

1. $l_{v0} = h_{v0} - h_{l0} = 2584,7 - 191,8 = 2393 \text{ kJ.kg}^{-1}$

De même $l_{v1} = 1317 \text{ kJ.kg}^{-1}$

2. Transformation monobare : $W_{AC} = -p_{s0} \cdot (v_{l0} - [v_{l0} + x_A \cdot (v_{v0} - v_{l0})]) \equiv p_{s0} \cdot x_A \cdot v_{v0}$

$$Q_{AC} = h_C - h_A = x_A \cdot (-l_{v0})$$

$$\Delta u_{AC} = W_{AC} + Q_{AC} = x_A \cdot (p_{s0} \cdot v_{v0} - l_{v0})$$

$$\text{Mais } p_{s0} \cdot v_{v0} = \frac{R \cdot T_0}{M} \text{ donc } \Delta u_{AC} = W_{AC} + Q_{AC} = x_A \cdot \left(\frac{R \cdot T_0}{M} - l_{v0} \right)$$

3. $\Delta u_{CD} = c_L \cdot (T_1 - T_0)$.

4. On a $v_A = v_B$ donc $x_B = \frac{v_A - v_{l1}}{v_{v1} - v_{l1}} \equiv \frac{v_{v0}}{v_{v1}} \cdot x_A$

5. $Q_{AB} = \Delta u_{AB} \cdot m = x_A \cdot (p_{s0} \cdot v_{v0} - l_{v0}) + c_L \cdot (T_1 - T_0) - x_B \cdot (p_{s1} \cdot v_{v1} - l_{v1})$

AN : $Q_{AB} = \Delta u_{AB} \cdot m = x_A \cdot (p_{s0} \cdot v_{v0} - l_{v0}) + c_L \cdot (T_1 - T_0) - x_B \cdot (p_{s1} \cdot v_{v1} - l_{v1})$