

Equation	$e$	enhancement factor ( $f_w$ or $f_i$ )	Range of $T$	Max. error	Reference
2.1b (wet-bulb)	$6.1121 \exp\left(\frac{17.368T_{dw}}{238.88 + T_{dw}}\right)$	---	-0 to 50 °C	0.05 % at 50 °C	Buck (1981)
2.1b (ice-bulb)	$6.1115 \exp\left(\frac{22.452T_{dw}}{272.55 + T_{dw}}\right)$	---	-50 to 0 °C	0.02 % at -38 to -11 °C	
2.1c (wet-bulb)	$6.107 \exp\left(\frac{17.38T_{dw}}{239 + T_{dw}}\right)$	---	---	---	Abbott & Tabony (1985)
2.1c (ice-bulb)	$6.107 \exp\left(\frac{22.44T_{dw}}{272.4 + T_{dw}}\right)$	---	---	---	
2.1d (wet-bulb)	$6.1121 f_w \exp\left(\frac{\left(18.729 - \left(\frac{T_{dw}}{227.3}\right)\right) T_{dw}}{257.87 + T_{dw}}\right)$	$f_w = 1 + 7 \times 10^{-4} + (3.46 \times 10^{-6} P)$	-40 to 50 °C	0.23 % at -40 °C	Buck (1981)
2.1d (ice-bulb)	$6.1115 f_i \exp\left(\frac{\left(23.036 - \left(\frac{T_{dw}}{333.7}\right)\right) T_{dw}}{279.82 + T_{dw}}\right)$	$f_i = 1 + 3 \times 10^{-4} + (4.18 \times 10^{-6} P)$	-80 to 50 °C	0.06 % at -80 °C	
2.1e (wet-bulb)	As for 2.1d wet-bulb $e$	$f_w = 1 + 7.2 \times 10^{-4} + (3.20 \times 10^{-6} + (5.9 \times 10^{-10} T_{dw}^2)) P$	-40 to 50 °C	0.23 % at -40 °C	Buck (1981) - high accuracy
2.1e (ice-bulb)	As for 2.1d ice-bulb $e$	$f_i = 1 + 2.2 \times 10^{-4} + (3.38 \times 10^{-6} + (6.4 \times 10^{-10} T_{dw}^2)) P$	-80 to 0 °C	0.06 % at -80 °C	

**Table 2.1: Equations for calculating  $e$  where  $T_{dw}$  is in °C and  $e$  and  $P$  are in hPa.**