

	Isochore Iso V	Isobare Iso P	Isotherme Iso T	adiabatique	Poly tropique
equation	$V = \text{cst}$	$P = \text{cst}$	$P.V = \text{cst}$	α $P.V^\alpha = \text{cst}$	k $P.V^k = \text{cst}$
W_f $-\int p \, dv$	0	$p \cdot (v_i - v_f)$	$ W_f = Q $ $W_f = r \cdot t \cdot \ln(v_i / v_f)$ $W_f = p_i \cdot v_i \cdot \ln(v_i / v_f)$	$W_f = M \cdot c_v \cdot \Delta t$ $W_f = (p_f \cdot v_f - p_i \cdot v_i) / \alpha - 1$	$W_f = (1/k - 1) \cdot (p_f \cdot v_f - p_i \cdot v_i)$ $W_f = (r/k - 1) \cdot (t_f - t_i)$
W_t $\int v \, dp$	$V \cdot (p_f - p_i)$	0	$p_i \cdot v_i \cdot \ln(p_f / p_i)$	$W_t = m \cdot c_p \cdot \Delta t$ $W_t = (\alpha / \alpha - 1) \cdot (p_f \cdot v_f - p_i \cdot v_i)$	$W_t = (k/k - 1) \cdot (p_f \cdot v_f - p_i \cdot v_i)$
ΔU $W_f + Q$	$\Delta u = Q = m \cdot c_v \cdot \Delta t$	$\Delta u = W_f + Q$	0	$\Delta u = W_f = M \cdot c_v \cdot \Delta t$	$\Delta u = (r/k - 1) \cdot \Delta t + \Delta Q$ $\Delta u = c_v \cdot \Delta t$
Δh $W_t + Q$	$\Delta h = W_t + Q$	$\Delta h = Q$	0	$\Delta h = W_t = m \cdot c_p \cdot \Delta t$	$W_t + Q$
Q	$Q = m \cdot c_v \cdot \Delta t$	$Q = m \cdot c_p \cdot \Delta t$	$ Q = W_t = W_f $	0	$\Delta Q = c_k \cdot \Delta t$

$$, \alpha = c_p / c_v \quad r = c_p - c_v \quad r = \alpha \cdot c_v - c_v = (\alpha - 1) \cdot c_v$$

$$k = (\log p_f - \log p_i) / (\log v_i - \log v_f) \quad c_k = (k - \alpha / k - 1) \cdot c_v$$

$$\Delta S = c_p \cdot \ln(T_2 / T_1) + r \ln(p_1 / p_2)$$

$$P.V = m r t$$

$$\Delta S = c_v \cdot \ln(T_2 / T_1) + r \ln(v_2 / v_1)$$

$$\Delta S = c_v \cdot \ln(p_2 / p_1) + c_p \cdot \ln(v_2 / v_1)$$