Table 3A1.1. *Coefficients used in the fitting equations for air saturation (C^s) and Henry's Law coefficients (K_H) of gases in seawater (Table 3.6)*

The coefficients and fitting equations in the footnotes are for saturation values of O_2, N_2, Ar, Ne, and He in units of μmol kg^{-1} and ml kg^{-1}. Values can be transformed between these units by using the real gas molar volumes calculated from Van der Waals constants (22.385 9, 22.391 9, 22.386 9, 22.422 4 and 22.436 9 mol^{-1} for O_2, N_2, Ar, Ne, and He, respectively). The fitting equation for CO_2 is for the Henry's Law coefficient, K_H (mol kg^{-1} atm^{-1}) instead of the saturation concentration.

	O_2[a]	N_2[b]	Ar[b]	Ne[b]	He[c]	K_{H,CO_2}[d]
Coefficient	(μmol kg^{-1})			(nmol kg^{-1})	(ml kg^{-1})	(mol kg^{-1} atm^{-1})
A_0	5.808 710	6.432 41	2.791 63	2.181 40		
A_1	3.202 910	2.927 58	3.177 14	1.289 31	−67.217 8	−60.240 9
A_2	4.178 870	4.303 51	4.136 58	2.122 35	216.344 2	93.451 7
A_3	5.100 060	4.266 73	4.866 32		139.203 2	23.358 5
A_4	−0.098 664				−22.620 2	
A_5	3.803 690					
B_0	−0.007 016	−0.007 443 16	−0.006 963 17	−0.005 947 22		
B_1	−0.007 700	−0.007 999 36	−0.007 683 87	−0.005 093 70	−0.044 781	0.023 517
B_2	−0.013 86	−0.001 529 48	−0.001 190 78		0.023 541	−0.023 656
B_3	−0.009 515				−0.0034266	0.0047035
C_0	$-2.759\,150 \times 10^{-7}$					
$[C]^s$ at 20 °C 35 ppt	225.5	420.5	11.08	6.826	3.729×10^{-5}	0.0324

[a] Garcia and Gordon (1992): $\ln C^s = A_0 + A_1 T_s + A_2 T_s^2 + A_3 T_s^3 + A_4 T_s^4 + A_5 T_s^5 + S(B_0 + B_1 T_s + B_2 T_s^2 + B_3 T_s^3) + C_0 S^2$;
where $T_s = \ln\{(298.15 - t)(273.15 + t)^{-1}\}$ and t is temperature (°C).

[b] Hamme and Emerson (2004): same equation as in [a].

[c] Weiss (1971): $\ln C^s = A_1 + A_2(100/T) + A_3 \ln(T/100) + A_4(T/100) + S\{B_1 + B_2(T/100) + B_3(T/100)^2\}$, where T is absolute temperature.

[d] Weiss (1974): $\ln K_{H,CO_2} = A_1 + A_2(100/T) + A_3 \ln(T/100) + S\{B_1 + B_2(T/100) + B_3(T/100)^2\}$, where T is absolute temperature.