Table B.3   Henry's Law Constants for Selected Gases in Water

where $\overline{P}_a = H_a x_a$

$\overline{P}_a$ = partial pressure of the solute *a* in the gas phase, atm

x_a = mole fraction of solute *a* in the liquid phase, mole fraction

H_a = Henry's law constant, atm/mole fraction

$$H_a \times 10^{-4}, \text{ atm/mole fraction}$$

Temp. °C	Air	CO_2	CO	C_2H_6	H_2	H_2S	CH_4	NO	N_2	O_2
0	4.32	0.0728	3.52	1.26	5.79	0.0268	2.24	1.69	5.29	2.55
10	5.49	0.104	4.42	1.89	6.36	0.0367	2.97	2.18	6.68	3.27
20	6.64	0.142	5.36	2.63	6.83	0.0483	3.76	2.64	8.04	4.01
30	7.71	0.186	6.20	3.42	7.29	0.0609	4.49	3.10	9.24	4.75
40	8.70	0.233	6.96	4.23	7.51	0.0745	5.20	3.52	10.4	5.35
50	9.46	0.283	7.61	5.00	7.65	0.0884	5.77	3.90	11.3	5.88
60	10.1	0.341	8.21	5.65	7.65	0.103	6.26	4.18	12.0	6.29
70	10.5		8.45	6.23	7.61	0.119	6.66	4.38	12.5	6.63
80	10.7		8.45	6.61	7.55	0.135	6.82	4.48	12.6	6.87
90	10.8		8.46	6.87	7.51	0.144	6.92	4.52	12.6	6.99
100	10.7		8.46	6.92	7.45	0.148	7.01	4.54	12.6	7.01

NOTE: To use this table, extract the table entry, then multiply by 10^4 to get the H_a. For example, the value of H_{H_2S} at 20 °C is 483 atm/mole fraction.

Adapted from Foust, Wenzel, Clump, Maus, and Anderson, *Principles of Unit Operations*, John Wiley & Sons, New York, 1960.