

SteamTab™ Quick Reference

Scientific IAPWS-95	Calculates at Specified	Calling Sequence Example
Saturated Vapor, Liquid, and Two-Phase Functions		
STPSAT	pressure (<i>P</i>)	STPSAT(pressure, quality, code, units)
STTSAT	temperature (<i>T</i>)	STTSAT(temperature, quality, code, units)
Superheated or Subcooled Functions		
STTP	temperature and pressure (<i>T-P</i>)	STTP(temperature, pressure, code, units)
STTV	temperature and volume (<i>T-V</i>)	STTV(temperature, volume, code, units)
STTH	temperature and enthalpy (<i>T-H</i>)	STTH(temperature, enthalpy, code, units)
STTS	temperature and entropy (<i>T-S</i>)	STTS(temperature, entropy, code, units)
STTU	temperature and internal energy (<i>T-U</i>)	STTU(temperature, internal, code, units)
STPV	pressure and volume (<i>P-V</i>)	STPV(pressure, volume, code, units)
STPH	pressure and enthalpy (<i>P-H</i>)	STPH(pressure, enthalpy, code, units)
STPS	pressure and entropy (<i>P-S</i>)	STPS(pressure, entropy, code, units)
STPU	pressure and internal energy (<i>P-U</i>)	STPU(pressure, internal, code, units)
Constant Properties Functions		
STWM	Molecular weight, 18.015 kg/kmol	STMW(units)
STTC	Critical temperature, 373.946°C	STTC(units)
STPC	Critical pressure, 220.64 bar	STPC(units)
STVC	Critical specific volume, 0.003106 m ³ /kg	STVC(units)
STRC	Critical specific density, 322 kg/m ³	STRC(units)
STZC	Critical compressibility factor, 0.229441	STZC(units)
STTPT	Triple point temperature, 0.01°C	STTPT(units)
STTPP	Triple point pressure, 0.00611657 bar	STTPP(units)

Quality	
0	Saturated Liquid
1	Saturated Vapor
0 < Q < 1	Two-phase
-1*	Indeterminate*
-2*	Superheated vapor*
-3*	Subcooled liquid*
Units	
0 or none	Metric/SI
1	English

*Cannot be specified as a function argument. Only returned as a calculated value.

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Code	Steam Property	Metric/SI Units	English Units
0	Temperature, T	°C	°F
1	Pressure, P	bar	psia
2	Volume, V	m ³ /kg	ft ³ /lb
3	Density, ρ	kg/m ³	lb/ft ³
4	Compressibility factor, Z	dimensionless	dimensionless
5	Helmoltz free energy, A	kJ/kg	Btu/lb
6	Entropy, S	kJ/(kg·°C)	Btu/(lb·°F)
7	Internal energy, U	kJ/kg	Btu/lb
8	Enthalpy, H	kJ/kg	Btu/lb
9	Gibbs free energy, G	kJ/kg	Btu/lb
10	Heat capacity at constant volume, C_v	kJ/(kg·°C)	Btu/(lb·°F)
11	Heat capacity at constant pressure, C_p	kJ/(kg·°C)	Btu/(lb·°F)
12	Speed of sound, ν	m/s	ft/s
13	Coefficient of thermal expansion, $\alpha = \rho(\partial V/\partial T)_p$	1/°C	1/°F
14	Isothermal compressibility, $\kappa = -\rho(\partial V/\partial P)_T$	1/bar	1/psia
15	dpdt, $(\partial P/\partial T)_\nu$	bar/°C	psia/°F
16	dvdt, $(\partial V/\partial T)_p$	m ³ /(kg·°C)	ft ³ /(lb·°F)
17	dvdp, $(\partial V/\partial P)_T$	m ³ /(kg·bar)	ft ³ /(lb·psi)
18	Viscosity (dynamic), μ	μPa·s	lb/(ft·hr)
19	Thermal conductivity, K	W/(m·°C)	Btu/(hr·ft·°F)
20	Surface tension, σ	N/m	N/m
21	Prandtl number, N_{Pr}	dimensionless	dimensionless
22	Static dielectric constant	dimensionless	dimensionless
23	Isothermal Joule-Thomson coefficient	kJ/(kg·bar)	Btu/(lb·psia)
24	Joule-Thomson coefficient	°C/bar	°F/psia
25	Quality (vapor fraction)	dimensionless	dimensionless