

Initial

$$\left(\begin{array}{l} P_i = 25 \text{ atm} \\ T_i = 20^\circ\text{C} \end{array} \right)$$

$$T_i = 293 \text{ K}$$

Final

$$\left(\begin{array}{l} T_f = 950^\circ\text{C} \\ P_f \end{array} \right)$$

$$T_f = 1223 \text{ K}$$

Find P_f ; if $P_f > 110 \text{ atm}$, cylinder explodes.

Note: $V = \text{const.}$ for $i \rightarrow f$:

So:

$$PV = nRT \Rightarrow \frac{nR}{V} = \frac{P}{T} = \text{const.}$$

and,

$$\frac{P_i}{T_i} = \frac{P_f}{T_f} \Rightarrow P_f = P_i \left(\frac{T_f}{T_i} \right) = (25 \text{ atm}) \left(\frac{1223 \text{ K}}{293 \text{ K}} \right)$$

$$\therefore \boxed{P_f = 104.4 \text{ atm}}$$

and cylinder does not explode.