

Table B.3 Vapor Pressure of Water^a

| p_v (mm Hg) versus T (°C) | | | | | | | | | | | |
|--|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <i>Example: The vapor pressure of liquid water at 4.3°C is 6.230 mm Hg</i> | | | | | | | | | | | |
| | T (°C) | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
| Ice ↓ | -14 | 1.361 | 1.348 | 1.336 | 1.324 | 1.312 | 1.300 | 1.288 | 1.276 | 1.264 | 1.253 |
| | -13 | 1.490 | 1.477 | 1.464 | 1.450 | 1.437 | 1.424 | 1.411 | 1.399 | 1.386 | 1.373 |
| | -12 | 1.632 | 1.617 | 1.602 | 1.588 | 1.574 | 1.559 | 1.546 | 1.532 | 1.518 | 1.504 |
| | -11 | 1.785 | 1.769 | 1.753 | 1.737 | 1.722 | 1.707 | 1.691 | 1.676 | 1.661 | 1.646 |
| | -10 | 1.950 | 1.934 | 1.916 | 1.899 | 1.883 | 1.866 | 1.849 | 1.833 | 1.817 | 1.800 |
| | -9 | 2.131 | 2.122 | 2.093 | 2.075 | 2.057 | 2.039 | 2.021 | 2.003 | 1.985 | 1.968 |
| | -8 | 2.326 | 2.306 | 2.285 | 2.266 | 2.246 | 2.226 | 2.207 | 2.187 | 2.168 | 2.149 |
| | -7 | 2.537 | 2.515 | 2.493 | 2.472 | 2.450 | 2.429 | 2.408 | 2.387 | 2.367 | 2.346 |
| | -6 | 2.765 | 2.742 | 2.718 | 2.695 | 2.672 | 2.649 | 2.626 | 2.603 | 2.581 | 2.559 |
| | -5 | 3.013 | 2.987 | 2.962 | 2.937 | 2.912 | 2.887 | 2.862 | 2.838 | 2.813 | 2.790 |
| | -4 | 3.280 | 3.252 | 3.225 | 3.198 | 3.171 | 3.144 | 3.117 | 3.091 | 3.065 | 3.039 |
| | -3 | 3.568 | 3.539 | 3.509 | 3.480 | 3.451 | 3.422 | 3.393 | 3.364 | 3.336 | 3.308 |
| | -2 | 3.880 | 3.848 | 3.816 | 3.785 | 3.753 | 3.722 | 3.691 | 3.660 | 3.630 | 3.599 |
| | -1 | 4.217 | 4.182 | 4.147 | 4.113 | 4.079 | 4.045 | 4.012 | 3.979 | 3.946 | 3.913 |
| | -0 | 4.579 | 4.542 | 4.504 | 4.467 | 4.431 | 4.395 | 4.359 | 4.323 | 4.287 | 4.252 |
| Liquid water ↓ | 0 | 4.579 | 4.613 | 4.647 | 4.681 | 4.715 | 4.750 | 4.785 | 4.820 | 4.855 | 4.890 |
| | 1 | 4.926 | 4.962 | 4.998 | 5.034 | 5.070 | 5.107 | 5.144 | 5.181 | 5.219 | 5.256 |
| | 2 | 5.294 | 5.332 | 5.370 | 5.408 | 5.447 | 5.486 | 5.525 | 5.565 | 5.605 | 5.645 |
| | 3 | 5.685 | 5.725 | 5.766 | 5.807 | 5.848 | 5.889 | 5.931 | 5.973 | 6.015 | 6.058 |
| | 4 | 6.101 | 6.144 | 6.187 | 6.230 | 6.274 | 6.318 | 6.363 | 6.408 | 6.453 | 6.498 |
| | 5 | 6.543 | 6.589 | 6.635 | 6.681 | 6.728 | 6.775 | 6.822 | 6.869 | 6.917 | 6.965 |
| | 6 | 7.013 | 7.062 | 7.111 | 7.160 | 7.209 | 7.259 | 7.309 | 7.360 | 7.411 | 7.462 |
| | 7 | 7.513 | 7.565 | 7.617 | 7.669 | 7.722 | 7.775 | 7.828 | 7.882 | 7.936 | 7.990 |
| | 8 | 8.045 | 8.100 | 8.155 | 8.211 | 8.267 | 8.323 | 8.380 | 8.437 | 8.494 | 8.551 |
| | 9 | 8.609 | 8.668 | 8.727 | 8.786 | 8.845 | 8.905 | 8.965 | 9.025 | 9.086 | 9.147 |
| | 10 | 9.209 | 9.271 | 9.333 | 9.395 | 9.458 | 9.521 | 9.585 | 9.649 | 9.714 | 9.779 |
| | 11 | 9.844 | 9.910 | 9.976 | 10.042 | 10.109 | 10.176 | 10.244 | 10.312 | 10.380 | 10.449 |
| | 12 | 10.518 | 10.588 | 10.658 | 10.728 | 10.799 | 10.870 | 10.941 | 11.013 | 11.085 | 11.158 |
| | 13 | 11.231 | 11.305 | 11.379 | 11.453 | 11.528 | 11.604 | 11.680 | 11.756 | 11.833 | 11.910 |
| | 14 | 11.987 | 12.065 | 12.144 | 12.223 | 12.302 | 12.382 | 12.462 | 12.543 | 12.624 | 12.706 |
| | 15 | 12.788 | 12.870 | 12.953 | 13.037 | 13.121 | 13.205 | 13.290 | 13.375 | 13.461 | 13.547 |
| | 16 | 13.634 | 13.721 | 13.809 | 13.898 | 13.987 | 14.076 | 14.166 | 14.256 | 14.347 | 14.438 |
| | 17 | 14.530 | 14.622 | 14.715 | 14.809 | 14.903 | 14.997 | 15.092 | 15.188 | 15.284 | 15.380 |
| | 18 | 15.477 | 15.575 | 15.673 | 15.772 | 15.871 | 15.971 | 16.071 | 16.171 | 16.272 | 16.374 |
| | 19 | 16.477 | 16.581 | 16.685 | 16.789 | 16.894 | 16.999 | 17.105 | 17.212 | 17.319 | 17.427 |
| | 20 | 17.535 | 17.644 | 17.753 | 17.863 | 17.974 | 18.085 | 18.197 | 18.309 | 18.422 | 18.536 |
| | 21 | 18.650 | 18.765 | 18.880 | 18.996 | 19.113 | 19.231 | 19.349 | 19.468 | 19.587 | 19.707 |
| | 22 | 19.827 | 19.948 | 20.070 | 20.193 | 20.316 | 20.440 | 20.565 | 20.690 | 20.815 | 20.941 |
| | 23 | 21.068 | 21.196 | 21.324 | 21.453 | 21.583 | 21.714 | 21.845 | 21.977 | 22.110 | 22.243 |
| | 24 | 22.377 | 22.512 | 22.648 | 22.785 | 22.922 | 23.060 | 23.198 | 23.337 | 23.476 | 23.616 |

