$n(x) = \frac{m(x)}{M(x)} = \frac{N_{(x)}}{N_A}$

$p \cdot V = n \cdot R \cdot T$

$R = 8{,}314\ kPal/mol\,K$

1 mol plina pri 0°C, 101,3 kPa ⇒ 22,4 l

$\rho = \frac{m}{V} = \frac{p \cdot M}{R \cdot T}$

$\bar{M} = x_i \cdot M_i = \frac{\sum n_i \cdot M_i}{\sum n_i}$

$p_i \cdot V_z = n_i \cdot R \cdot T$

$\frac{p_i}{p_z} = \frac{n_i}{n_z} = x_i$

(:10⁶ · 100)

ppm → vol%

$vol\%(x) = \frac{n(x)}{n_{zmesi}}$

$\varphi_i = \frac{V_i}{V_{zmesi}} = \frac{n_i}{n_{zmesi}} = x_i$

1 bar = 10^5 Pa

$1\,Pa = 1\,\frac{N}{m^2} = 1\,\frac{kg}{m\,s^2}$

1 atm = 1013 mbar = 101,3 kPa

$w_i = \frac{m_i}{m_{mes}}$

$w_i \cdot 100 \Rightarrow$ masni %

$\varphi_i \cdot 100 \Rightarrow$ vol% ↘ prostorninski delež

$p_{ZMES} = \sum p_i$

$\bar{M} = \sum \frac{m_i}{n} = \frac{m_i \cdot M_i}{n_i} = x_i M_i$

$SME_{kor} = SME_{mesh}\left(1 - \frac{vol\%}{SMV_i}\right)^2$

↘ korekcijska vrsta

$SMV_m = \frac{100}{\sum (vol\%_i / SMV_i)}$

$\frac{vol\%\,x}{vol\%\,Y} = \frac{\dot{n}(x)}{\dot{n}(Y)}$

$\dot{m} = \frac{m}{t}$

$\dot{m}(x) = \frac{\dot{m}}{\bar{M}}$

$\dot{m}'' = \frac{\dot{Q}'' - \dot{Q}_{iz}}{U}$ → hitrost gorenja

$\dot{Q}$ – toplotni tok [kW/m²]

$\dot{m}'' = \dot{m}''_0\left(1 - e^{-kPD}\right)$

$\psi_x = \frac{\dot{m}_x}{\dot{m}_\mu}$

↘ kisikovo število

g/m²s ↘ kJ/g – specifična toplota

gorenje kurilne tekočine

$k = \frac{\dot{Q}_{n1} - \dot{Q}_{iz}}{gU}$

↘ hitrost zmanjševanja plošče

HITROST SPROŠČANJA TOPLOTE [kW]

$\dot{Q} = \dot{m}\,\chi\,\Delta H_c$ → entalpija gorenja [kJ/kg]

$\dot{Q} = \dot{m}_{gor} \cdot \Delta H_{gor}$

$\dot{Q} = \dot{m}_{zrak} \cdot \Delta H_{kzrak}$

$\dot{m}_{zrak} = 0{,}52 \cdot A \cdot h$

↘ masni tok zraka

$\dot{Q} = \dot{m}''\,\chi\,\Delta H_c A$

$\dot{Q}'' = \dot{m}''\,\chi\,\Delta H_c\ [kW/m^2]$

↘ površinska hitrost sproščanja

$\chi \cdot \Delta H_c = \Delta H_{ex}$

$\dot{Q} = \lambda (t - t_i)^n$ → ČASOVNO ODVISNI POŽAR

↘ čas od vžiga → gorenje po vžigu

PREVAJANJE TOPLOTE

$\dot{q} = k \cdot A \cdot \frac{\Delta T}{\Delta x}$

$\dot{q}'' = \frac{\dot{q}}{A} = k \cdot \frac{\Delta T}{\Delta x}$

↘ toplotni tok [J/s = W] ↘ koeficient toplotne prevodnosti ↘ debelina materiala

KONVEKCIJA

$\dot{q} = h \cdot A \cdot \Delta T$

↘ tok ↘ koeficient toplotne prestopnosti [W/m²°C]

SEVANJE

$c = \lambda \cdot \nu \qquad E = h \cdot \nu$

$\dot{q} = \varepsilon \cdot A \cdot b \cdot T^4$

$b = 5{,}67 \cdot 10^{-8}\ W/m^2K^4$

↘ emisivnost ↘ Stefan-Boltz

$\dot{q}''$ [kW/m²] → toplotno sevanje

$\dot{q}'' = \frac{\dot{Q} \cdot \chi_r}{4\pi r^2}$ → delež toplote, ki seva iz plamena

↘ tok na površino v oddaljenosti r