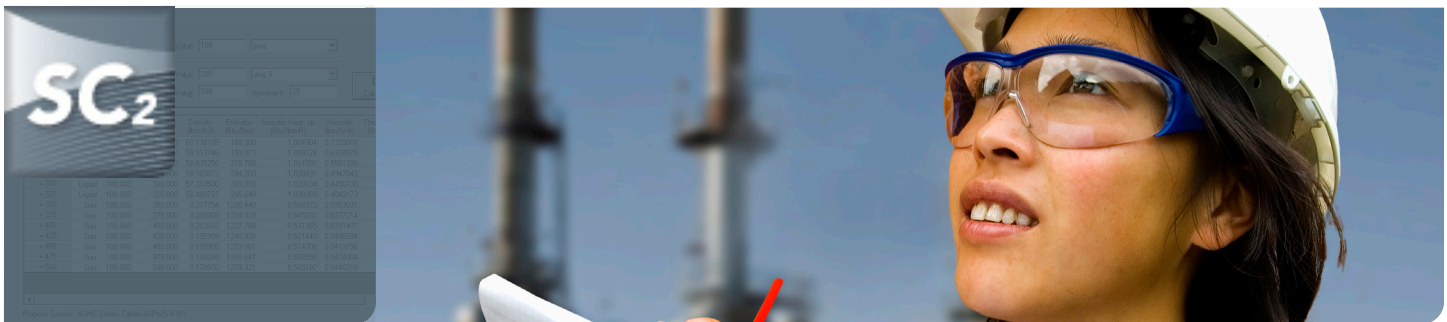


AFT SteamCalc™ 2

Make Steam and Water Property Data Availability as Dynamic as Your Analyses

- Includes a standalone viewer and an add-in to Microsoft Excel™
- Offers two different formulations for calculating water and steam properties:
 - 1997 ASME Steam Tables
 - 1984 National Bureau of Standards



Steam/Water Properties:

- Bulk Modulus of Elasticity
- Density
- Entropy
- Compressibility Factor
- Enthalpy
- Internal Energy
- Kinematic Viscosity
- Isentropic Expansion Coefficient, Gamma
- Phase
- Pressure
- Prandtl Number
- Quality
- Saturation Temperature
- Sonic Velocity
- Specific Heat, cp
- Specific Volume
- Specific Heat, cv
- Temperature Subcool
- Temperature Superheat
- Thermal Conductivity
- Temperature
- Viscosity

Temperature (deg. F)	Phase	Pressure (psia)	Temperature (deg. F)	Density (lbm/ft ³)	Enthalpy (Btu/lbm)	Specific Heat, cp (Btu/lbm-R)	Viscosity (lbm/hr-ft)	Thermal Cond. (Btu/hr-ft-R)
= 200	Liquid	100.000	200.000	60.138109	168.300	1.004904	0.7329016	0.3903049
= 225	Liquid	100.000	225.000	59.513746	193.473	1.009124	0.6334978	0.3935873
= 250	Liquid	100.000	250.000	58.835256	218.765	1.014391	0.5561280	0.3955225
= 275	Liquid	100.000	275.000	58.103872	244.203	1.020831	0.4947043	0.3961698
= 300	Liquid	100.000	300.000	57.319500	269.818	1.028634	0.4450730	0.3959759
= 325	Liquid	100.000	325.000	56.480737	295.648	1.038069	0.4043173	0.3937750
= 350	Gas	100.000	350.000	0.217754	1200.440	0.566972	0.0363031	0.0192960
= 375	Gas	100.000	375.000	0.209808	1214.319	0.545282	0.0377214	0.0197624
= 400	Gas	100.000	400.000	0.202602	1227.766	0.531365	0.0391401	0.0203328
= 425	Gas	100.000	425.000	0.195993	1240.920	0.521440	0.0405594	0.0209757
= 450	Gas	100.000	450.000	0.189905	1253.861	0.514206	0.0419796	0.0216709
= 475	Gas	100.000	475.000	0.184248	1266.647	0.508950	0.0434004	0.0224056
= 500	Gas	100.000	500.000	0.178970	1279.321	0.505192	0.0448218	0.0231712

Property Source: ASME Steam Tables (IAPWS-IF97)

AFT SteamCalc Viewer™

AFT SteamCalc Viewer is a standalone application that provides three ways to calculate steam and water properties from a broad range of input parameters:

- Single Point - properties calculated at a single point
- Two Points - the difference in value between the two inputs for all selected output parameters
- Range - properties calculated over a range of points based on two inputs. The first input is a single value and the second input includes a start value, end value and increment. The output displays properties for each increment over the range. Range output may also be graphed.

