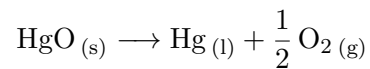


1. Read Chapter 2 of “Chemical Thermodynamics of Materials” of Søren and Grande.
2. Read the paper “Gibbs–Helmholtz equation and entropy” by Ernő Keszei.
3. Starting from the Gibbs–Helmholtz equation, demonstrate that the following equation for the standard free energy at a temperature T can be derived

$$\Delta G^0(T) = \Delta G^\theta \frac{T}{T^\theta} - \Delta H^\theta \left(1 - \frac{T}{T^\theta} \right)$$

4. Determine the temperature at which the following decomposition reaction



becomes spontaneous.