Engineering Software

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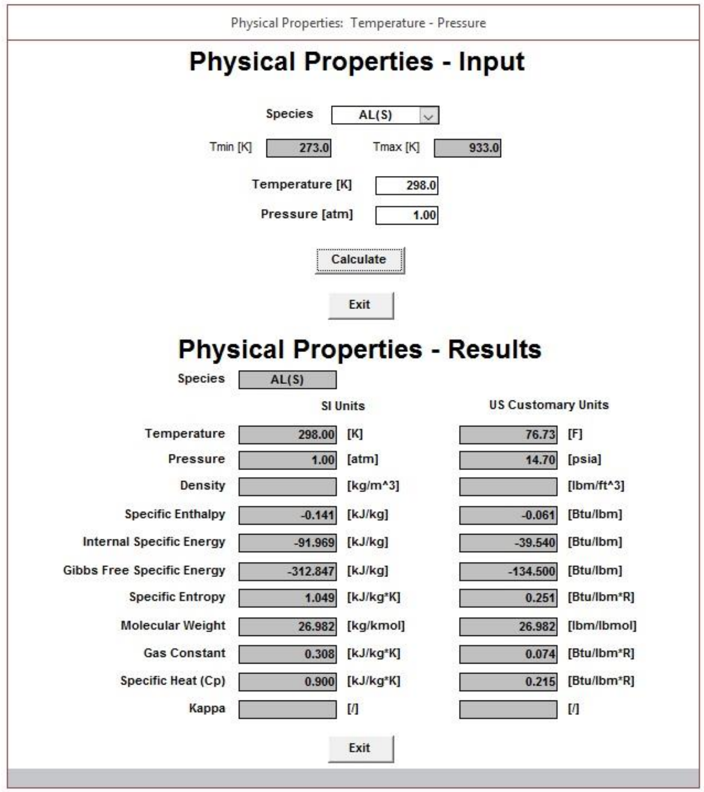
Product Line

Engineering Software has developed a new Windows based product line that quickly, easily and reliably calculates thermodynamic and transport properties of gaseous, liquid and solid species, contains coefficients for the calculation of physical properties -- the user has the capability to use the coefficients to carry out independent engineering calculations involving physical properties of various species, steam approximations for both saturated and superheated areas, analyzes power cycles, power cycle components/processes and compressible flow.

Benefits

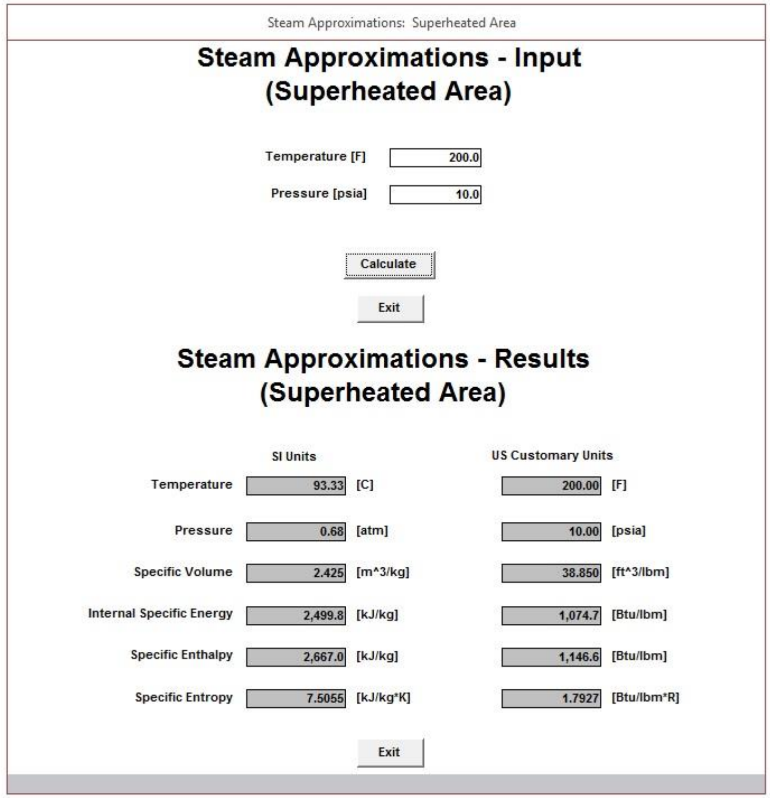
The **Engineering Software** product line should prove to be a good tool for those who are involved at various levels with design, operation and management of energy conversion systems. It should provide the user with the opportunity to more quickly, easily and effectively do his/her work, explore more options, save time and give more confidence in carrying out engineering calculations.

