# 2.6. DENSITIES

**Unit Conversions** Unless otherwise noted, densities are given in grams per cubic centimeter. To convert to pounds per cubic foot, multiply by 62.43. Temperature conversion: °F = 9/5°C + 32.

**Additional References and Comments** The aqueous solution data tables are from *International Critical Tables,* vol. 3, pp. 115–129, unless otherwise stated. All compositions are in weight percent in vacuo. All density values are $d_4^t = \mathrm{g/mL}$ in vacuo. For more detailed data on densities, see also the *CRC Handbook of Chemistry and Physics,* Chemical Rubber Publishing Co., 97th ed.; or http://hbcponline.com.

# 2.6.1. DENSITIES OF PURE SUBSTANCES

Table 2-31 Density (kg/m$^3$) of Saturated Liquid Water from the Triple Point to the Critical Point

| *T*, K | ρ, kg/m$^3$ | *T*, K | ρ, kg/m$^3$ | *T*, K | ρ, kg/m$^3$ | *T*, K | ρ, kg/m$^3$ | *T*, K | ρ, kg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|
| 273.160* | 999.793 | 352 | 972.479 | 432 | 908.571 | 512 | 814.982 | 592 | 669.930 |
| 274 | 999.843 | 354 | 971.235 | 434 | 906.617 | 514 | 812.164 | 594 | 664.974 |
| 276 | 999.914 | 356 | 969.972 | 436 | 904.645 | 516 | 809.318 | 596 | 659.907 |
| 278 | 999.919 | 358 | 968.689 | 438 | 902.656 | 518 | 806.441 | 598 | 654.722 |
| 280 | 999.862 | 360 | 967.386 | 440 | 900.649 | 520 | 803.535 | 600 | 649.411 |
| 282 | 999.746 | 362 | 966.064 | 442 | 898.624 | 522 | 800.597 | 602 | 643.97 |
| 284 | 999.575 | 364 | 964.723 | 444 | 896.580 | 524 | 797.629 | 604 | 638.38 |
| 286 | 999.352 | 366 | 963.363 | 446 | 894.519 | 526 | 794.628 | 606 | 632.64 |
| 288 | 999.079 | 368 | 961.984 | 448 | 892.439 | 528 | 791.594 | 608 | 626.74 |
| 290 | 998.758 | 370 | 960.587 | 450 | 890.341 | 530 | 788.527 | 610 | 620.65 |
| 292 | 998.392 | 372 | 959.171 | 452 | 888.225 | 532 | 785.425 | 612 | 614.37 |
| 294 | 997.983 | 374 | 957.737 | 454 | 886.089 | 534 | 782.288 | 614 | 607.88 |
| 296 | 997.532 | 376 | 956.285 | 456 | 883.935 | 536 | 779.115 | 616 | 601.15 |
| 298 | 997.042 | 378 | 954.815 | 458 | 881.761 | 538 | 775.905 | 618 | 594.16 |
| 300 | 996.513 | 380 | 953.327 | 460 | 879.569 | 540 | 772.657 | 620 | 586.88 |
| 302 | 995.948 | 382 | 951.822 | 462 | 877.357 | 542 | 769.369 | 622 | 579.26 |
| 304 | 995.346 | 384 | 950.298 | 464 | 875.125 | 544 | 766.042 | 624 | 571.25 |

| T, K | ρ, kg/m | T, K | ρ, kg/m | T, K | ρ, kg/m | T, K | ρ, kg/m | T, K | ρ, kg/m |
|---|---|---|---|---|---|---|---|---|---|
| 306 | 994.711 | 386 | 948.758 | 466 | 872.873 | 546 | 762.674 | 626 | 562.81 |
| 308 | 994.042 | 388 | 947.199 | 468 | 870.601 | 548 | 759.263 | 628 | 553.84 |
| 310 | 993.342 | 390 | 945.624 | 470 | 868.310 | 550 | 755.808 | 630 | 544.25 |
| 312 | 992.610 | 392 | 944.030 | 472 | 865.997 | 552 | 752.308 | 632 | 533.92 |
| 314 | 991.848 | 394 | 942.420 | 474 | 863.664 | 554 | 748.762 | 634 | 522.71 |
| 316 | 991.056 | 396 | 940.793 | 476 | 861.310 | 556 | 745.169 | 636 | 510.42 |
| 318 | 990.235 | 398 | 939.148 | 478 | 858.934 | 558 | 741.525 | 638 | 496.82 |
| 320 | 989.387 | 400 | 937.486 | 480 | 856.537 | 560 | 737.831 | 640 | 481.53 |
| 322 | 988.512 | 402 | 935.807 | 482 | 854.118 | 562 | 734.084 | 641 | 473.01 |
| 324 | 987.610 | 404 | 934.111 | 484 | 851.678 | 564 | 730.283 | 642 | 463.67 |
| 326 | 986.682 | 406 | 932.398 | 486 | 849.214 | 566 | 726.425 | 643 | 453.14 |
| 328 | 985.728 | 408 | 930.668 | 488 | 846.728 | 568 | 722.508 | 644 | 440.73 |
| 330 | 984.750 | 410 | 928.921 | 490 | 844.219 | 570 | 718.530 | 645 | 425.05 |
| 332 | 983.747 | 412 | 927.157 | 492 | 841.686 | 572 | 714.489 | 646 | 402.96 |
| 334 | 982.721 | 414 | 925.375 | 494 | 839.130 | 574 | 710.382 | 647 | 357.34 |
| 336 | 981.671 | 416 | 923.577 | 496 | 836.549 | 576 | 706.206 | 647.096† | 322 |
| 338 | 980.599 | 418 | 921.761 | 498 | 833.944 | 578 | 701.959 | | |
| 340 | 979.503 | 420 | 919.929 | 500 | 831.313 | 580 | 697.638 | | |
| 342 | 978.386 | 422 | 918.079 | 502 | 828.658 | 582 | 693.238 | | |
| 344 | 977.247 | 424 | 916.212 | 504 | 825.976 | 584 | 688.757 | | |
| 346 | 976.086 | 426 | 914.328 | 506 | 823.269 | 586 | 684.190 | | |
| 348 | 974.904 | 428 | 912.426 | 508 | 820.534 | 588 | 679.533 | | |
| 350 | 973.702 | 430 | 910.507 | 510 | 817.772 | 590 | 674.781 | | |

*Triple point

†Critical point

From Wagner, W., and Pruss, A., "The IAPWS Formulation 1995 for the Thermodynamic Properties of Ordinary Water Substance for General and Scientific Use," *J. Phys. Chem. Ref. Data* **31**(2):387–535, 2002.

