

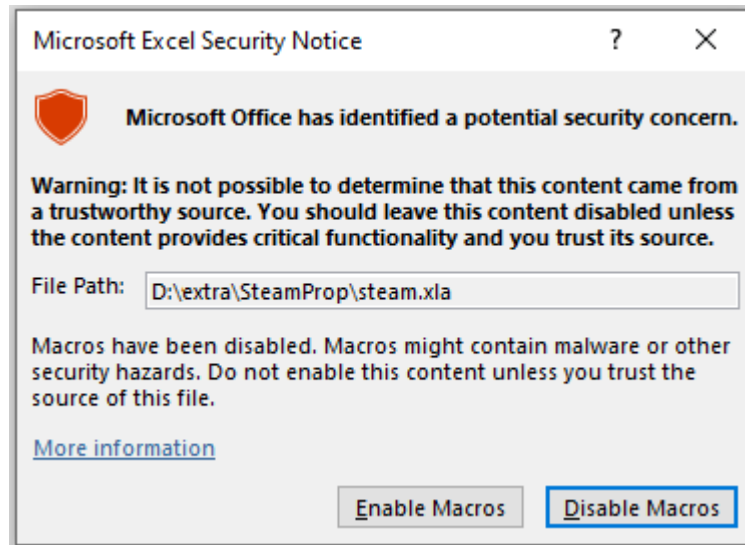
This excel add-in is based on multiple correlations generated from different resources for experimental purposes only. It has been tested to match Mollier diagram upto closest possible numbers.

USE IT AS YOUR OWN RISK. DEVELOPER HAS NO OBLIGATIONS ON CORRECTNESS OF ADD-IN CALCULATIONS AND RESULTS.

How to Install/ Use:

Unzip the file to a safe location. You can configure excel to load this add-in at each start or manual click the add-in file on requirement.

You must "Enable Macros" on first use of this add-in.



Custom Fomulae:

This add-in has multiple properties mapped for water/steam conditions. Following is a major overview of few properties. All values and inputs will be in SI units,

Enthalpy:

Enthalpy (kJ/kg) at given temp (C) and press. (bara) = $h_{pT}(\text{Press}, \text{Temp})$
Enthalpy (kJ/kg) at given press (bara) and entropy (kJ/kg.C) = $h_{ps}(\text{Press}, \text{Entropy})$
Enthalpy (kJ/kg) at given press (bara) and quality (x) = $h_{px}(\text{Press}, X)$
Enthalpy (kJ/kg) at given temp (C) and quality (x) = $h_{Tx}(\text{Temp}, X)$
Enthalpy (kJ/kg) of liquid at saturation temp (C) = $h_{L_T}(\text{Temp})$
Enthalpy (kJ/kg) of liquid at saturation press (bara) = $h_{L_p}(\text{Press})$
Enthalpy (kJ/kg) of vapors at saturation temp (C) = $h_{V_T}(\text{Temp})$
Enthalpy (kJ/kg) of vapors at saturation press (bara) = $h_{V_p}(\text{Press})$

Entropy:

Entropy (kJ/kg.C) at given temp (C) and press (bara) = $s_{pT}(\text{Press}, \text{Temp})$
Entropy (kJ/kg.C) at given press (bara) and enthalpy (kJ/kg) = $s_{ph}(\text{Press}, \text{Enth})$
Entropy (kJ/kg.C) of liquid at saturation temp (C) = $s_{L_T}(\text{Temp})$
Entropy (kJ/kg.C) of liquid at saturation press (bara) = $s_{L_p}(\text{Press})$
Entropy (kJ/kg.C) of vapors at saturation temp (C) = $s_{V_T}(\text{Temp})$
Entropy (kJ/kg.C) of vapors at saturation press (bara) = $s_{V_p}(\text{Press})$

Saturation Conditions:

Saturation Temperature (C) at given press (bara) = $T_{sat_p}(\text{Press})$
Saturation Temperature (C) at given entropy (kJ/kg.C) = $T_{sat_s}(\text{Entropy})$
Saturation Pressure (bara) at given temp (C) = $p_{sat_T}(\text{Temp})$

Saturation Pressure (bara) at given entropy (kJ/kg.C) = psat_s(Entropy)

Steam Quality:

Quality (x) at given press (bara) and entropy (kJ/kg.C) = $\text{x_ps(Press, Entropy)}$

Quality (x) at given press (bara) and enthalpy (kJ/kg) = x_ps(Press, Enth)

Temperature / Pressure at Defined Conditions:

Temperature (C) at given enthalpy (kJ/kg) and entropy (kJ/kg.C) = $\text{T_hs(Enth, Entropy)}$

Temperature (C) at given enthalpy (kJ/kg) and press (bara) = T_ph(Press, Enth)

Temperature (C) at given entropy (kJ/kg.C) and press (bara) = $\text{T_ps(Press, Entropy)}$

Pressure (bara) at given enthalpy (kJ/kg) and entropy (kJ/kg.C) = $\text{p_hs(Enth, Entropy)}$

Specific Volume at Defined Conditions:

Sp. Volume (m³/kg) at given pressure (bara) and temp (C) = V_pT(Press, Temp)

Sp. Volume (m³/kg) at given pressure (bara) and enthalpy (kJ/kg) = $\text{V_ph(Press, Enthalpy)}$

Sp. Volume (m³/kg) at given pressure (bara) and entropy (kJ/kg.C) = $\text{V_ps(Press, Entropy)}$

Density at Defined Conditions:

Density (kg/m³) at given pressure (bara) and temp (C) = $\text{rho_pT(Press, Temp)}$

Density (kg/m³) at given pressure (bara) and enthalpy (kJ/kg) = $\text{rho_ph(Press, Enthalpy)}$

Density (kg/m³) at given pressure (bara) and entropy (kJ/kg.C) = $\text{rho_ps(Press, Entropy)}$

Heat Capacity at Const. Pressure (Specific Heat) at Defined Conditions:

Heat Capacity (kJ/kg K) at given pressure (bara) and temp (C) = $\text{Cp_pT(Press, Temp)}$

Heat Capacity (kJ/kg K) at given pressure (bara) and enthalpy (kJ/kg) = $\text{Cp_ph(Press, Enthalpy)}$

Heat Capacity (kJ/kg K) at given pressure (bara) and entropy (kJ/kg.C) = $\text{Cp_ps(Press, Entropy)}$

Heat Capacity at Const. Volume (Specific Heat) at Defined Conditions:

Heat Capacity (kJ/kg K) at given pressure (bara) and temp (C) = $\text{Cv_pT(Press, Temp)}$

Heat Capacity (kJ/kg K) at given pressure (bara) and enthalpy (kJ/kg) = $\text{Cv_ph(Press, Enthalpy)}$

Heat Capacity (kJ/kg K) at given pressure (bara) and entropy (kJ/kg.C) = $\text{Cv_ps(Press, Entropy)}$

Please note that this file is based on earliest versions. You may find additional formulae for more information.