partial U}{\partial T} \right)_V$$

$$C_p = \left(\frac{\partial H}{\partial T} \right)_p$$

$$Q_V = \int_{T_1}^{T_2} C_V dT = \int_{T_1}^{T_2} n c_V dT$$

$$Q_p = \int_{T_1}^{T_2} C_p dT = \int_{T_1}^{T_2} n c_p dT$$

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

$$c_p - c_V = R$$

$$\mathrm{pV}^\kappa = \text{konst.}, \text{ tj. } \quad p_1 V_1^\kappa = p_2 V_2^\kappa$$

$$T_1 V_1^{\kappa - 1} = T_2 V_2^{\kappa - 1}$$

$$T_1 p_1^{\frac{1-\kappa}{\kappa}} = T_2 p_2^{\frac{1-\kappa}{\kappa}}$$

$$\kappa = \frac{c_p}{c_V}$$

$$\Delta_r H^\emptyset = \sum_{prod} \nu_i \Delta_{sluč} H(i) - \sum_{reakt} \nu_i \Delta_{sluč} H(i)$$

$$\Delta_r H^\emptyset = \sum_{reakt} \nu_i \Delta_{sp} H(i) - \sum_{prod} \nu_i \Delta_{sp} H(i)$$

$$\Delta_\mathrm{r} G^\emptyset = \Delta_\mathrm{r} H^\emptyset - T \Delta_\mathrm{r} S^\emptyset$$

$$\Delta_r H^\circ(T_2) = \Delta_r H^\circ(T_1) + \int_{T_1}^{T_2} \Delta c_p dT$$

$$\Delta S = n \int_{T_1}^{T_2} \frac{c_p}{T} dT - \int_{p_1}^{p_2} \left(\frac{\partial V}{\partial T} \right)_p dp$$

$$\Delta S = n \int_{T_1}^{T_2} \frac{c_V}{T} dT + n \int_{V_1}^{V_2} \left(\frac{\partial p}{\partial T} \right)_V dV$$

$$\Delta S = n c_p \, ln \frac{T_2}{T_1} - nRln \frac{p_2}{p_1}$$

$$\Delta S = n c_V \, ln \frac{T_2}{T_1} + nRln \frac{V_2}{V_1}$$

$$\Delta_r G^\ominus = -RT \, ln \, K$$

$$\ln\left(\frac{K_2}{K_1}\right) = \frac{\Delta H^\emptyset}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right)$$

$$K = \frac{\left(\frac{p_C}{p^\ominus}\right)^c \left(\frac{p_D}{p^\ominus}\right)^d}{\left(\frac{p_A}{p^\ominus}\right)^a \left(\frac{p_B}{p^\ominus}\right)^b} = \frac{{p_C}^c {p_D}^d}{{p_A}^a {p_B}^b} \cdot \left(\frac{1}{p^\ominus}\right)^{\Delta\nu} == \frac{{x_C}^c {x_D}^d}{{x_A}^a {x_B}^b} \cdot \left(\frac{p}{p^\ominus}\right)^{\Delta\nu} = K_x \left(\frac{p}{p^\ominus}\right)^{\Delta\nu}$$

$$K = \frac{n_C^c \cdot n_D^d}{n_A^a \cdot n_B^b} \cdot \left(\frac{\frac{p}{p^\emptyset}}{\sum n} \right)^{\Delta\nu}$$

$$\Delta\nu = (c + d) - (a + b)$$

$$c_A = c_{A0} \cdot e^{-kt}$$

$$t_{\frac{1}{2}} = \frac{ln2}{k}$$

$$\ln\left(\frac{k_1}{k_2}\right) = \frac{E_A}{R} \left(\frac{1}{T_2} - \frac{1}{T_1} \right)$$

$$\boldsymbol{k = \left(\frac{k_B T}{h}\right) e^{-\frac{\Delta G^\ddagger}{RT}}} \qquad \boldsymbol{\Delta G^\ddagger = \Delta H^\ddagger - T \Delta S^\ddagger}$$

$$\int \big(f(x) + g(x) \big) \mathrm{d}x = \int f(x) \mathrm{d}x + \int g(x) \mathrm{d}x$$

$$\int c \cdot f(x) \mathrm{d}x = c \cdot \int f(x) \mathrm{d}x \,, \; c = konst.$$

$$\int x^n \mathrm{d}x = \frac{x^{n+1}}{n+1} + C$$

$$\int \frac{1}{x} \mathrm{d}x = \ln |x| + C$$

$$\int_a^b f(x) \mathrm{d}x = [F(x) \mathrm{d}x]_a^b = F(b) - F(a)$$

$1 \text{ eV} = 1.602 \cdot 10^{-19} \text{ J}$; $m_e = 9.11 \cdot 10^{-31} \, kg$; $\mathrm{R_H} = 109\,677.57 \mathrm{cm}^{-1}$

$h = 6.626 \cdot 10^{-34} J \cdot s$; $c = 3 \cdot 10^8 m/s$; $R = 8.314 \, J \cdot mol^{-1} \cdot K^{-1}$