KCE ThermoFluidProperties

Hochschule Zittau/Görlitz
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Property Libraries and Software Interfaces for Working Fluids in Energy Conversion Processes

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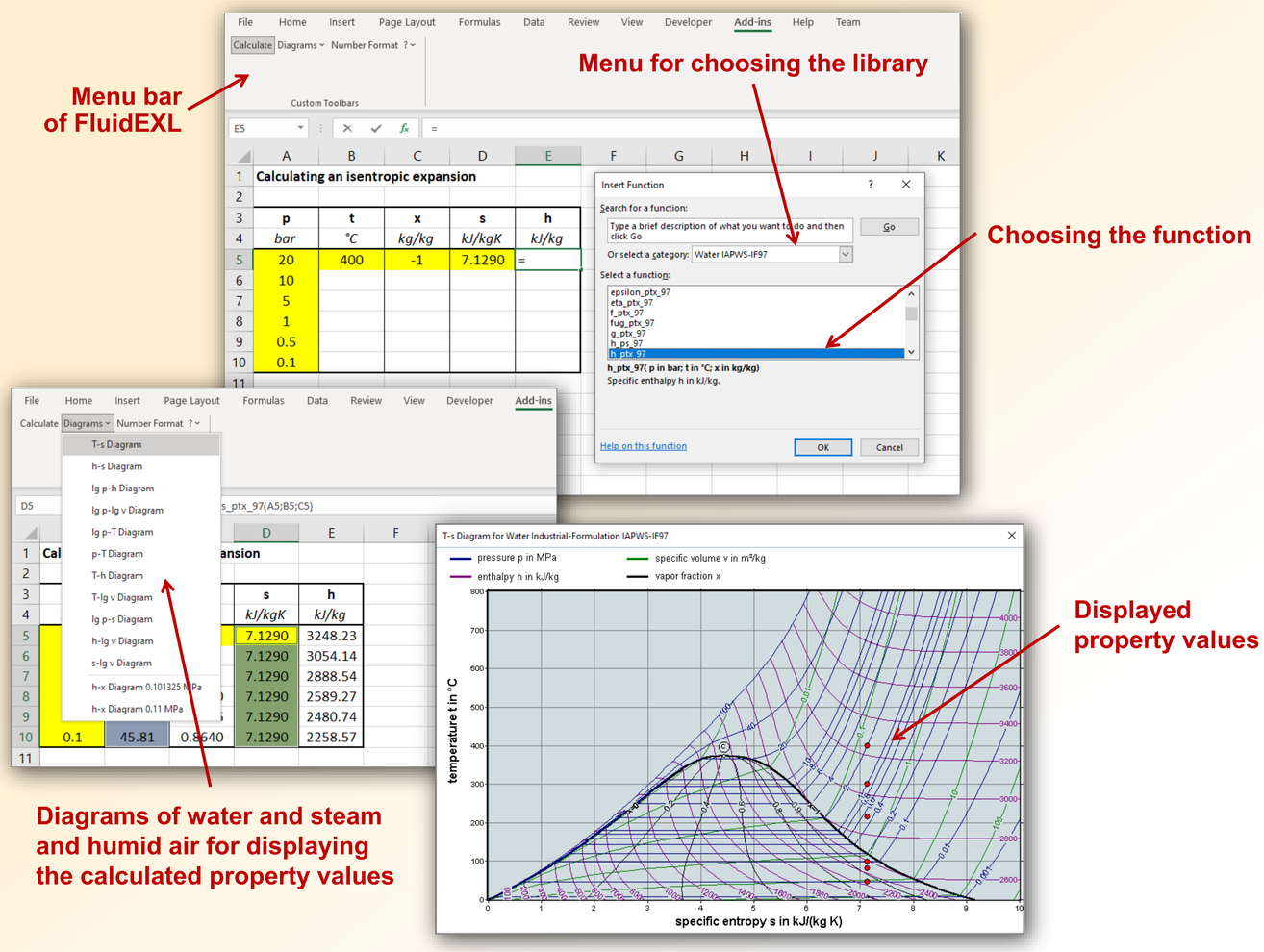
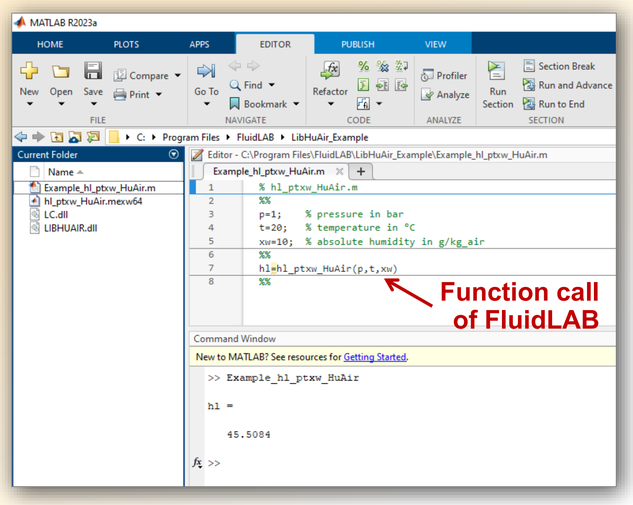
Add-Ons for Using the Property Libraries

