Example

A moist-air mixture has a dry-bulb temperature of 85°F and a relative humidity of $\varphi = 60\%$. The total pressure of the mix is 14.7 psia.

(a) If the water vapor existed alone at $T_{\text{mix}}$ and $V_{\text{mix}}$, what would its pressure be? I.e., determine the

(b) For every lbm of dry air, how much water vapor is there? I.e., determine the

(c) If you cooled this mix at constant pressure, at what temperature would the water start condensing? I.e., determine the

(d) Determine the enthalpy of the mixture per unit mass of dry air. Is this the same as $H_{\text{mix}}/m_{\text{mix}}$?