| | |
|---|---|
| □ | Click here for the **Natural Convection Heat Transfer Coefficients** spreadsheet calculator. |
| □ | Click here for the **Forced Convection Heat Transfer Coefficients** spreadsheet calculator. |
| □ | Click here for the **Thermal Design of Double Pipe Heat Exchangers** spreadsheet calculator. |
| □ | Click here for the **Venturi Meter Liquid Flow Calculations** spreadsheet calculator. |
| □ | Click here for the **Incompressible Orifice Flow Meter Calculations** spreadsheet calculator. |
| □ | Click here for the **Incompressible Flow in Pipes and Channels** spreadsheet calculator. |
| □ | Click here for the **Incompressible Annulus and Duct Flow Calculations** spreadsheet calculator. |

Table 2-32 Densities of Inorganic and Organic Liquids ($mol/dm^3$)

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C_1$ | $C_2$ | $C_3$ | $C_4$ | $C_5$ | $C_6$ | $C_7$ | $T_{min}$, K | Density at $T_{min}$ | $T_{max}$, K | Density at $T_{max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 1 | Acetaldehyde | $C_2H_4O$ | 75-07-0 | 44.05256 | 1.711365 | 0.26355 | 466 | 0.28571 | | | | 149.78 | 21.423 | 466.00 | 6.4935 |
| 105 | 2 | Acetamide | $C_2H_5NO$ | 60-35-5 | 59.0672 | 1.016 | 0.21845 | 761 | 0.26116 | | | | 353.33 | 16.936 | 761.00 | 4.6509 |
| 105 | 3 | Acetic acid | $C_2H_4O_2$ | 64-19-7 | 60.052 | 1.4486 | 0.25892 | 591.95 | 0.2529 | | | | 289.81 | 17.492 | 591.95 | 5.5948 |
| 105 | 4 | Acetic anhydride | $C_4H_6O_3$ | 108-24-7 | 102.08864 | 0.79388 | 0.24119 | 606 | 0.29817 | | | | 200.15 | 11.626 | 606.00 | 3.2915 |
| 105 | 5 | Acetone | $C_3H_6O$ | 67-64-1 | 58.07914 | 1.2332 | 0.25886 | 508.2 | 0.2913 | | | | 178.45 | 15.683 | 508.20 | 4.7640 |
| 105 | 6 | Acetonitrile | $C_2H_3N$ | 75-05-8 | 41.0519 | 1.0693 | 0.20656 | 545.5 | 0.24699 | | | | 229.32 | 20.544 | 545.50 | 5.1767 |
| 105 | 7 | Acetylene | $C_2H_2$ | 74-86-2 | 26.03728 | 2.4507 | 0.27448 | 308.3 | 0.28752 | | | | 192.40 | 23.692 | 308.30 | 8.9285 |
| 105 | 8 | Acrolein | $C_3H_4O$ | 107-02-8 | 56.06326 | 1.3261 | 0.26124 | 506 | 0.2489 | | | | 185.45 | 16.822 | 506.00 | 5.0762 |
| 105 | 9 | Acrylic acid | $C_3H_4O_2$ | 79-10-7 | 72.06266 | 1.2414 | 0.25822 | 615 | 0.30701 | | | | 286.15 | 14.693 | 615.00 | 4.8075 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 10 | Acrylonitrile | $C_3H_3N$ | 107-13-1 | 53.0626 | 1.0379 | 0.22465 | 540 | 0.28921 | | | | 189.63 | 17.254 | 540.00 | 4.6201 |
| 105 | 11 | Air | Mixture | 132259-10-0 | 28.96 | 2.8963 | 0.26733 | 132.45 | 0.27341 | | | | 59.15 | 33.279 | 132.45 | 10.8340 |
| 105 | 12 | Ammonia | $H_3N$ | 7664-41-7 | 17.03052 | 3.5383 | 0.25443 | 405.65 | 0.2888 | | | | 195.41 | 43.141 | 405.65 | 13.9070 |
| 105 | 13 | Anisole | $C_7H_8O$ | 100-66-3 | 108.13782 | 0.77488 | 0.26114 | 645.6 | 0.28234 | | | | 235.65 | 9.6675 | 645.60 | 2.9673 |
| 105 | 14 | Argon | Ar | 7440-37-1 | 39.948 | 3.8469 | 0.2881 | 150.86 | 0.29783 | | | | 83.78 | 35.491 | 150.86 | 13.3530 |
| 105 | 15 | Benzamide | $C_7H_7NO$ | 55-21-0 | 121.13658 | 0.7371 | 0.25487 | 824 | 0.28571 | | | | 403.00 | 8.9381 | 824.00 | 2.8921 |
| 105 | 16 | Benzene | $C_6H_6$ | 71-43-2 | 78.11184 | 1.0259 | 0.26666 | 562.05 | 0.28394 | | | | 278.68 | 11.422 | 562.05 | 3.8472 |
| 105 | 17 | Benzenethiol | $C_6H_6S$ | 108-98-5 | 110.17684 | 0.83573 | 0.26326 | 689 | 0.30798 | | | | 258.27 | 10.074 | 689.00 | 3.1745 |
| 105 | 18 | Benzoic acid | $C_7H_6O_2$ | 65-85-0 | 122.12134 | 0.71587 | 0.24812 | 751 | 0.2857 | | | | 395.45 | 8.8935 | 751.00 | 2.8852 |
| 105 | 19 | Benzonitrile | $C_7H_5N$ | 100-47-0 | 103.1213 | 0.72184 | 0.24606 | 702.3 | 0.28789 | | | | 260.28 | 10.008 | 702.30 | 2.9336 |
| 105 | 20 | Benzophenone | $C_{13}H_{10}O$ | 119-61-9 | 182.2179 | 0.43743 | 0.24833 | 830 | 0.27555 | | | | 321.35 | 5.9496 | 830.00 | 1.7615 |
| 105 | 21 | Benzyl alcohol | $C_7H_8O$ | 100-51-6 | 108.13782 | 0.59867 | 0.22849 | 720.15 | 0.23567 | | | | 257.85 | 9.9051 | 720.15 | 2.6201 |
| 105 | 22 | Benzyl ethyl ether | $C_9H_{12}O$ | 539-30-0 | 136.19098 | 0.60917 | 0.26925 | 662 | 0.2632 | | | | 275.65 | 7.0651 | 662.00 | 2.2625 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 23 | Benzyl mercaptan | $C_7H_8S$ | 100-53-8 | 124.20342 | 0.70797 | 0.25982 | 718 | 0.32144 | | | | 243.95 | 8.8623 | 718.00 | 2.7248 |
| 105 | 24 | Biphenyl | $C_{12}H_{10}$ | 92-52-4 | 154.2078 | 0.52257 | 0.25833 | 773 | 0.27026 | | | | 342.20 | 6.4251 | 773.00 | 2.0229 |
| 105 | 25 | Bromine | $Br_2$ | 7726-95-6 | 159.808 | 2.1872 | 0.29527 | 584.15 | 0.3295 | | | | 265.85 | 20.109 | 584.15 | 7.4075 |
| 105 | 26 | Bromobenzene | $C_6H_5Br$ | 108-86-1 | 157.0079 | 0.82626 | 0.26632 | 670.15 | 0.2821 | | | | 242.43 | 9.9087 | 670.15 | 3.0888 |
| 105 | 27 | Bromoethane | $C_2H_5Br$ | 74-96-4 | 108.965 | 1.3285 | 0.2708 | 503.8 | 0.3012 | | | | 154.25 | 15.809 | 503.80 | 4.9058 |
| 105 | 28 | Bromomethane | $CH_3Br$ | 74-83-9 | 94.93852 | 1.796 | 0.27065 | 464 | 0.28947 | | | | 173.00 | 20.787 | 464.00 | 6.6359 |
| 105 | 29 | 1,2-Butadiene | $C_4H_6$ | 590-19-2 | 54.09044 | 1.187 | 0.26114 | 452 | 0.3065 | | | | 136.95 | 15.123 | 452.00 | 4.5455 |
| 105 | 30 | 1,3-Butadiene | $C_4H_6$ | 106-99-0 | 54.09044 | 1.2346 | 0.27216 | 425 | 0.28707 | | | | 164.25 | 14.058 | 425.00 | 4.5363 |