^aFrom R. H. Perry and C. H. Chilton, Eds., *Chemical Engineers' Handbook*, 5th Edition, McGraw-Hill, New York, 1973, Tables 3-3 and 3-5. Reprinted by permission of McGraw-Hill Book Co.

(continued)

Table B.3 (Continued)

| $T(^{\circ}\text{C})$ | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 25 | 23.756 | 23.897 | 24.039 | 24.182 | 24.326 | 24.471 | 24.617 | 24.764 | 24.912 | 25.060 |
| 26 | 25.209 | 25.359 | 25.509 | 25.660 | 25.812 | 25.964 | 26.117 | 26.271 | 26.426 | 26.582 |
| 27 | 26.739 | 26.897 | 27.055 | 27.214 | 27.374 | 27.535 | 27.696 | 27.858 | 28.021 | 28.185 |
| 28 | 28.349 | 28.514 | 28.680 | 28.847 | 29.015 | 29.184 | 29.354 | 29.525 | 29.697 | 29.870 |
| 29 | 30.043 | 30.217 | 30.392 | 30.568 | 30.745 | 30.923 | 31.102 | 31.281 | 31.461 | 31.642 |
| 30 | 31.824 | 32.007 | 32.191 | 32.376 | 32.561 | 32.747 | 32.934 | 33.122 | 33.312 | 33.503 |
| 31 | 33.695 | 33.888 | 34.082 | 34.276 | 34.471 | 34.667 | 34.864 | 35.062 | 35.261 | 35.462 |
| 32 | 35.663 | 35.865 | 36.068 | 36.272 | 36.477 | 36.683 | 36.891 | 37.099 | 37.308 | 37.518 |
| 33 | 37.729 | 37.942 | 38.155 | 38.369 | 38.584 | 38.801 | 38.018 | 39.237 | 39.457 | 39.677 |
| 34 | 39.898 | 40.121 | 40.344 | 40.569 | 40.796 | 41.023 | 41.251 | 41.480 | 41.710 | 41.942 |
| 35 | 42.175 | 42.409 | 42.644 | 42.880 | 43.117 | 43.355 | 43.595 | 43.836 | 44.078 | 44.320 |
| 36 | 44.563 | 44.808 | 45.054 | 45.301 | 45.549 | 45.799 | 46.050 | 46.302 | 46.556 | 46.811 |
| 37 | 47.067 | 47.324 | 47.582 | 47.841 | 48.102 | 48.364 | 48.627 | 48.891 | 49.157 | 49.424 |
| 38 | 49.692 | 49.961 | 50.231 | 50.502 | 50.774 | 51.048 | 51.323 | 51.600 | 51.879 | 52.160 |
| 39 | 52.442 | 52.725 | 53.009 | 53.294 | 53.580 | 53.867 | 54.156 | 54.446 | 54.737 | 55.030 |
| 40 | 55.324 | 55.61 | 55.91 | 56.21 | 56.51 | 56.81 | 57.11 | 57.41 | 57.72 | 58.03 |
| 41 | 58.34 | 58.65 | 58.96 | 59.27 | 59.58 | 59.90 | 60.22 | 60.54 | 60.86 | 61.18 |
| 42 | 61.50 | 61.82 | 62.14 | 62.47 | 62.80 | 63.13 | 63.46 | 63.79 | 64.12 | 64.46 |
| 43 | 64.80 | 65.14 | 65.48 | 65.82 | 66.16 | 66.51 | 66.86 | 67.21 | 67.56 | 67.91 |
| 44 | 68.26 | 68.61 | 68.97 | 69.33 | 69.69 | 70.05 | 70.41 | 70.77 | 71.14 | 71.51 |
