

Specific Gravity, referred to Air for Gases, and Water for Solids or Liquids.....	G	Helmholtz Free Energy; Internal Potential Function.....	ϕ (psi)
Specific Volume; Volume per Unit Weight.....	v	$\phi = u - Ts$	
Density; Weight per Unit Volume; Mass per Unit Volume.....	ρ (rho)	Gibbs Function; Total Potential Function.....	Z or ζ (Zeta)
$\rho = 1/v$		$Z = u + (A)pv - Ts$	
Specific Heat.....	c	Saturated Liquid at saturation pressure and temperature; Liquid in contact with Vapor.....	Subr
Specific Heat at Constant Pressure.....	c_p	Dry Saturated Vapor; Dry Saturated Gas at saturation pressure and temperature; Vapor in contact with Liquid.....	Subg
Specific Heat at Constant Volume.....	c_v	This system, carried to a logical conclusion, requires also subscripts for Liquid in contact with Solid, Solid in contact with Vapor and Vapor in contact with Solid. However, these subscripts are not assigned at this time. Pairs of subscripts would also denote values for fusion or melting and sublimation.	
Ratio of Specific Heats.....	k	Conditions at Critical Point.....	Subc
$k = c_p/c_v$		Vaporization Values at Constant Pressure; Differences between Values for Saturated Vapor and Saturated Liquid at the same pressure.....	Subfg
Absolute Viscosity; Coefficient of Viscosity, usually in poises or similar units of stress/shear rate.....	μ (mu)	Heat Content of Saturated Liquid; Total Heat of Saturated Liquid; Enthalpy of Saturated Liquid, sometimes called Heat of the Liquid.....	hf
Relative Viscosity; Ratio of Absolute Viscosity of any fluid to Absolute Viscosity of Water. (If the second option is used, the context must make clear that Relative Viscosity is meant).....	μ/μ_w or μ (mu)	Heat Content of Dry Saturated Vapor; Total Heat of Dry Saturated Vapor; Enthalpy of Dry Saturated Vapor.....	hg
Kinematic Viscosity (Absolute Viscosity divided by Density).....	ν (nu)	Various Values for Saturation; Various Values for Vaporization, according to above rules.....	vf, etc.
Relative Kinematic Viscosity (Relative Viscosity divided by Density). (If the second option is used the context must make clear that Relative Kinematic Viscosity is meant).....	ν/ν_w or ν (nu)	Saturation Pressure; Saturation Temperature.....	pf and T_f or p_g and T_g
Time in seconds obtained from a viscosity measurement with a specific instrument, from which μ or ν may be computed by appropriate formulas.....	t	Heat of Vaporization at Constant pressure.....	L or hf
		Heat of Fusion; Heat of Sublimation, may be denoted by subscripts affixed to the symbols L or h.	hfg
		Gas Constant in equation $pv = RT$	R
		Two values are in customary use. The first is the universal constant, corresponding to v in the above equation as volume per mol (product of molecular weight and volume per unit weight). The second is the particular value for a given gas, corresponding to v as volume per unit weight. The second	
Symbols for Thermodynamics			
Mechanical Equivalent of Heat.....	J		
Heat Equivalent of Work.....	1/J or A		
Thermometric Temperature, F or C (C is preferably used only when t is used for Time in the same discussion).....	θ (theta)		
Absolute Temperature, F abs or K.....	T		
Entropy. (Preferably, the capitals are used for any weight, and small letters, for unit weight).....	S or s		
Internal Energy; Intrinsic Energy. Preferably, the capital is used for any weight and the small letter for unit weight; U or u.....	U or u		
Heat Content; Total Heat; Enthalpy. Preferably the capital is used for any weight and the small letter for unit weight; H or h.....	H or h		
H or $h = u + (A)pv$			

value is the first value divided by molecular weight M . If desired, a prime or a subscript may be used to distinguish between the two values.

Quality of Steam, pounds of dry steam per pound of mixture..... x

Symbols for Heat Transmission⁶

Terms ending "ivity" designate properties independent of size or shape, sometimes called "specific properties." Examples are—conductivity and resistivity.

Terms ending "ance" designate quantities depending not only on the material, but also upon size and shape, sometimes called "total quantities." Examples are—conductance and transmittance.

Terms ending "ion" designate rate of heat transfer. Examples are—conduction and transmission.

Area.....	A	Thermal Conductance (heat transferred per unit time per unit area, per degree).....	C
Temperature, F or C.....	t	$C = \frac{1}{R} = \frac{k}{L} = \frac{q/A}{t_1 - t_2}$	
Temperature, F abs or K.....	T	Film Conductance (heat transferred per unit time per unit area, per degree).....	f
Length of path of heat flow, thickness.....	L	$f = \frac{q/A}{t_1 - t_2}$	
Total Quantity of Heat Transferred.....	Q	Film Resistance (degrees per unit of heat transferred per unit time per unit area).....	1/f
Thermal Transmission (heat transferred per unit time).....	q	$\frac{1}{f} = \frac{t_1 - t_2}{q/A}$	
$q = Q/\text{time}$		Thermal Resistivity.....	1/k
Thermal Conductivity (heat transferred per unit time per unit area, and per degree per unit length).....	k	Thermal Resistance (degrees, per unit of heat transferred per unit time per unit area).....	R
$k = \frac{q/A}{(t_1 - t_2)/L}$		$R = \frac{t_1 - t_2}{q/A}$	

ABBREVIATIONS FOR ENGINEERING AND SCIENTIFIC TERMS⁷

Fundamental Rules for Formation and Use

Abbreviations should be used sparingly in text and with regard to the context and to the training of the reader. Terms denoting units of measure are abbreviated in the text only when preceded by the amounts indicated in numerals; thus "several inches," "one inch," "12 in." In tabular matter, specifications, maps, drawings, and texts for special purposes, the use of abbreviations is governed by the desirability of conserving space.

Do not begin a sentence with a numeral followed by an abbreviation.

Avoid capitals in abbreviations except in words normally capitalized.

Hyphenated compound words call for hyphenated abbreviations; thus "hp-hr."

With but few exceptions of abbreviations in common usage, the singular only is used; thus "in." for "inches," not "ins."; but No., Nos., Fig., Figs.

⁶Joint report of the Committee on Heat Transmission, National Research Council and Sub-committee on Symbols for Heat and Thermodynamics, American Standards Association.

⁷Proposed Standard prepared by Sectional Committee on Scientific and Engineering Symbols and Abbreviations.