| 105 | 31 | Butane | $C_4H_{10}$ | 106-97-8 | 58.1222 | 1.0677 | 0.27188 | 425.12 | 0.28688 | | | | 134.86 | 12.62 | 425.12 | 3.9271 |
| 105 | 32 | 1,2-Butanediol | $C_4H_{10}O_2$ | 584-03-2 | 90.121 | 0.81696 | 0.24755 | 680 | 0.24535 | | | | 220.00 | 11.734 | 680.00 | 3.3002 |
| 105 | 33 | 1,3-Butanediol | $C_4H_{10}O_2$ | 107-88-0 | 90.121 | 0.81856 | 0.24967 | 676 | 0.22023 | | | | 196.15 | 11.872 | 676.00 | 3.2786 |
| 105 | 34 | 1-Butanol | $C_4H_{10}O$ | 71-36-3 | 74.1216 | 0.98279 | 0.2683 | 563.1 | 0.25488 | | | | 183.85 | 12.035 | 563.10 | 3.6630 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 35 | 2-Butanol | $C_4H_{10}O$ | 78-92-2 | 74.1216 | 0.97552 | 0.26339 | 535.9 | 0.26864 | | | | 158.45 | 12.473 | 535.90 | 3.7037 |
| 105 | 36 | 1-Butene | $C_4H_8$ | 106-98-9 | 56.1063 2 | 1.0877 | 0.26454 | 419.5 | 0.28 43 | | | | 87.80 | 14.264 | 419.50 | 4.1117 |
| 105 | 37 | *cis*-2-Butene | $C_4H_8$ | 590-18-1 | 56.1063 2 | 1.1591 | 0.27085 | 435.5 | 0.28116 | | | | 134.26 | 13.894 | 435.50 | 4.2795 |
| 105 | 38 | *trans*-2-Butene | $C_4H_8$ | 624-64-6 | 56.1063 2 | 1.1448 | 0.27154 | 428.6 | 0.28419 | | | | 167.62 | 13.08 | 428.60 | 4.2160 |
| 105 | 39 | Butyl acetate | $C_6H_{12}O_2$ | 123-86-4 | 116.15828 | 0.67794 | 0.2637 | 575.4 | 0.29318 | | | | 199.65 | 8.3365 | 575.40 | 2.5709 |
| 105 | 40 | Butylbenzene | $C_{10}H_{14}$ | 104-51-8 | 134.21816 | 0.50812 | 0.25238 | 660.5 | 0.29373 | | | | 185.30 | 7.0264 | 660.50 | 2.0133 |
| 105 | 41 | Butyl mercaptan | $C_4H_{10}S$ | 109-79-5 | 90.1872 | 0.89458 | 0.27463 | 570.1 | 0.28512 | | | | 157.46 | 10.585 | 570.10 | 3.2574 |
| 105 | 42 | sec-Butyl mercaptan | $C_4H_{10}S$ | 513-53-1 | 90.1872 | 0.89137 | 0.27365 | 554 | 0.2953 | | | | 133.02 | 10.761 | 554.00 | 3.2573 |
| 105 | 43 | 1-Butyne | $C_4H_6$ | 107-00-6 | 54.0904 4 | 1.3409 | 0.27892 | 440 | 0.29661 | | | | 147.43 | 14.901 | 440.00 | 4.8075 |
| 105 | 44 | Butyraldehyde | $C_4H_8O$ | 123-72-8 | 72.1057 2 | 1.03387 3 | 0.26739 | 537.2 | 0.28571 | | | | 176.80 | 12.602 | 537.20 | 3.8760 |
| 105 | 45 | Butyric acid | $C_4H_8O_2$ | 107-92-6 | 88.1051 | 0.88443 | 0.25828 | 615.7 | 0.248 | | | | 267.95 | 11.087 | 615.70 | 3.4243 |
| 105 | 46 | Butyronitrile | $C_4H_7N$ | 109-74-0 | 69.1051 | 0.79716 | 0.23168 | 585.4 | 0.28071 | | | | 161.30 | 13.087 | 585.40 | 3.4408 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 47 | Carbon dioxide | $CO_2$ | 124-38-9 | 44.0095 | 2.768 | 0.26212 | 304.21 | 0.29008 | | | | 216.58 | 26.828 | 304.21 | 10.5600 |
| 105 | 48 | Carbon disulfide | $CS_2$ | 75-15-0 | 76.1407 | 1.7968 | 0.28749 | 552 | 0.32026 | | | | 161.11 | 19.064 | 552.00 | 6.2500 |
| 105 | 49 | Carbon monoxide | CO | 630-08-0 | 28.0101 | 2.897 | 0.27532 | 132.92 | 0.2813 | | | | 68.15 | 30.18 | 132.92 | 10.5220 |
| 105 | 50 | Carbon tetrachloride | $CCl_4$ | 56-23-5 | 153.8227 | 0.99835 | 0.274 | 556.35 | 0.287 | | | | 250.33 | 10.843 | 556.35 | 3.6436 |
| 105 | 51 | Carbon tetrafluoride | $CF_4$ | 75-73-0 | 88.0043 | 1.955 | 0.27884 | 227.51 | 0.28571 | | | | 89.56 | 21.211 | 227.51 | 7.0112 |
| 105 | 52 | Chlorine | $Cl_2$ | 7782-50-5 | 70.906 | 2.23 | 0.27645 | 417.15 | 0.2926 | | | | 172.12 | 24.242 | 417.15 | 8.0666 |
| 105 | 53 | Chlorobenzene | $C_6H_5Cl$ | 108-90-7 | 112.5569 | 0.8711 | 0.26805 | 632.35 | 0.2799 | | | | 227.95 | 10.385 | 632.35 | 3.2498 |
| 105 | 54 | Chloroethane | $C_2H_5Cl$ | 75-00-3 | 64.5141 | 1.39625 | 0.26867 | 460.35 | 0.28571 | | | | 136.75 | 17.055 | 460.35 | 5.1969 |
| 105 | 55 | Chloroform | $CHCl_3$ | 67-66-3 | 119.37764 | 1.0841 | 0.2581 | 536.4 | 0.2741 | | | | 209.63 | 13.702 | 536.40 | 4.2003 |
| 105 | 56 | Chloromethane | $CH_3Cl$ | 74-87-3 | 50.4875 | 1.8651 | 0.2627 | 416.25 | 0.28571 | | | | 175.43 | 22.272 | 416.25 | 7.0997 |
| 105 | 57 | 1-Chloropropane | $C_3H_7Cl$ | 540-54-5 | 78.54068 | 1.12465 | 0.2728 | 503.15 | 0.28571 | | | | 150.35 | 13.333 | 503.15 | 4.1226 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 58 | 2-Chloropropane | $C_3H_7Cl$ | 75-29-6 | 78.54068 | 1.1202 | 0.27669 | 489 | 0.27646 | | | | 155.97 | 12.855 | 489.00 | 4.0486 |
| 105 | 59 | *m*-Cresol | $C_7H_8O$ | 108-39-4 | 108.13782 | 0.9061 | 0.28268 | 705.85 | 0.2707 | | | | 285.39 | 9.6115 | 705.85 | 3.2054 |
| 105 | 60 | *o*-Cresol | $C_7H_8O$ | 95-48-7 | 108.13782 | 0.95937 | 0.2882 | 697.55 | 0.2857 | | | | 304.19 | 9.5725 | 697.55 | 3.3288 |
| 105 | 61 | *p*-Cresol | $C_7H_8O$ | 106-44-5 | 108.13782 | 1.1503 | 0.31861 | 704.65 | 0.30104 | | | | 307.93 | 9.4494 | 704.65 | 3.6104 |
| 105 | 62 | Cumene | $C_9H_{12}$ | 98-82-8 | 120.19158 | 0.58711 | 0.25583 | 631 | 0.28498 | | | | 177.14 | 7.9387 | 631.00 | 2.2949 |
| 105 | 63 | Cyanogen | $C_2N_2$ | 460-19-5 | 52.0348 | 1.7805 | 0.26846 | 400.15 | 0.26079 | | | | 245.25 | 18.517 | 400.15 | 6.6323 |
| 105 | 64 | Cyclobutane | $C_4H_8$ | 287-23-0 | 56.10632 | 1.3931 | 0.29255 | 459.93 | 0.24913 | | | | 182.48 | 14.074 | 459.93 | 4.7619 |
| 105 | 65 | Cyclohexane | $C_6H_{12}$ | 110-82-7 | 84.15948 | 0.88998 | 0.27376 | 553.8 | 0.28571 | | | | 279.69 | 9.3804 | 553.80 | 3.2509 |
| 105 | 66 | Cyclohexanol | $C_6H_{12}O$ | 108-93-0 | 100.15888 | 0.8243 | 0.26545 | 650.1 | 0.28495 | | | | 296.60 | 9.4693 | 650.10 | 3.1053 |