| 45 | 71.88 | 72.25 | 72.62 | 72.99 | 73.36 | 73.74 | 74.12 | 74.50 | 74.88 | 75.26 |
| 46 | 75.65 | 76.04 | 76.43 | 76.82 | 77.21 | 77.60 | 78.00 | 78.40 | 78.80 | 79.20 |
| 47 | 79.60 | 80.00 | 80.41 | 80.82 | 81.23 | 81.64 | 82.05 | 82.46 | 82.87 | 83.29 |
| 48 | 83.71 | 84.13 | 84.56 | 84.99 | 85.42 | 85.85 | 86.28 | 86.71 | 87.14 | 87.58 |
| 49 | 88.02 | 88.46 | 88.90 | 89.34 | 89.79 | 90.24 | 90.69 | 91.14 | 91.59 | 92.05 |
| $T(^{\circ}\text{C})$ | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 50 | 92.51 | 97.20 | 102.09 | 107.20 | 112.51 | 118.04 | 123.80 | 129.82 | 136.08 | 142.60 |
| 60 | 149.38 | 156.43 | 163.77 | 171.38 | 179.31 | 187.54 | 196.09 | 204.96 | 214.17 | 223.73 |
| 70 | 233.7 | 243.9 | 254.6 | 265.7 | 277.2 | 289.1 | 301.4 | 314.1 | 327.3 | 341.0 |
| 80 | 355.1 | 369.7 | 384.9 | 400.6 | 416.8 | 433.6 | 450.9 | 468.7 | 487.1 | 506.1 |
| $T(^{\circ}\text{C})$ | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
| 90 | 525.76 | 527.76 | 529.77 | 531.78 | 533.80 | 535.82 | 537.86 | 539.90 | 541.95 | 544.00 |
| 91 | 546.05 | 548.11 | 550.18 | 552.26 | 554.35 | 556.44 | 558.53 | 560.64 | 562.75 | 564.87 |
| 92 | 566.99 | 569.12 | 571.26 | 573.40 | 575.55 | 577.71 | 579.87 | 582.04 | 584.22 | 586.41 |
| 93 | 588.60 | 590.80 | 593.00 | 595.21 | 597.43 | 599.66 | 601.89 | 604.13 | 606.38 | 608.64 |
| 94 | 610.90 | 613.17 | 615.44 | 617.72 | 620.01 | 622.31 | 624.61 | 626.92 | 629.24 | 631.57 |
| 95 | 633.90 | 636.24 | 638.59 | 640.94 | 643.30 | 645.67 | 648.05 | 650.43 | 652.82 | 655.22 |
| 96 | 657.62 | 660.03 | 662.45 | 664.88 | 667.31 | 669.75 | 672.20 | 674.66 | 677.12 | 679.69 |
| 97 | 682.07 | 684.55 | 687.04 | 689.54 | 692.05 | 694.57 | 697.10 | 699.63 | 702.17 | 704.71 |
| 98 | 707.27 | 709.83 | 712.40 | 714.98 | 717.56 | 720.15 | 722.75 | 725.36 | 727.98 | 730.61 |
| 99 | 733.24 | 735.88 | 738.53 | 741.18 | 743.85 | 746.52 | 749.20 | 751.89 | 754.58 | 757.29 |
| 100 | 760.00 | 762.72 | 765.45 | 768.19 | 770.93 | 773.68 | 776.44 | 779.22 | 782.00 | 784.78 |
| 101 | 787.57 | 790.37 | 793.18 | 796.00 | 798.82 | 801.66 | 804.50 | 807.35 | 810.21 | 813.08 |