Adibideak 3: gas ideala + solido ideala, bien arteko oreka

$$z_g = \frac{N_g}{V_g f(T)}$$

$$z_s \simeq \frac{1}{\phi(T)}$$

$$\frac{N_g}{V_g} = \frac{f(T)}{\phi(T)}$$

$$P = \frac{N_g}{V_g} k_{\mathrm{B}} T = k_{\mathrm{B}} T \frac{f(T)}{\phi(T)}$$

$$f(T) = \frac{(2\pi m k_{\mathrm{B}} T)^{3/2}}{h^3}$$

$$\phi(T) = \left[2 \sinh \left(\frac{\hbar \omega}{2 k_{\mathrm{B}} T} \right) \right]^{-3}$$

$$P = k_{\mathrm{B}} T \left(\frac{2\pi m k_{\mathrm{B}} T}{h^2} \right)^{3/2} \left[2 \sinh \left(\frac{\hbar \omega}{2 k_{\mathrm{B}} T} \right) \right]^{3} e^{-\frac{\epsilon}{k_{\mathrm{B}} T}}$$