| 105 | 67 | Cyclohexanone | $C_6H_{10}O$ | 108-94-1 | 98.143 | 0.86464 | 0.26888 | 653 | 0.29943 | | | | 242.00 | 10.09 | 653.00 | 3.2157 |
| 105 | 68 | Cyclohexene | $C_6H_{10}$ | 110-83-8 | 82.1436 | 0.92997 | 0.27056 | 560.4 | 0.28943 | | | | 169.67 | 11.16 | 560.40 | 3.4372 |
| 105 | 69 | Cyclopentane | $C_5H_{10}$ | 287-92-3 | 70.1329 | 1.0897 | 0.28356 | 511.7 | 0.25142 | | | | 179.28 | 11.906 | 511.70 | 3.8429 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 70 | Cyclopentene | $C_5H_8$ | 142-29-0 | 68.1170 2 | 1.1035 | 0.27035 | 507 | 0.28699 | | | | 138.13 | 13.47 | 507.00 | 4.0817 |
| 105 | 71 | Cyclopropane | $C_3H_6$ | 75-19-4 | 42.0797 4 | 1.7411 | 0.28205 | 398 | 0.29598 | | | | 145.59 | 18.658 | 398.00 | 6.1730 |
| 105 | 72 | Cyclohexylmercaptan | $C_6H_{12}S$ | 1569-69-3 | 116.22448 | 0.78578 | 0.27882 | 664 | 0.31067 | | | | 189.64 | 8.9048 | 664.00 | 2.8182 |
| 105 | 73 | Decanal | $C_{10}H_{20}O$ | 112-31-2 | 156.2652 | 0.478542 | 0.275162 | 674 | 0.28571 | | | | 285.00 | 5.2396 | 674.00 | 1.7391 |
| 105 | 74 | Decane | $C_{10}H_{22}$ | 124-18-5 | 142.28168 | 0.41084 | 0.25175 | 617.7 | 0.28571 | | | | 243.51 | 5.3927 | 617.70 | 1.6319 |
| 105 | 75 | Decanoic acid | $C_{10}H_{20}O_2$ | 334-48-5 | 172.265 | 0.39348 | 0.2492 | 722.1 | 0.28571 | | | | 304.55 | 5.1809 | 722.10 | 1.5790 |
| 105 | 76 | 1-Decanol | $C_{10}H_{22}O$ | 112-30-1 | 158.28108 | 0.38208 | 0.24645 | 688 | 0.26125 | | | | 280.05 | 5.2609 | 688.00 | 1.5503 |
| 105 | 77 | 1-Decene | $C_{10}H_{20}$ | 872-05-9 | 140.2658 | 0.43981 | 0.25661 | 616.6 | 0.29148 | | | | 206.89 | 5.7328 | 616.60 | 1.7139 |
| 105 | 78 | Decylmercaptan | $C_{10}H_{22}S$ | 143-10-2 | 174.34668 | 0.44289 | 0.27636 | 696 | 0.27668 | | | | 247.56 | 5.0048 | 696.00 | 1.6026 |
| 105 | 79 | 1-Decyne | $C_{10}H_{18}$ | 764-93-2 | 138.24992 | 0.46877 | 0.25875 | 619.85 | 0.29479 | | | | 229.15 | 5.8954 | 619.85 | 1.8117 |
| 105 | 80 | Deuterium | $D_2$ | 7782-39-0 | 4.0316 | 5.2115 | 0.315 | 38.35 | 0.28571 | | | | 18.73 | 42.945 | 38.35 | 16.5440 |
| 105 | 81 | 1,1-Dibromoethane | $C_2H_4Br_2$ | 557-91-5 | 187.86116 | 0.95523 | 0.26364 | 628 | 0.29825 | | | | 210.15 | 11.799 | 628.00 | 3.6232 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 82 | 1,2-Dibromoethane | $C_2H_4Br_2$ | 106-93-4 | 187.86116 | 1.01132 | 0.26634 | 650.15 | 0.28571 | | | | 282.85 | 11.704 | 650.15 | 3.8042 |
| 105 | 83 | Dibromomethane | $CH_2Br_2$ | 74-95-3 | 173.83458 | 1.11136 | 0.24834 | 611 | 0.27583 | | | | 220.60 | 15.358 | 611.00 | 4.4842 |
| 105 | 84 | Dibutyl ether | $C_8H_{18}O$ | 142-96-1 | 130.22792 | 0.55941 | 0.27243 | 584.1 | 0.29932 | | | | 175.30 | 6.6071 | 584.10 | 2.0534 |
| 105 | 85 | *m*-Dichlorobenzene | $C_6H_4Cl_2$ | 541-73-1 | 147.00196 | 0.74495 | 0.26147 | 683.95 | 0.31526 | | | | 248.39 | 9.1207 | 683.95 | 2.8491 |
| 105 | 86 | *o*-Dichlorobenzene | $C_6H_4Cl_2$ | 95-50-1 | 147.00196 | 0.74404 | 0.26112 | 705 | 0.30815 | | | | 256.15 | 9.1658 | 705.00 | 2.8494 |
| 105 | 87 | *p*-Dichlorobenzene | $C_6H_4Cl_2$ | 106-46-7 | 147.00196 | 0.74858 | 0.26276 | 684.75 | 0.30788 | | | | 326.14 | 8.5175 | 684.75 | 2.8489 |
| 105 | 88 | 1,1-Dichloroethane | $C_2H_4Cl_2$ | 75-34-3 | 98.95916 | 1.10155 | 0.26533 | 523 | 0.287 | | | | 176.19 | 13.549 | 523.00 | 4.1665 |
| 105 | 89 | 1,2-Dichloroethane | $C_2H_4Cl_2$ | 107-06-2 | 98.95916 | 1.25191 | 0.27698 | 561.6 | 0.30492 | | | | 237.49 | 13.462 | 561.60 | 4.5458 |
| 105 | 90 | Dichloromethane | $CH_2Cl_2$ | 75-09-2 | 84.93258 | 1.38997 | 0.25678 | 510 | 0.29002 | | | | 178.01 | 17.974 | 510.00 | 5.4120 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 91 | 1,1-Dichloropropane | $C_3H_6Cl_2$ | 78-99-9 | 112.98574 | 0.95551 | 0.27794 | 560 | 0.24132 | | | | 192.50 | 10.925 | 560.00 | 3.4364 |
| 105 | 92 | 1,2-Dichloropropane | $C_3H_6Cl_2$ | 78-87-5 | 112.98574 | 0.89833 | 0.26142 | 572 | 0.2868 | | | | 172.71 | 11.526 | 572.00 | 3.4363 |
| 105 | 93 | Diethanolamine | $C_4H_{11}NO_2$ | 111-42-2 | 105.13564 | 0.68184 | 0.23796 | 736.6 | 0.2062 | | | | 301.15 | 10.39 | 736.60 | 2.8654 |
| 105 | 94 | Diethylamine | $C_4H_{11}N$ | 109-89-7 | 73.13684 | 0.85379 | 0.25675 | 496.6 | 0.27027 | | | | 223.35 | 10.575 | 496.60 | 3.3254 |
| 105 | 95 | Diethylether | $C_4H_{10}O$ | 60-29-7 | 74.1216 | 0.95554 | 0.26847 | 466.7 | 0.2814 | | | | 156.85 | 11.487 | 466.70 | 3.5587 |
| 105 | 96 | Diethylsulfide | $C_4H_{10}S$ | 352-93-2 | 90.1872 | 0.82227 | 0.26314 | 557.15 | 0.27369 | | | | 169.20 | 10.47 | 557.15 | 3.1248 |
| 105 | 97 | 1,1-Difluoroethane | $C_2H_4F_2$ | 75-37-6 | 66.04997 | 1.43445 | 0.25774 | 386.44 | 0.28178 | | | | 154.56 | 18.006 | 386.44 | 5.5657 |
| 105 | 98 | 1,2-Difluoroethane | $C_2H_4F_2$ | 624-72-6 | 66.04997 | 1.173 | 0.22856 | 445 | 0.28571 | | | | 179.60 | 18.336 | 445.00 | 5.1321 |
| 105 | 99 | Difluoromethane | $CH_2F_2$ | 75-10-5 | 52.02339 | 1.99773 | 0.24653 | 351.26 | 0.28153 | | | | 136.95 | 27.399 | 351.26 | 8.1017 |
| 105 | 100 | Di–sopropylamine | $C_6H_{15}N$ | 108-18-9 | 101.19 | 0.61781 | 0.25786 | 523.1 | 0.271 | | | | 176.85 | 8.0541 | 523.10 | 2.3970 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 101 | Di–sopropylether | $C_6H_{14}O$ | 108-20-3 | 102.17476 | 0.69213 | 0.26974 | 500.05 | 0.28571 | | | | 187.65 | 8.0673 | 500.05 | 2.5659 |