Physical Properties



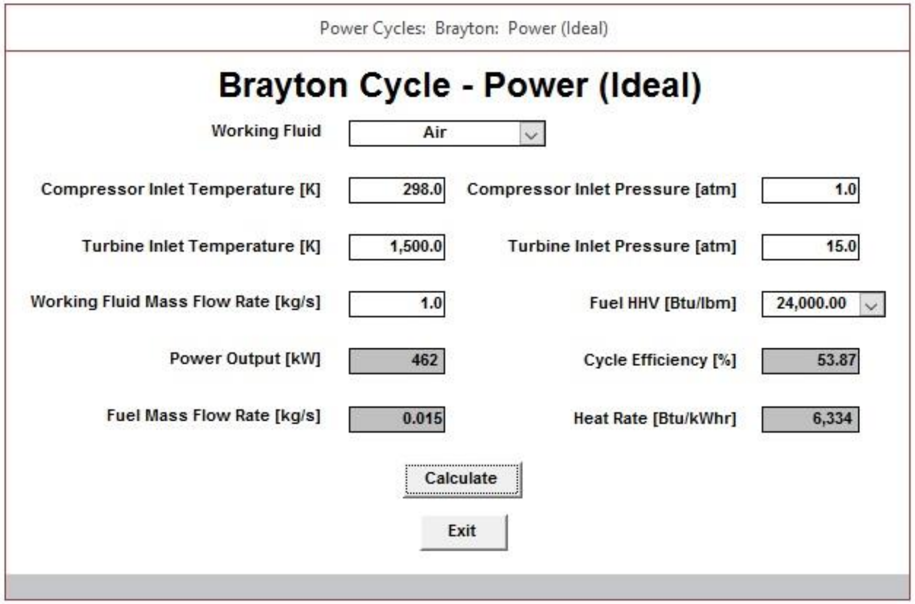
Physical properties of available species are provided for assigned two state values such as: temperature and pressure, enthalpy and pressure and entropy and pressure. Physical properties are given in both U.S. Customary and International Units.

Steam Approximations



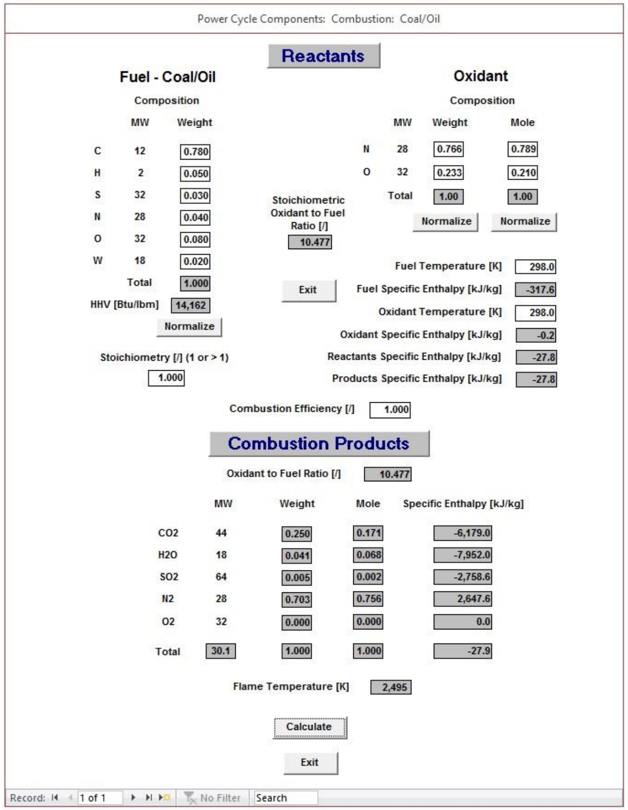
Provides steam approximations, steam table calculations are available for both saturated and superheated areas.

