

Derivative of	at constant						Definitions
	P	v	T	u	h	s	
P		-vβ	-1	(vβP - C _p)	-C _p	-(C _p /T)	C _p = $\left(\frac{\partial h}{\partial T}\right)_P$
v	vβ		vκ	vκC _v	v[vκC _v + vβ]	(vκC _v /T)	C _v = $\left(\frac{\partial u}{\partial T}\right)_v$
T	1	-vκ		v[kP - βT]	v(1 - βT)	-vβ	β = $\frac{1}{v} \left(\frac{\partial v}{\partial T}\right)_p$
u	-(vβP - C _p)	-vκC _v	-v(kP - βT)		v{C _p - P[vβ + κC _v]}	-(vκC _v P/T)	κ = $-\frac{1}{v} \left(\frac{\partial v}{\partial P}\right)_T$
h	C _p	-v[vκC _v + vβ]	-v(1 - βT)	-v{C _p - P[vβ + κC _v]}		-(vC _p /T)	$\partial v = -\frac{1}{\rho^2} \partial \rho$
s	C _p /T	-(vκC _v /T)	vβ	(vκC _v P/T)	vC _p /T		$\partial \rho = -\frac{1}{v^2} \partial v$
ρ	-ρβ		-ρκ	-ρκC _v	-ρ[vκC _v + vβ]	-(κρC _v /T)	C _p = C _v + vTβ ² / κ

Table 1. Derivatives of equation of state properties in the sense of Bridgman.