| 105 | 102 | Di–sopropylketone | $C_7H_{14}O$ | 565-80-0 | 114.18546 | 0.64619 | 0.26881 | 576 | 0.28036 | | | | 204.81 | 7.6796 | 576.00 | 2.4039 |
| 105 | 103 | 1,1-Diethoxyethane | $C_4H_{10}O_2$ | 534-15-6 | 90.121 | 0.89368 | 0.26599 | 507.8 | 0.28571 | | | | 159.95 | 11.029 | 507.80 | 3.3598 |
| 105 | 104 | 1,2-Diethoxypropane | $C_5H_{12}O_2$ | 7778-85-0 | 104.14758 | 0.76327 | 0.26742 | 543 | 0.28571 | | | | 226.10 | 8.8431 | 543.00 | 2.8542 |
| 105 | 105 | Dimethylacetylene | $C_4H_6$ | 503-17-3 | 54.09044 | 1.1717 | 0.25895 | 473.2 | 0.27289 | | | | 240.91 | 13.767 | 473.20 | 4.5248 |
| 105 | 106 | Dimethylamine | $C_2H_7N$ | 124-40-3 | 45.08368 | 1.5436 | 0.27784 | 437.2 | 0.25720 | | | | 180.96 | 16.964 | 437.20 | 5.5557 |
| 105 | 107 | 2,3-Dimethylbutane | $C_6H_{14}$ | 79-29-8 | 86.17536 | 0.75565 | 0.27305 | 500 | 0.27408 | | | | 145.19 | 9.031 | 500.00 | 2.7706 |
| 105 | 108 | 1,1-Dimethylcyclohexane | $C_8H_{16}$ | 590-66-9 | 112.21264 | 0.55873 | 0.25143 | 591.15 | 0.27758 | | | | 239.66 | 7.3417 | 591.15 | 2.2222 |
| 105 | 109 | *cis*-1,2-Dimethylcyclohexane | $C_8H_{16}$ | 2207-01-4 | 112.21264 | 0.52953 | 0.24358 | 606.15 | 0.26809 | | | | 223.16 | 7.5783 | 606.15 | 2.1739 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 110 | *trans*-1,2-Dimethylcyclohexane | $C_8H_{16}$ | 6876-23-9 | 112.21264 | 0.54405 | 0.25026 | 596.15 | 0.26058 | | | | 184.99 | 7.62658 | 596.15 | 2.17739 |
| 105 | 111 | Dimethyl disulfide | $C_2H_6S_2$ | 624-92-0 | 94.199904 | 1.10158 | 0.27866 | 615 | 0.31082 | | | | 188.44 | 12.413 | 615.00 | 3.96683 |
| 105 | 112 | Dimethyl ether | $C_2H_6O$ | 115-10-6 | 46.06844 | 1.56993 | 0.26779 | 400.1 | 0.28282 | | | | 131.65 | 18.95 | 400.10 | 5.85778 |
| 105 | 113 | *N*,*N*-Dimethyl formamide | $C_3H_7NO$ | 68-12-2 | 73.09378 | 0.89615 | 0.23478 | 649.6 | 0.28091 | | | | 212.72 | 13.954 | 649.60 | 3.81770 |
| 105 | 114 | 2,3-Dimethylpentane | $C_7H_{16}$ | 565-59-3 | 100.20194 | 0.72352 | 0.28629 | 537.3 | 0.27121 | | | | 141.23 | 7.9932 | 537.30 | 2.52772 |
| 105 | 115 | Dimethyl phthalate | $C_{10}H_{10}O_4$ | 131-11-3 | 194.184 | 0.47977 | 0.25428 | 766 | 0.30722 | | | | 274.18 | 6.2334 | 766.00 | 1.88668 |
| 105 | 116 | Dimethylsilane | $C_2H_8Si$ | 1111-74-6 | 60.17042 | 1.02214 | 0.26351 | 402 | 0.28421 | | | | 122.93 | 12.898 | 402.00 | 3.87661 |
| 105 | 117 | Dimethyl sulfide | $C_2H_6S$ | 75-18-3 | 62.134 | 1.40229 | 0.27991 | 503.04 | 0.27241 | | | | 174.88 | 15.556 | 503.04 | 5.01220 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 118 | Dimethyl sulfoxide | $C_2H_6OS$ | 67-68-5 | 78.13344 | 1.1096 | 0.25189 | 729 | 0.3311 | | | | 291.67 | 14.111 | 729.00 | 4.4051 |
| 105 | 119 | Dimethyl terephthalate | $C_{10}H_{10}O_4$ | 120-61-6 | 194.184 | 0.48611 | 0.25715 | 777.4 | 0.28571 | | | | 413.79 | 5.6397 | 777.40 | 1.8904 |
| 105 | 120 | 1,4-Dioxane | $C_4H_8O_2$ | 123-91-1 | 88.10512 | 1.1819 | 0.2813 | 587 | 0.3047 | | | | 284.95 | 11.838 | 587.00 | 4.2016 |
| 105 | 121 | Diphenyl ether | $C_{12}H_{10}O$ | 101-84-8 | 170.2072 | 0.52133 | 0.26218 | 766.8 | 0.31033 | | | | 300.03 | 6.2648 | 766.80 | 1.9884 |
| 105 | 122 | Dipropylamine | $C_6H_{15}N$ | 142-84-7 | 101.19 | 0.659 | 0.26428 | 550 | 0.2766 | | | | 210.15 | 7.9929 | 550.00 | 2.4936 |
| 105 | 123 | Dodecane | $C_{12}H_{26}$ | 112-40-3 | 170.33484 | 0.33267 | 0.24664 | 658 | 0.28571 | | | | 263.57 | 4.5205 | 658.00 | 1.3488 |
| 105 | 124 | Eicosane | $C_{20}H_{42}$ | 112-95-8 | 282.54748 | 0.18166 | 0.23351 | 768 | 0.28571 | | | | 309.58 | 2.7293 | 768.00 | 0.7780 |
| 105 | 125 | Ethane | $C_2H_6$ | 74-84-0 | 30.069 | 1.9122 | 0.27937 | 305.32 | 0.29187 | | | | 90.35 | 21.64 | 305.32 | 6.8447 |
| 105 | 126 | Ethanol | $C_2H_6O$ | 64-17-5 | 46.06844 | 1.6288 | 0.27469 | 514 | 0.23178 | | | | 159.05 | 19.41 | 514.00 | 5.9296 |
| 105 | 127 | Ethyl acetate | $C_4H_8O_2$ | 141-78-6 | 88.10512 | 0.8996 | 0.25856 | 523.3 | 0.278 | | | | 189.60 | 11.478 | 523.30 | 3.4793 |
| 105 | 128 | Ethylamine | $C_2H_7N$ | 75-04-7 | 45.08368 | 1.0936 | 0.22636 | 456.15 | 0.25522 | | | | 192.15 | 17.588 | 456.15 | 4.8312 |
| 105 | 129 | Ethylbenzene | $C_8H_{10}$ | 100-41-4 | 106.165 | 0.70041 | 0.26162 | 617.15 | 0.28454 | | | | 178.20 | 9.0407 | 617.15 | 2.6772 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | C | C | C | C | C | C | C | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 130 | Ethyl benzoate | $C_9H_{10}O_2$ | 93-89-0 | 150.1745 | 0.48864 | 0.23894 | 698 | 0.28421 | | | | 238.45 | 7.2908 | 698.00 | 2.0450 |
| 105 | 131 | 2-Ethylbutanoic acid | $C_6H_{12}O_2$ | 88-09-5 | 116.15828 | 0.66085 | 0.25707 | 655 | 0.31103 | | | | 258.15 | 8.2198 | 655.00 | 2.5707 |
| 105 | 132 | Ethyl butyrate | $C_6H_{12}O_2$ | 105-54-4 | 116.15828 | 0.63566 | 0.25613 | 571 | 0.27829 | | | | 175.15 | 8.4912 | 571.00 | 2.4818 |
| 105 | 133 | Ethylcyclohexane | $C_8H_{16}$ | 1678-91-7 | 112.21264 | 0.61587 | 0.26477 | 609.15 | 0.28054 | | | | 161.84 | 7.8679 | 609.15 | 2.3261 |
| 105 | 134 | Ethylcyclopentane | $C_7H_{14}$ | 1640-89-7 | 98.18606 | 0.71751 | 0.26903 | 569.5 | 0.27733 | | | | 134.71 | 9.0179 | 569.50 | 2.6670 |
| 105 | 135 | Ethylene | $C_2H_4$ | 74-85-1 | 28.05316 | 2.0961 | 0.27657 | 282.34 | 0.29147 | | | | 104.00 | 23.326 | 282.34 | 7.5789 |
