Internal Energy (U)

- Internal energy is defined earlier as the sum of all the microscopic forms of energy of a system.
- It is related to the molecular structure and the degree of molecular activity, and can be viewed as the sum of the kinetic and potential energies of the molecules.
 The total energy of a system, can be contained or stored in a system, and thus can be viewed as the static forms of energy.

Internal Energy

Internal Energy (U)

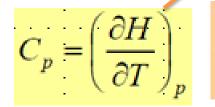
- *U can only repose at the hicroscopic level of atoms and molecule?, 3 essentially in the former francial on all on the international and rotational energies.
- To this may be added the potential energy of intermolecular interactions
- The internal energy is also associated with various binding forces between the molecules of a substance, between the atoms within a molecule, and between the particles within an atom and its nucleus.



Enthalp



Joules Thomson Effect (JT Effect)



Calculating Enthalpy

H (T, P_T) = $\begin{pmatrix} \partial H \\ \partial T \end{pmatrix}_P^P dT + \begin{pmatrix} \partial H \\ \partial P \end{pmatrix}_T^T dP$ $C_{p} = \left(\frac{\partial H}{\partial T}\right) \qquad Q = n\Delta H = n\int_{T}^{T_{2}} C_{p} dT$

 $dH = C_p dT + \left(\frac{\partial H}{\partial P}\right)_T dP$

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