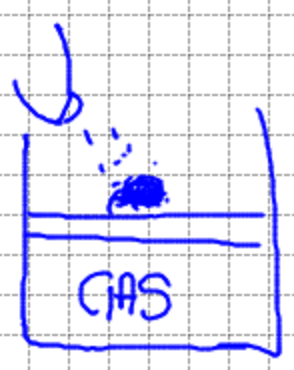
$\Delta T = 30\,^\circ C$ $\Delta T = 30\,k$

1/2

$L = L_0 + \lambda L_0 \Delta T$

$\Delta L = \lambda L_0 \Delta T$



n 23

$V = 300\,mL$ alcool etilico $V_i = 0{,}3\,m^3 = 300 \cdot 10^{-6}\,m^3$

$\begin{cases} t_i = 0\,^\circ C \\ \rho_0 = 0{,}81 \cdot 10^3\,kg/m^3 \end{cases}$

$t_{FIN} = 70\,^\circ C$ fuoriescono 19 g alcool

$\rho = \frac{\Delta m}{\Delta V}$ $\Delta V = \frac{\Delta m}{\rho} = \frac{19 \cdot 10^{-3}\,kg}{0{,}81 \cdot 10^3\,kg/m^3} = 23{,}46 \cdot 10^{-6}\,m^3$

$V_{70^\circ} = V_i + \Delta V = 300 \cdot 10^{-6}\,m^3 + 23{,}46 \cdot 10^{-6}\,m^3 = 323{,}46 \cdot 10^{-6}\,m^3$

$= 323 \cdot 10^{-6}\,m^3$

$\rho = \frac{m}{V}$ $m = \rho_0 V_i = \left(0{,}81 \cdot 10^3\,\frac{kg}{m^3}\right) \cdot \left(300 \cdot 10^{-6}\,m^3\right) =$

$= 243 \cdot 10^{-3}\,kg$

$\rho_{70^\circ} = \frac{m}{V_{70^\circ}} = \frac{243 \cdot 10^{-3}\,kg}{323 \cdot 10^{-6}\,m^3} = 0{,}75 \cdot 10^3\,\frac{kg}{m^3}$

$\Delta V = V_0 \alpha \Delta t$ $\alpha = \frac{\Delta V}{V_0 \Delta t} = \frac{23 \cdot 10^{-6}}{300 \cdot 10^{-6} \cdot 70^\circ C} = 1{,}1 \cdot 10^{-3}\,^\circ C^{-1}$

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$V = ?$

$40{,}0\ ml$ $\quad T = K$

$P_1 = 300\ atm$ $\quad P_f = 200\ atm$

$P_i V_i = P_f V_f$ $\quad V_f = \dfrac{P_i V_i}{P_f}$