| 105 | 136 | Ethylenediamine | $C_2H_8N_2$ | 107-15-3 | 60.09832 | 0.7842 | 0.20702 | 593 | 0.20254 | | | | 284.29 | 15.055 | 593.00 | 3.7880 |
| 105 | 137 | Ethylene glycol | $C_2H_6O_2$ | 107-21-1 | 62.06784 | 1.315 | 0.25125 | 720 | 0.21868 | | | | 260.15 | 18.31 | 720.00 | 5.2338 |
| 105 | 138 | Ethylenimine | $C_2H_5N$ | 151-56-4 | 43.0678 | 1.3462 | 0.23289 | 537 | 0.23357 | | | | 195.20 | 21.45 | 537.00 | 5.7804 |
| 105 | 139 | Ethylene oxide | $C_2H_4O$ | 75-21-8 | 44.05256 | 1.836 | 0.26024 | 469.15 | 0.2696 | | | | 160.65 | 23.477 | 469.15 | 7.0550 |
| 105 | 140 | Ethyl formate | $C_3H_6O_2$ | 109-94-4 | 74.07854 | 1.1343 | 0.26168 | 508.4 | 0.2791 | | | | 193.55 | 14.006 | 508.40 | 4.3347 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 141 | 2-Ethylhexanoic acid | $C_8H_{16}O_2$ | 149-57-5 | 144.211 | 0.47428 | 0.25028 | 674.6 | 0.25442 | | | | 155.15 | 6.926 | 674.60 | 1.8950 |
| 105 | 142 | Ethylhexyl ether | $C_8H_{18}O$ | 5756-43-4 | 130.22792 | 0.55729 | 0.2714 | 583 | 0.29538 | | | | 180.00 | 6.612 | 583.00 | 2.0534 |
| 105 | 143 | Ethylisopropyl ether | $C_5H_{12}O$ | 625-54-7 | 88.14818 | 0.8185 | 0.26929 | 489 | 0.30621 | | | | 140.00 | 9.9236 | 489.00 | 3.0395 |
| 105 | 144 | Ethylisopropyl ketone | $C_6H_{12}O$ | 565-69-5 | 100.15888 | 0.68162 | 0.25152 | 567 | 0.3182 | | | | 204.15 | 8.9749 | 567.00 | 2.7100 |
| 105 | 145 | Ethyl mercaptan | $C_2H_6S$ | 75-08-1 | 62.13404 | 1.3047 | 0.2694 | 499.15 | 0.27866 | | | | 125.26 | 16.242 | 499.15 | 4.8430 |
| 105 | 146 | Ethyl propionate | $C_5H_{10}O_2$ | 105-37-3 | 102.1317 | 0.7405 | 0.25563 | 546 | 0.2795 | | | | 199.25 | 9.6317 | 546.00 | 2.8968 |
| 105 | 147 | Ethylpropyl ether | $C_5H_{12}O$ | 628-32-0 | 88.14818 | 0.7908 | 0.266 | 500.23 | 0.292 | | | | 145.65 | 9.8474 | 500.23 | 2.9729 |
| 105 | 148 | Ethyltrichlorosilane | $C_2H_5Cl_3Si$ | 115-21-9 | 163.506 | 0.61243 | 0.24681 | 559.95 | 0.30858 | | | | 167.55 | 8.6934 | 559.95 | 2.4814 |
| 105 | 149 | Fluorine | $F_2$ | 7782-41-4 | 37.9968064 | 4.2895 | 0.28587 | 144.12 | 0.28776 | | | | 53.48 | 44.888 | 144.12 | 15.0050 |
| 105 | 150 | Fluorobenzene | $C_6H_5F$ | 462-06-6 | 96.1023032 | 1.0146 | 0.27277 | 560.09 | 0.28291 | | | | 230.94 | 11.374 | 560.09 | 3.7196 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 151 | Fluoroethane | $C_2H_5F$ | 353-36-6 | 48.0595 | 1.693858 | 0.269323 | 375.31 | 0.28571 | | | | 129.95 | 20.099 | 375.31 | 6.2893 |
| 105 | 152 | Fluoromethane | $CH_3F$ | 593-53-3 | 34.03292 | 2.2261 | 0.25072 | 317.42 | 0.27343 | | | | 131.35 | 29.345 | 317.42 | 8.8788 |
| 105 | 153 | Formaldehyde | $CH_2O$ | 50-00-0 | 30.02598 | 3.897011 | 0.331636 | 420 | 0.28571 | | | | 155.15 | 30.92 | 420.00 | 11.7510 |
| 105 | 154 | Formamide | $CH_3NO$ | 75-12-7 | 45.04062 | 1.2486 | 0.20352 | 771 | 0.25178 | | | | 275.60 | 25.488 | 771.00 | 6.1350 |
| 105 | 155 | Formic acid | $CH_2O_2$ | 64-18-6 | 46.0257 | 1.938 | 0.24225 | 588 | 0.24435 | | | | 281.45 | 26.806 | 588.00 | 8.00000 |
| 105 | 156 | Furan | $C_4H_4O$ | 110-00-9 | 68.07396 | 1.1339 | 0.24741 | 490.15 | 0.2612 | | | | 187.55 | 15.702 | 490.15 | 4.5831 |
| 105 | 157 | Helium-4 | He | 7440-59-7 | 4.0026 | 7.2475 | 0.41865 | 5.2 | 0.24096 | | | | 2.20 | 37.115 | 5.20 | 17.3120 |
| 105 | 158 | Heptadecane | $C_{17}H_{36}$ | 629-78-7 | 240.46774 | 0.21897 | 0.23642 | 736 | 0.28571 | | | | 295.13 | 3.2189 | 736.00 | 0.9262 |
| 105 | 159 | Heptanal | $C_7H_{14}O$ | 111-71-7 | 114.18546 | 0.577362 | 0.250575 | 620 | 0.28571 | | | | 229.80 | 7.7462 | 620.00 | 2.3041 |
| 105 | 160 | Heptane | $C_7H_{16}$ | 142-82-5 | 100.20194 | 0.61259 | 0.26211 | 540.2 | 0.28141 | | | | 182.57 | 7.6998 | 540.20 | 2.3371 |
| 105 | 161 | Heptanoic acid | $C_7H_{14}O_2$ | 111-14-8 | 130.185 | 0.53066 | 0.24729 | 677.3 | 0.28289 | | | | 265.83 | 7.2212 | 677.30 | 2.1459 |
| 105 | 162 | 1-Heptanol | $C_7H_{16}O$ | 111-70-6 | 116.20134 | 0.55687 | 0.24725 | 632.3 | 0.31471 | | | | 239.15 | 7.5022 | 632.30 | 2.2523 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 163 | 2-Heptanol | $C_7H_{16}O$ | 543-49-7 | 116.20134 | 0.59339 | 0.26002 | 608.3 | 0.26968 | | | | 220.00 | 7.5173 | 608.30 | 2.2805 |
| 105 | 164 | 3-Heptanone | $C_7H_{14}O$ | 106-35-4 | 114.18546 | 0.59268 | 0.25663 | 606.6 | 0.27766 | | | | 234.15 | 7.5751 | 606.60 | 2.3095 |
| 105 | 165 | 2-Heptanone | $C_7H_{14}O$ | 110-43-0 | 114.18546 | 0.58247 | 0.25279 | 611.4 | 0.29818 | | | | 238.15 | 7.5514 | 611.40 | 2.3042 |
| 105 | 166 | 1-Heptene | $C_7H_{14}$ | 592-76-7 | 98.18606 | 0.66016 | 0.26657 | 537.4 | 0.28571 | | | | 154.12 | 8.2257 | 537.40 | 2.4765 |
| 105 | 167 | Heptyl mercaptan | $C_7H_{16}S$ | 1639-09-4 | 132.26694 | 0.58622 | 0.2726 | 645 | 0.29644 | | | | 229.92 | 6.7277 | 645.00 | 2.1505 |
| 105 | 168 | 1-Heptyne | $C_7H_{12}$ | 628-71-7 | 96.17018 | 0.67304 | 0.26045 | 547 | 0.28388 | | | | 192.22 | 8.4922 | 547.00 | 2.5841 |
| 105 | 169 | Hexadecane | $C_{16}H_{34}$ | 544-76-3 | 226.44116 | 0.23289 | 0.23659 | 723 | 0.28571 | | | | 291.31 | 3.415 | 723.00 | 0.9844 |
| 105 | 170 | Hexanal | $C_6H_{12}O$ | 66-25-1 | 100.15888 | 0.668504 | 0.252695 | 594 | 0.28571 | | | | 214.93 | 8.8708 | 594.00 | 2.6455 |
| 105 | 171 | Hexane | $C_6H_{14}$ | 110-54-3 | 86.17536 | 0.70824 | 0.26411 | 507.6 | 0.27537 | | | | 177.83 | 8.747 | 507.60 | 2.6816 |