FluidEXL*Graphics* for Excel including VBA



Other Add-Ons

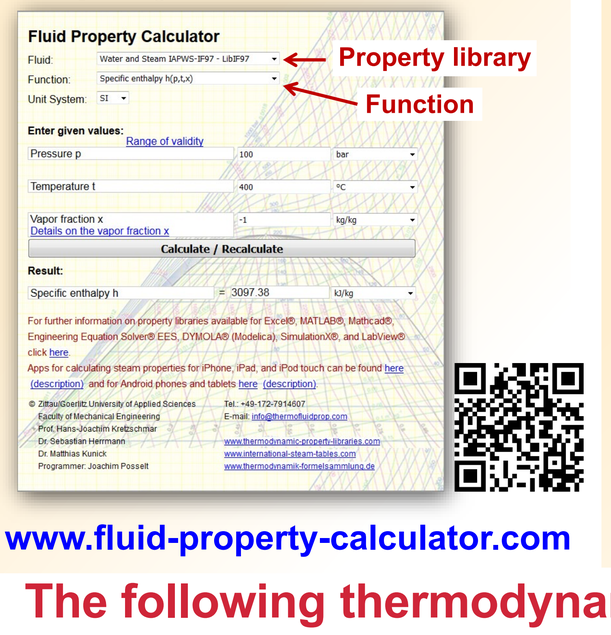
FluidLAB for MATLAB & Simulink



FluidMAT for Mathcad
FluidPRIME for Mathcad Prime
FluidVIEW for LabVIEW
FluidDYM for Dymola
FluidEES for EES

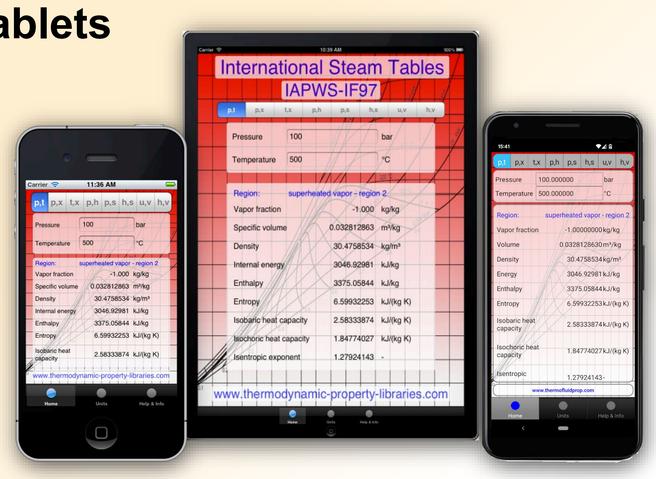
FluidPYT for Python
FluidJAVA for Java
FluidLINUX for Linux
FluidMAC for macOS, etc.

Online Property Calculator



www.fluid-property-calculator.com

App International Steam Tables for iPhone, iPad, Android Phones and Tablets



www.international-steam-tables.com

Property Libraries for Fast Process Calculations Using the Spline-Based Table Look-up Method (SBTL)

Water and Steam	LibSBTL_IF97 LibSBTL_95
Carbon dioxide	LibSBTL_CO2
Parahydrogen	LibSBTL_H2para
Humid air	LibSBTL_HuAir

Property Libraries

Steam, water and ice	LibIF97 LibIF97_META LibICE
Seawater	LibSeaWa
Humid air	LibHuAir
Humid combustion gas mixtures	LibHuGas LibIdGasMix
Carbon dioxide incl. dry ice	LibCO2
Hydrogen	LibH2
Ammonia/water mixtures	LibAmWa
Water/lithium bromide mixtures	LibWaLi
Ammonia	LibNH3
R134a	LibR134a
Propane	LibPropane
Isobutane, n-butane	LibButane_Iso, _n
Liquid coolants	LibSecRef
Ethanol	LibC2H5OH
Methanol	LibCH3OH
Siloxanes as ORC working fluids	LibD4 … … LibMM
Helium	LibHe
Dry air	LibRealAir
Nitrogen and oxygen	LibN2, LibO2
Hydrocarbons	LibC5H10 … … LibC10H22
Other fluids	LibCO … … LibSO2

The following thermodynamic and transport properties can be calculated[a]:

Thermodynamic Properties

- Vapor pressure p_s
- Saturation temperature T_s
- Density ρ
- Specific volume v
- Enthalpy h
- Internal energy u
- Entropy s
- Exergy e
- Isobaric heat capacity c_p
- Isochoric heat capacity c_v
- Isentropic exponent κ
- Speed of sound w
- Surface tension σ

Transport Properties

- Dynamic viscosity η
- Kinematic viscosity ν
- Thermal conductivity λ
- Prandtl number Pr
- Thermal diffusivity a

Inverse Functions

- T, v, s (p,h)
- T, v, h (p,s)
- p, T, v (h,s)
- p, T (v,h)
- p, T (v,u)

Thermodynamic Derivatives

- Typically required partial derivatives are also calculable.

[a] Not all of these property functions are available in all property libraries listed before.

www.thermofluidprop.com