Physical Properties for Steam and Water

AFT SteamCalc[™]

The SteamCalc Viewer is included for free in all AFT software.



Steam/Water Properties:

- Bulk Modulus of Elasticity
- Prandtl Number
- Quality
- Saturation Temperature
 - Sonic Velocity
- Compressibility Factor
- Enthalpy

• Density

• Entropy

- Internal Energy
- Kinematic Viscosity
- Isentropic Expansion Coefficient, Gamma
- Phase
- Pressure

- Specific Heat, cp
- Specific Volume
- Specific Heat, cv
- Temperature Subcool
- Temperature Superheat
- Thermal Conductivity
- Temperature
- Viscosity

	8 4	- 10 M	油 紀 🛍					
Single Point	TNO	Points	Bange					
Property #1								
	•		-	100	_		-	
Pressure			■ X	alua: 100		peia	-	
Property #2	h.		Start Va	alua: 200		dep. F	T	
Tenperat.	2		■ Start Va	aga: 200		the second se	r	
Lenhear	iie		End Va	alug: 500		Igorement 25		Ediculate
					100		1.0	
Temperature (deg. F)	Phase	Pressure (psia)	Temperature (deg. F)	Density (Ibm/ft3)	Enthalpy Btu/lbm		Viscosity (Ibm/hr-ft)	Thermal Cond (Bluzhr-R-B)
= 200	Liquid	100.000	200.000	60.138109	16B.30	0 1.004904	0.7329016	0.3903049
= 225	Liquid	100.000	225.000	59.513746	193.47	3 1.009124	0.6334978	0.3935873
= 250	Liquid	100.000	250.000	58.835256	218.76	5 1.014391	0.5561280	0.3955225
= 275	Liquid	100.000	275.000	58.103872	244.20	3 1.020831	0.4947043	0.3961698
= 300	Liquid	100.000	300.000	57.319500	269.81	8 1.028634	0.4450730	0.3955759
= 325	Liquid	100.000	325.000	56.480737	295.64	8 1.038069	0.4043173	0.3937750
= 350	Gas	100.000	350.000	0.217754	1200.44	0 0.566972	0.0363031	0.0192960
= 375	Gas	100.000	375.000	0.209808	1214.31		0.0377214	0.0197624
= 400	Gas	100.000	400.000	0.202602	1227.76	6 0.531365	0.0391401	0.0203328
= 425	Gas	100.000	425.000	0.195999	1240.92	0 0.521440	0.0405594	0.0209757
= 450	Gas	100.000	450.000	0.189905	1253.86	1 0.514206	0.0419796	0.0216709
= 475	Gas	100.000	475.000	0.184248	1266.64	7 0.508950	0.0434004	0.0224056
= 500	Gas	100.000	500.000	0.178970	1279.32	1 0.505192	0.0446218	0.0231712

World Class Support

Your software includes one free year of product upgrades and technical support. Additionally, AFT offers a variety of training for all levels of knowledge.



Training Seminars This classroom style setting accelerates your skills to be an analysis and simulation expert.



Free Webinars Discuss products and solution-based uses. Recorded webinars are located on our website.



Expert Assistance Have too many projects or need expert analysis? Extend your team with our Flow Expert Package.



Tips & Tricks Each month, an AFT engineer gives a new tip and trick to keep you up to date.



Dynamic solutions for a fluid world [™]

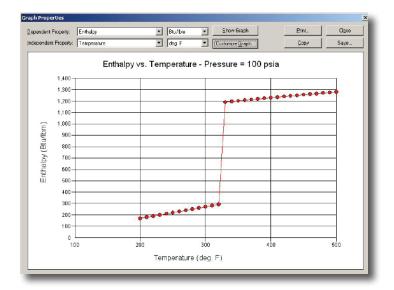
AFT SteamCalc Viewer provides three ways to calculate steam and water properties from a broad range of input parameters:

- 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.

