

W4-2-2 Helmholtz energy 2

Provide the differential expression for the Helmholtz energy, da , by using du . What are the variables for the Helmholtz energy?

$$a = u - Ts \rightarrow da = du - d(Ts) = Tds - Pdv - Tds - sdT = -Pdv - sdT.$$

The variables for the Helmholtz energy are T and v .