| 105 | 172 | Hexanoic acid | $C_6H_{12}O_2$ | 142-62-1 | 116.158 | 0.62833 | 0.25598 | 660.2 | 0.25304 | | | | 269.25 | 8.0964 | 660.20 | 2.4546 |
| 105 | 173 | 1-Hexanol | $C_6H_{14}O$ | 111-27-3 | 102.17476 | 0.70093 | 0.26776 | 611.3 | 0.24919 | | | | 228.55 | 8.456 | 611.30 | 2.6178 |
| 105 | 174 | 2-Hexanol | $C_6H_{14}O$ | 626-93-7 | 102.175 | 0.67393 | 0.25948 | 585.3 | 0.26552 | | | | 223.00 | 8.5181 | 585.30 | 2.5972 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 175 | 2-Hexanone | $C_6H_{12}O$ | 591-78-6 | 100.15888 | 0.67816 | 0.25634 | 587.61 | 0.28365 | | | | 217.35 | 8.7319 | 587.61 | 2.6455 |
| 105 | 176 | 3-Hexanone | $C_6H_{12}O$ | 589-38-8 | 100.15888 | 0.67666 | 0.25578 | 582.82 | 0.27746 | | | | 217.50 | 8.7631 | 582.82 | 2.6455 |
| 105 | 177 | 1-Hexene | $C_6H_{12}$ | 592-41-6 | 84.15948 | 0.76925 | 0.26809 | 504 | 0.28571 | | | | 133.39 | 9.5815 | 504.00 | 2.8694 |
| 105 | 178 | 3-Hexyne | $C_6H_{10}$ | 928-49-4 | 82.1436 | 0.78045 | 0.26065 | 544 | 0.28571 | | | | 170.05 | 10.021 | 544.00 | 2.9942 |
| 105 | 179 | Hexyl mercaptan | $C_6H_{14}S$ | 111-31-9 | 118.24036 | 0.66372 | 0.27345 | 623 | 0.29185 | | | | 192.62 | 7.7733 | 623.00 | 2.4272 |
| 105 | 180 | 1-Hexyne | $C_6H_{10}$ | 693-02-7 | 82.1436 | 0.84427 | 0.27185 | 516.2 | 0.2771 | | | | 141.25 | 10.23 | 516.20 | 3.1056 |
| 105 | 181 | 2-Hexyne | $C_6H_{10}$ | 764-35-2 | 82.1436 | 0.76277 | 0.25248 | 549 | 0.31611 | | | | 183.65 | 10.133 | 549.00 | 3.0211 |
| 105 | 182 | Hydrazine | $H_4N_2$ | 302-01-2 | 32.04516 | 1.0516 | 0.16613 | 653.15 | 0.1898 | | | | 274.69 | 31.934 | 653.15 | 6.3300 |
| 105 | 183 | Hydrogen | $H_2$ | 1333-74-0 | 2.01588 | 5.414 | 0.34893 | 33.19 | 0.2706 | | | | 13.95 | 38.487 | 33.19 | 15.5160 |
| 105 | 184 | Hydrogen bromide | BrH | 10035-10-6 | 80.91194 | 2.832 | 0.2832 | 363.15 | 0.28571 | | | | 185.15 | 27.985 | 363.15 | 10.0000 |
| 105 | 185 | Hydrogen chloride | ClH | 7647-01-0 | 36.46094 | 3.342 | 0.2729 | 324.65 | 0.3217 | | | | 158.97 | 34.854 | 324.65 | 12.2460 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 186 | Hydrogen cyanide | CHN | 74-90-8 | 27.025334 | 1.3413 | 0.18589 | 456.65 | 0.28206 | | | | 259.83 | 27.202 | 456.65 | 7.2156 |
| 105 | 187 | Hydrogen fluoride | FH | 7664-39-3 | 20.006343 2 | 2.8061 | 0.19362 | 461.15 | 0.29847 | | | | 189.79 | 58.861 | 461.15 | 14.4930 |
| 105 | 188 | Hydrogen sulfide | $H_2S$ | 7783-06-4 | 34.080888 | 2.7672 | 0.27369 | 373.53 | 0.29015 | | | | 187.68 | 29.13 | 373.53 | 10.1110 |
| 105 | 189 | Isobutyric acid | $C_4H_8O_2$ | 79-31-2 | 88.105112 | 0.88575 | 0.25736 | 605 | 0.26265 | | | | 227.15 | 11.42 | 605.00 | 3.4417 |
| 105 | 190 | Isopropylamine | $C_3H_9N$ | 75-31-0 | 59.110226 | 1.2801 | 0.2828 | 471.85 | 0.2972 | | | | 177.95 | 13.561 | 471.85 | 4.5265 |
| 105 | 191 | Malonic acid | $C_3H_4O_4$ | 141-82-2 | 104.06146 | 0.87969 | 0.24543 | 834 | 0.28571 | | | | 409.15 | 11.417 | 834.00 | 3.5843 |
| 105 | 192 | Methacrylic acid | $C_4H_6O_2$ | 79-41-4 | 86.089244 | 0.87025 | 0.24383 | 662 | 0.28571 | | | | 288.15 | 11.834 | 662.00 | 3.5691 |
| 105 | 193 | Methane | $CH_4$ | 74-82-8 | 16.0425 | 2.9214 | 0.28976 | 190.56 | 0.28881 | | | | 90.69 | 28.18 | 190.56 | 10.0820 |
| 105 | 194 | Methanol | $CH_4O$ | 67-56-1 | 32.041846 | 2.3267 | 0.27073 | 512.5 | 0.24713 | | | | 175.47 | 27.915 | 512.50 | 8.5942 |
| 105 | 195 | *N*-Methylacetamide | $C_3H_7NO$ | 79-16-3 | 73.093778 | 0.88268 | 0.23568 | 718 | 0.27379 | | | | 301.15 | 13.012 | 718.00 | 3.7452 |
| 105 | 196 | Methylacetate | $C_3H_6O_2$ | 79-20-9 | 74.078544 | 1.13 | 0.2593 | 506.55 | 0.2764 | | | | 175.15 | 14.475 | 506.55 | 4.3579 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 197 | Methyl acetylene | $C_3H_4$ | 74-99-7 | 40.06386 | 1.6085 | 0.26436 | 402.4 | 0.27987 | | | | 170.45 | 19.031 | 402.40 | 6.0845 |
| 105 | 198 | Methyl acrylate | $C_4H_6O_2$ | 96-33-3 | 86.08924 | 0.97286 | 0.26267 | 536 | 0.25 08 | | | | 196.32 | 12.203 | 536.00 | 3.7037 |
| 105 | 199 | Methyl amine | $CH_5N$ | 74-89-5 | 31.0571 | 1.39 | 0.21405 | 430.05 | 0.2275 | | | | 179.69 | 25.378 | 430.05 | 6.4938 |
| 105 | 200 | Methyl benzoate | $C_8H_8O_2$ | 93-58-3 | 136.14792 | 0.53382 | 0.23274 | 693 | 0.28147 | | | | 260.75 | 8.2202 | 693.00 | 2.2936 |
| 105 | 201 | 3-Methyl-1,2-butadiene | $C_5H_8$ | 598-25-4 | 68.11702 | 0.84623 | 0.24625 | 490 | 0.29041 | | | | 159.53 | 11.994 | 490.00 | 3.4365 |
| 105 | 202 | 2-Methylbutane | $C_5H_{12}$ | 78-78-4 | 72.14878 | 0.91991 | 0.27815 | 460.4 | 0.28667 | | | | 113.25 | 10.764 | 460.40 | 3.3072 |
| 105 | 203 | 2-Methylbutanoic acid | $C_5H_{10}O_2$ | 116-53-0 | 102.1317 | 0.72762 | 0.25244 | 643 | 0.28571 | | | | 193.00 | 9.9915 | 643.00 | 2.8823 |
| 105 | 204 | 3-Methyl-1-butanol | $C_5H_{12}O$ | 123-51-3 | 88.1482 | 0.8189 | 0.26974 | 577.2 | 0.23573 | | | | 155.95 | 10.248 | 577.20 | 3.0359 |
| 105 | 205 | 2-Methyl-1-butene | $C_5H_{10}$ | 563-46-2 | 70.1329 | 0.91619 | 0.26752 | 465 | 0.28164 | | | | 135.58 | 11.332 | 465.00 | 3.4248 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 206 | 2-Methyl-2-butene | $C_5H_{10}$ | 513-35-9 | 70.1329 | 0.93391 | 0.27275 | 470 | 0.2578 | | | | 139.39 | 11.216 | 470.00 | 3.4241 |
