1 Identiteter

Formler

$$dF = -SdT + pdV + \mu dN$$

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2 Termodynamikkens lover

- ...
- $$\Delta U = Q + W$$
- $\Delta S \geq 0$ utenfor likevekt
- ...

3 Mye brukte...

$$F = -kT\ln(Z)$$

$$F = E - TS$$

$$G = E - TS + pV$$

$$Z = \sum_i \exp(-\varepsilon_i/kT)$$

Stirlings tilnærming:

$$\ln N! \approx N\ln N - N$$

Entropi:

$$S \equiv k\ln\Omega$$

Sackur-Tetrode:

$$S = Nk\left[\ln\left(\frac{V}{N}\left(\frac{4\pi mU}{3Nh^2}\right)^{3/2}\right) + \frac{5}{2}\right]$$

Monatomisk ideell gass:

$$\Delta = \frac{Q}{T}$$

Blandingsentropi:

$$\Delta S_{\text{mixing}} = k\ln\binom{N}{N_A}$$

4 Differensialer

$$\frac{1}{T} \equiv \left(\frac{\partial S}{\partial U}\right)_{N,V}$$

5 Utledninger

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