Output

- Configure parameters displayed, display order and number of digits
- Supports English and SI units
- Save or set your parameter and unit preferences as the default
- Save and reload input sets
- Customize your graphs using colors, axis scale, titles, markers and more
- Use your graphs in other documents

Parameter	Value
Phase	Gas
Pressure (psia)	100.000
Temperature (deg. F)	400.000
Density (lbm/ft ³)	0.202602
Enthalpy (Btu/lbm)	1227.77
Specific Heat, cp (Btu/lbm-R)	0.531365
Viscosity (lbm/hr-ft)	0.0391401
Thermal Cond. (Btu/hr-ft-R)	0.0203328
Quality (Percent)	N/A

Single Point

Property #1: Pressure Value: 100 psia

Property #2: Temperature Value: 400 deg. F

Calculate

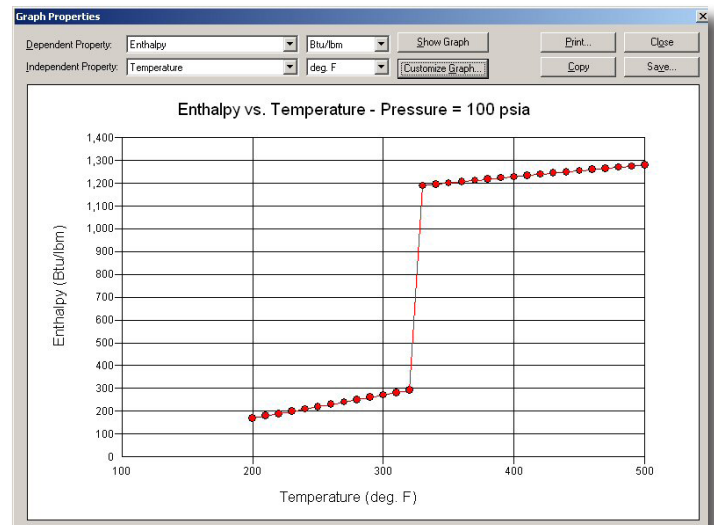
Quality (Percent)	Phase	Pressure (psia)	Density (lbm/ft ³)	Enthalpy (Btu/lbm)
= 0	Saturated Liquid	250.0	53.6116	376.2
= 20	Saturated	250.0	2.6062	541.2
= 40	Saturated	250.0	1.3356	706.3
= 60	Saturated	250.0	0.8978	871.4
= 80	Saturated	250.0	0.6762	1036.5
= 100	Saturated Vapor	250.0	0.5423	1201.6

Range

Property #1: Pressure Value: 250 psia

Property #2: Quality Start Value: 0 Percent End Value: 100 Increment: 20

Calculate



Insert Function dialog box showing 'enthalpy' search results and 'SCEnthalpy' selected.

Microsoft Excel - Steam Heating.xls

SteamCalc Add-in menu in Excel

Excel spreadsheet showing the formula `=SCEnthalpy(C2,C3,T,P)` and the resulting values for Enthalpy (H), Temperature (T), and Pressure (P) at different points in a cycle.

subcooling 10.0 °F

AFT SteamCalc Add-in™ (for Excel)

Directly access ASME and NBS steam/water property functions from within a Microsoft Excel spreadsheet

- Imbed comprehensive, accurate fluid properties in your spreadsheet based calculations
- Paste or directly enter SteamCalc functions as you would with any Excel function

Unit preferences and online help are available from the SteamCalc menu that appears on Excel's menu bar.