

N118

$$m_2 = 28 \text{ кг} \quad M_2 = 28 \text{ г/моль}$$

$$m_1 = 32 \text{ кг} \quad M_1 = 32 \text{ г/моль}$$

$$C_p = 3,5 R$$

$$\Delta T = 20 \text{ К}$$

$$V = \text{const}$$

$$\gamma = C_p / C_v = 1,4$$

$$\Delta U = \Delta U_1 + \Delta U_2$$

$$\Delta U_1 = \frac{i_1}{2} \frac{m_1}{M_1} R \Delta T$$

$$\Delta U_2 = \frac{i_2}{2} \frac{m_2}{M_2} R \Delta T$$

O_2 и N_2 - атомные газы

$$\Rightarrow i_1 = i_2 = 5$$

$$\Delta U = \Delta T R \frac{i_1}{2} \left(\frac{m_1}{M_1} + \frac{m_2}{M_2} \right)$$

$$\Delta U = 20 \text{ К} \cdot 8,31 \frac{\text{Дж}}{\text{моль} \cdot \text{К}} \cdot \frac{5}{2} \cdot \left(\frac{28000 \text{ г}}{28 \text{ г/моль}} + \frac{32000 \text{ г}}{32 \text{ г/моль}} \right)$$

$$\Delta U = 831 \text{ КДж}$$