					Paramete	er	V	alue
				Phas	e			Gas
				Pres	sure (psia)		-	00.000
				Tem	perature (deg.	F)		400.000
				Dens	sity (lbm/ft3)		0.	202602
				Enth	alpy (Btu/lbm)		-	227.77
				Spec	cific Heat, cp. (I	Btu/Ibm-F	3) 0.	531365
Single Point				Visco	osity (Ibm/hr-ft)		0.0	391401
				Ther	mal Cond. (Btu	/hr-ft-R)	0.0	203328
Property #1:				Qual	ity (Percent)			N/A
Pressure	•	<u>V</u> alue:	100	psia		-		-
Property #2: Temperature	-	V <u>a</u> lue:	400	deg. F	-		Calculate	
	¥	V <u>a</u> lue:	400	Quality	Phase	Pressure	<u>Calculate</u> Density	Enthalp
	×	V <u>a</u> lue:	400	Quality (Percent)	Phase	Pressure (psia)	Calculate Density (Ibm/ft3)	Enthalp (Btu/lbr
	×	V <u>a</u> lue:	400	Quality	Phase Saturated Liquid	Pressure (psia) 250.0	Calculate Density (Ibm/ft3) 53.6116	Enthalp (Btu/Ibr 376
	×	V <u>a</u> lue:	400	Quality (Percent) = 0 = 20 = 40	Phase	Pressure (psia) 250.0 250.0	Calculate Density (Ibm/ft3)	Enthalp (Btu/Ibn 376 541 706
	_	V <u>a</u> lue:	400	Quality (Percent) = 0 = 20 = 40 = 60	Phase Saturated Liquid Saturated Saturated Saturated Saturated	Pressure (psia) 250.0 250.0 250.0 250.0	Density (lbm/ft3) 53.6116 2.6062 1.3356 0.8978	Enthalp, (Btu/Ibm 376 541 706 871
Temperature	▼ <u>R</u> ange	V <u>a</u> lue:	400	Quality (Percent) = 0 = 20 = 40 = 60 = 80	Phase Saturated Liquid Saturated Saturated Saturated Saturated	Pressure (psia) 250.0 250.0 250.0 250.0 250.0 250.0	Density (Ibm/ft3) 53.6116 2.6062 1.3356 0.8978 0.6762	Enthalp (Btu/lbn 376 541 706 871 1036
	_	Value:	400	Quality (Percent) = 0 = 20 = 40 = 60	Phase Saturated Liquid Saturated Saturated Saturated Saturated	Pressure (psia) 250.0 250.0 250.0 250.0 250.0 250.0	Density (lbm/ft3) 53.6116 2.6062 1.3356 0.8978	Enthalps (Btu/lbm 376, 541, 706, 871, 1036, 1201,
Temperature	_	V <u>a</u> lue: ⊻alue:		Quality (Percent) = 0 = 20 = 40 = 60 = 80	Phase Saturated Liquid Saturated Saturated Saturated Saturated	Pressure (psia) 250.0 250.0 250.0 250.0 250.0 250.0 250.0	Density (Ibm/ft3) 53.6116 2.6062 1.3356 0.8978 0.6762	Enthalp (Btu/lbn 376 541 706 871 1036
Temperature Property #1:	Range	Value:	250	Quality (Percent) = 0 = 20 = 40 = 60 = 80 = 100 psia	Phase Saturated Liquid Saturated Saturated Saturated Saturated Vapor	Pressure (psia) 250.0 250.0 250.0 250.0 250.0 250.0 250.0	Density (Ibm/ft3) 53.6116 2.6062 1.3356 0.8978 0.6762	Enthalp (Btu/lbn 376 541 706 871 1036
Temperature Property #1: Pressure	Bange	1	250	Quality (Percent) = 0 = 20 = 40 = 60 = 80 = 100	Phase Saturated Liquid Saturated Saturated Saturated Saturated Vapor	Pressure (psia) 250.0 250.0 250.0 250.0 250.0 250.0 250.0	Density (Ibm/ft3) 53.6116 2.6062 1.3356 0.8978 0.6762	Enthalp (Btu/lbn 376 541 706 871 1036

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





2955 Professional Place, Suite 301 Colorado Springs, CO 80904 USA (719) 686 1000 sales@aft.com www.aft.com