U_{235} UF_6 F n=masse=19

U_{238}

UF_6 — $M_1 = 235 + 6 \cdot 19 = 349$

UF_6 — $M_2 = 238 + 6 \cdot 19 = 352$

$$v_{qm} = \sqrt{\frac{3RT}{M}} \qquad v_{qm}^2 = \frac{3RT}{M}$$

$$T = \frac{M \cdot v_{qm}^2}{3R}$$

$$T_1 = T_2$$

$$\frac{M_1 v_{qm_1}^2}{3R} = \frac{M_2 v_{qm_2}^2}{3R}$$

$$\frac{M_1}{M_2} = \frac{v_{qm_2}^2}{v_{qm_1}^2} \Rightarrow \frac{v_{qm_2}}{v_{qm_1}} = \sqrt{\frac{M_1}{M_2}}$$

$$\frac{v_{qm_2}}{v_{qm_1}} = \sqrt{\frac{349}{352}} = 0{,}9957$$

v_{qm_0}

$v_{qm_f} = v_{qm_0} + \frac{1}{100} v_{qm_0}$

$= v_{qm_0} \left(1 + \frac{1}{100} \right) = v_{qm_0} (1{,}01)$

$T = \frac{M v_{qm}^2}{3R}$

$T_0 = \frac{M \cdot v_{qm_0}^2}{3R}$ $\quad T_f = \frac{M \cdot (1{,}01\, v_{qm_0})^2}{3R}$

$= \frac{M\, 1{,}01^2 \cdot v_{qm_0}^2}{3R} =$

$= 1{,}01^2\, T_0 =$

$= 1{,}02\, T_0 =$

$= T_0 + 0{,}02\, T_0$

$p = \frac{N \cdot m}{3V} v_{qm}^2 = \frac{nM}{3V} v_{qm}^2$

$$v_{qu} = \sqrt{\frac{3RT}{M}} = \sqrt{\frac{3 \cdot 8{,}314 \cdot 273}{17 \cdot 10^{-3}}}$$

$m_{ZN} = 3{,}2\ kg = 3200\ g$

$n = ?$ $\quad M = 65\ u$

$N = ?$ $\quad$ massa 1 mole $= 65\ g$

$$n = \frac{m_{ZN}}{M_{ZN}} = \frac{3200}{65} = 49{,}23$$

$$N = n \cdot N_A = 49{,}23\, 6{,}02 \cdot 10^{23} =$$

$$= 2{,}95 \cdot 10^{25}$$

$n = 0{,}15$ H_2

$t = 0°C$

$U = ?$

$$\overline{E_{CIN}} = \frac{3}{2} kT$$

$$\overline{E_{CIN}} = \frac{5}{2} kT$$

$$U = \frac{5}{2} kT \cdot N =$$

$$= \frac{5}{2} NkT = \frac{5}{2} nRT =$$

$$= \frac{5}{2} \cdot 0{,}15 \cdot 8{,}314 \cdot 273$$

$$= 851\ J$$

$n = 8,39$

$V = 0,120\ m^3$

$\overline{E_{CIN}} = 6,23 \cdot 10^{-21}\ J$

$p = ?$

$T = ?$

$\overline{E_{CIN}} = \frac{3}{2} k T$

$T = \frac{2}{3} \frac{\overline{E_{CIN}}}{k} =$

$= \frac{2}{3} \cdot \frac{6,23 \cdot 10^{-21}}{1,38 \cdot 10^{-23}} =$

$= 3,01 \cdot 10^2 = 301\ K$

$p = \frac{nRT}{V} = \frac{8,38 \cdot 8,314 \cdot 300}{0,120}$

$= 10^5 \cdot 980\ Pa$