

Karta wzorów

$$pV = nRT$$

$$\left[p + a \left(\frac{n}{V} \right)^2 \right] (V - bn) = nRT$$

$$2 \pi r \sigma = \pi r^2 h d g$$

$$\frac{\eta_1}{\eta_2} = \frac{t_1 \times d_1}{t_2 \times d_2} \quad P = V \sigma^{\frac{1}{4}}$$

$$W_{\text{obj}} = -p_{\text{prac}} \Delta V$$

$$dS = \frac{Q_{\text{odwr}}}{T}$$

$$W_{\text{obj}} = -nRT \ln \frac{V_2}{V_1}$$

$$\Delta S_{p.t.} = \frac{\Delta H_{p.f.}}{T_{p.f.}}$$

$$\Delta U = Q + W$$

$$C_p = \frac{\Delta H}{\Delta T}$$

$$\Delta H_r^o = \sum \Delta H_{tw,prod}^o - \sum \Delta H_{tw,substr}^o$$

$$C_p = n \cdot C_{p,m}$$

$$\Delta S_r^o = \sum \Delta HS_{tw,prod}^o - \sum \Delta S_{tw,substr}^o$$

$$\Delta S = nR \ln \frac{V_2}{V_1}$$

$$\Delta G_r^o = \sum \Delta G_{tw,prod}^o - \sum \Delta G_{tw,substr}^o$$

$$W_{\text{obj}} = \frac{p_2 V_2 - p_1 V_1}{k - 1}$$

$$\Delta G = \Delta H - T \Delta S$$

$$W = U I t$$

$$v = \frac{S}{t} \quad \mu = \frac{v}{E}$$

$$\frac{dp}{dT} = \frac{\Delta H_{p.f.}}{T \Delta V} \quad p_2 - p_1 = \frac{\Delta H_{\text{topn}}}{\Delta V} \ln \frac{T_2}{T_1}$$

$$\ln k = \ln A - \frac{E_a}{RT}$$

$$\ln \frac{p_2}{p_1} = \frac{\Delta H_{p.f.}}{R} \left(\frac{T_2 - T_1}{T_1 T_2} \right)$$

$$\Delta G = nRT \ln \frac{p_2}{p_1}$$

$$\frac{p_{\text{H}_2\text{O}}^0}{p_{\text{B}}^0} = \frac{m_{\text{H}_2\text{O}} \cdot M_{\text{B}}}{m_{\text{B}} \cdot M_{\text{H}_2\text{O}}}$$

$$p = p_a + p_b$$

$$p_A = X_A H$$

$$p_i = p \cdot X_i$$

$$\ln \frac{K_2}{K_1} = \frac{\Delta H_r}{R} \left(\frac{T_2 - T_1}{T_1 T_2} \right)$$

$$\pi = c \cdot R \cdot T$$

$$\Delta p = p_{rozp}^0 X_s$$

$$K = \frac{\alpha^2 C}{1 - \alpha}$$

$$K = \alpha^2 C$$

$$M^* D \left(1 - \bar{V} \rho_o \right) = RTs$$

$$\bar{x} = \sqrt{2Dt}$$

$$\Gamma = -\frac{c}{RT} \left(\frac{d\sigma}{dc} \right)$$

$$\xi^* \varepsilon = \mu^* k \pi \eta$$

$$\theta = \frac{Kp}{1+Kp} \quad \log a = \frac{1}{n} \log c + \log k$$

$$\Lambda = \frac{\kappa}{c}$$

$$\kappa = \frac{1}{\rho}$$

$$m = kq$$

$$E = E^0 + \frac{RT}{nF} \ln c$$

$$\Delta G^\circ = -RT \ln K$$

$$\Delta G^\circ = -nFE$$

$$p_i = p_i^0 X_i$$

$$p_A = X_A^p p$$

$$\Delta S = -R \sum n_i \ln X_i$$

$$\Delta T_w = \frac{RT^2}{1000 L} \frac{1000 m_s}{M_s m_{rozp}}$$

$$\frac{\Delta p}{p_A^0} = \frac{m_s M_e}{M_s m_e}$$

$$\text{pH} = \text{pK}_a - \lg \frac{[1 - \alpha]}{[\alpha]}$$

$$a = \omega^2 x$$

$$\omega = \frac{2\pi}{t}$$

$$D = \frac{RT}{6\pi\eta N_A r}$$

$$\Delta x = \sqrt{\frac{RT}{N_A} \frac{t}{3\pi\eta r}}$$

$$[\eta] = K M^\alpha$$

$$k = \frac{R}{F}$$

$$[A] = [A_0] - kt$$

$$\ln[A] = \ln[A_0] - kt$$

$$t_{0.5} = \frac{A_0}{2k}$$

$$t_{0.5} = \frac{\ln 2}{k}$$

$$t_{0.1} = \frac{0,1054}{k}$$

$$t_{0.1} = \frac{[A_0]}{10k}$$

