Cheatography

Thermodynamics Materials Exam 1 Cheat Sheet by kaylareanne via cheatography.com/180598/cs/37564/

| Properties | |
|------------------------|-----------|
| Intensive | Extensive |
| - Don't depend on size | - Depend |
| 6 I | |

| - Don't depend on size | - Depend on size |
|------------------------|------------------|
| of system | of system |
| - Temperature | - Mass |
| - Pressure | - Entropy |
| - Chemical Potential | - Volume |

Laws

First: The internal energy of a system is the sum of the work done on the system and the heat transferred

-> Total energy of universe cannot change

-> U = Q + W + W'

-> Enthalpy: H = U + PV

**Se

Systems

Isolated: No transfer of heat or matter

- will never change thermodynamic state once it reaches equilibrium

- Entropy can never decrease, only remain constant or increase

- Internal Energy is always constant

- No work done on or by system

Open: Can exchange both energy and matter with surroundings

Closed: Can transfer work and energy

- Thermodynamic state can change after

equilibrium is reached



By kaylareanne

cheatography.com/kaylareanne/

Not published yet. Last updated 7th March, 2023. Page 1 of 1. Sponsored by Readable.com Measure your website readability! https://readable.com

Processe

| Reversible: No entropy produced | |
|---|--|
| - No permanent changes in the universe | |
| Irreversible: Results in dissipations, entropy | |
| production, and permanent changes | |
| Adiabatic: No heat transfer | |
| Isobaric: Constant Pressure -> dP = 0 | |
| Isochoric: Constant volume -> dV = 0 | |
| Isothermal: Constant temperature -> dT = 0 | |
| Cyclical: Returns system to initial state -> | |
| Delta U = 0 | |