Power Cycle Analysis



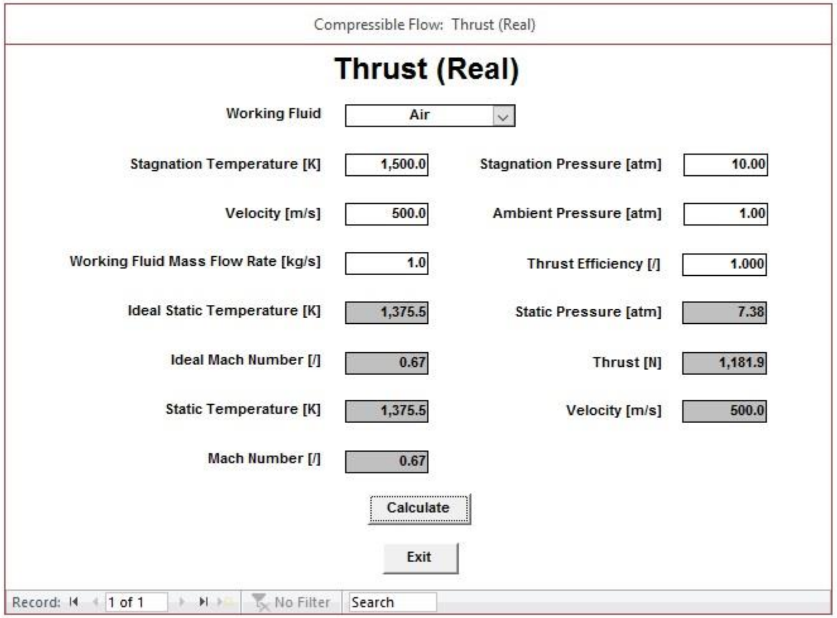
Provides analysis of a few power cycles (Carnot, Brayton, Rankine, Otto, Diesel, Magnetohydrodynamics and Fuel Cell).

Power Cycle Components/Processes



Provides analysis of power cycle components/processes (compression, combustion, expansion, heat transfer and mixing).

Compressible Flow



Provides analysis of compressible flow (velocity of sound, Mach number, stagnation and static properties, nozzle, diffuser, normal shock and thrust).

Claim Sheet

Engineering Software product line allows quick and reliable calculation of thermodynamic and transport properties of gaseous, liquid and solid species, contains coefficients for the calculation of physical properties, steam approximations for both saturated and superheated areas, provides analyses of power cycles, power cycle components/processes and compressible flow.

The aforementioned engineering calculations are valid under the following assumptions:

Thermodynamic and Transport Properties
- Single species consideration
- Ideal gas approach is used (pv=RT)
- Specific heat is not constant
- Coefficients describing thermodynamic and transport properties were obtained from the NASA Glenn Research Center at Lewis Field in Cleveland, OH -- such coefficients conform with the standard reference temperature of 298.15 K (77 F) and the JANAF Tables

Power Cycles
- Single species consideration -- fuel mass flow rate ignored and its impact on the properties of the working fluid
- Basic equations hold (continuity, momentum and energy equations)
- Specific heat is constant

Power Cycle Components/Processes
- Single species consideration
- Basic equations hold (continuity, momentum and energy equations)
- Specific heat is constant

Compressible Flow
- Single species consideration
- Basic equations hold (continuity, momentum and energy equations)
- Specific heat is constant

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To get a free evaluation copy of the **Engineering Software** product line, place an order, find out more about how you can profit or benefit from the product line, visit the **Engineering Software** web site at: **http://www.engineering-4e.com** or send an e-mail to **info@engineering-4e.com** or call **(301) 919-9670**.