| 105 | 207 | 2-Methyl-1-butene-3-yne | $C_5H_6$ | 78-80-8 | 66.10114 | 1.11157 | 0.27671 | 492 | 0.30821 | | | | 160.15 | 12.581 | 492.00 | 4.0320 |
| 105 | 208 | Methylbutylether | $C_5H_{12}O$ | 628-28-4 | 88.14818 | 0.83163 | 0.27514 | 512.74 | 0.27553 | | | | 157.48 | 9.7581 | 512.74 | 3.0395 |
| 105 | 209 | Methylbutylsulfide | $C_5H_{12}S$ | 628-29-5 | 104.214 | 0.75509 | 0.27183 | 593 | 0.29127 | | | | 175.30 | 9.0056 | 593.00 | 2.7778 |
| 105 | 210 | 3-Methyl-1-butyne | $C_5H_8$ | 598-23-2 | 68.11702 | 0.94575 | 0.26008 | 463.2 | 0.30807 | | | | 183.45 | 11.519 | 463.20 | 3.6364 |
| 105 | 211 | Methylbutyrate | $C_5H_{10}O_2$ | 623-42-7 | 102.1317 | 0.76983 | 0.26173 | 554.5 | 0.26879 | | | | 187.35 | 9.7638 | 554.50 | 2.9413 |
| 105 | 212 | Methylchlorosilane | $CH_5ClSi$ | 993-00-0 | 80.5889 | 1.0674 | 0.26257 | 442 | 0.26569 | | | | 139.05 | 13.626 | 442.00 | 4.0652 |
| 105 | 213 | Methylcyclohexane | $C_7H_{14}$ | 108-87-2 | 98.18606 | 0.73109 | 0.26971 | 572.1 | 0.29185 | | | | 146.58 | 9.0173 | 572.10 | 2.7107 |
| 105 | 214 | 1-Methylcyclohexanol | $C_7H_{14}O$ | 590-67-0 | 114.18546 | 0.7013 | 0.266 | 686 | 0.28571 | | | | 285.15 | 8.2091 | 686.00 | 2.6365 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 215 | *cis*-2-Methylcyclohexanol | $C_7H_{14}O$ | 7443-70-1 | 114.18546 | 0.70973 | 0.26544 | 614 | 0.26016 | | | | 280.15 | 8.2931 | 614.00 | 2.6738 |
| 105 | 216 | *trans*-2-Methylcyclohexanol | $C_7H_{14}O$ | 7443-52-9 | 114.18546 | 0.72836 | 0.27241 | 617 | 0.2478 | | | | 269.15 | 8.2628 | 617.00 | 2.6738 |
| 105 | 217 | Methylcyclopentane | $C_6H_{12}$ | 96-37-7 | 84.15948 | 0.84758 | 0.27037 | 532.7 | 0.28258 | | | | 130.73 | 10.491 | 532.70 | 3.1349 |
| 105 | 218 | 1-Methylcyclopentene | $C_6H_{10}$ | 693-89-0 | 82.1436 | 0.88824 | 0.26914 | 542 | 0.27874 | | | | 146.62 | 10.98 | 542.00 | 3.3003 |
| 105 | 219 | 3-Methylcyclopentene | $C_6H_{10}$ | 1120-62-3 | 82.1436 | 0.91109 | 0.276 | 526 | 0.26756 | | | | 168.54 | 10.538 | 526.00 | 3.3004 |
| 105 | 220 | Methyldichlorosilane | $CH_4Cl_2Si$ | 75-54-7 | 115.03396 | 0.97608 | 0.28209 | 483 | 0.22529 | | | | 182.55 | 10.789 | 483.00 | 3.4602 |
| 105 | 221 | Methylethylether | $C_3H_8O$ | 540-67-0 | 60.05092 | 1.2635 | 0.27878 | 437.8 | 0.2744 | | | | 160.00 | 13.995 | 437.80 | 4.5322 |
| 105 | 222 | Methylethylketone | $C_4H_8O$ | 78-93-3 | 72.10572 | 0.93767 | 0.25035 | 535.5 | 0.29964 | | | | 186.48 | 12.663 | 535.50 | 3.7454 |
| 105 | 223 | Methylethylsulfide | $C_3H_8S$ | 624-89-5 | 76.1606 | 1.067 | 0.27102 | 533 | 0.29364 | | | | 167.23 | 12.671 | 533.00 | 3.9370 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 224 | Methyl formate | $C_2H_4O_2$ | 107-31-3 | 60.05196 | 1.525 | 0.2634 | 487.2 | 0.28006 | | | | 174.15 | 18.811 | 487.20 | 5.7897 |
| 105 | 225 | Methylisobutylether | $C_5H_{12}O$ | 625-44-5 | 88.14818 | 0.84005 | 0.27638 | 497 | 0.27645 | | | | 188.00 | 9.3871 | 497.00 | 3.0395 |
| 105 | 226 | Methylisobutylketone | $C_6H_{12}O$ | 108-10-1 | 100.15888 | 0.71687 | 0.26453 | 574.6 | 0.28918 | | | | 189.15 | 8.8617 | 574.60 | 2.7100 |
| 105 | 227 | Methyl Isocyanate | $C_2H_3NO$ | 624-83-9 | 57.05132 | 1.0228 | 0.20692 | 488 | 0.28571 | | | | 256.15 | 17.666 | 488.00 | 4.9430 |
| 105 | 228 | Methylisopropylether | $C_4H_{10}O$ | 598-53-8 | 74.1216 | 0.97887 | 0.27017 | 464.48 | 0.28998 | | | | 127.93 | 11.933 | 464.48 | 3.6232 |
| 105 | 229 | Methylisopropylketone | $C_5H_{10}O$ | 563-80-4 | 86.1323 | 0.86567 | 0.26836 | 553.4 | 0.28364 | | | | 180.15 | 10.46 | 553.40 | 3.2258 |
| 105 | 230 | Methylisopropylsulfide | $C_4H_{10}S$ | 1551-21-9 | 90.1872 | 0.78912 | 0.25915 | 553.1 | 0.26512 | | | | 171.64 | 10.352 | 553.10 | 3.0450 |
| 105 | 231 | Methylmercaptan | $CH_4S$ | 74-93-1 | 48.10746 | 1.9323 | 0.28018 | 469.95 | 0.28523 | | | | 150.18 | 21.564 | 469.95 | 6.8966 |
| 105 | 232 | Methylmethacrylate | $C_5H_8O_2$ | 80-62-6 | 100.11582 | 0.7761 | 0.25068 | 566 | 0.29773 | | | | 224.95 | 10.176 | 566.00 | 3.0960 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 233 | 2-Methyloctanoic acid | $C_9H_{18}O_2$ | 3004-93-1 | 158.23802 | 0.4416 | 0.2521 | 694 | 0.28532 | | | | 240.00 | 5.938 | 694.00 | 1.75117 |
| 105 | 234 | 2-Methylpentane | $C_6H_{14}$ | 107-83-5 | 86.17536 | 0.72701 | 0.26754 | 497.7 | 0.28268 | | | | 119.55 | 9.2041 | 497.70 | 2.71774 |
| 105 | 235 | Methyl pentyl ether | $C_6H_{14}O$ | 628-80-8 | 102.17476 | 0.71004 | 0.26981 | 546.49 | 0.29974 | | | | 176.00 | 8.445 | 546.49 | 2.63116 |
| 105 | 236 | 2-Methylpropane | $C_4H_{10}$ | 75-28-5 | 58.1222 | 1.0631 | 0.27506 | 407.8 | 0.2758 | | | | 113.54 | 12.574 | 407.80 | 3.8650 |
| 105 | 237 | 2-Methyl-2-propanol | $C_4H_{10}O$ | 75-65-0 | 74.1216 | 0.92128 | 0.25442 | 506.2 | 0.27586 | | | | 298.97 | 10.556 | 506.20 | 3.6211 |
| 105 | 238 | 2-Methylpropene | $C_4H_8$ | 115-11-7 | 56.10632 | 1.1446 | 0.2724 | 417.9 | 0.28172 | | | | 132.81 | 13.507 | 417.90 | 4.2019 |
| 105 | 239 | Methyl propionate | $C_4H_8O_2$ | 554-12-1 | 88.10512 | 0.9147 | 0.2594 | 530.6 | 0.2774 | | | | 185.65 | 11.678 | 530.60 | 3.5262 |
| 105 | 240 | Methylpropyl ether | $C_4H_{10}O$ | 557-17-5 | 74.1216 | 0.96145 | 0.26536 | 476.25 | 0.30088 | | | | 133.97 | 12.043 | 476.25 | 3.6232 |
| 105 | 241 | Methylpropyl sulfide | $C_4H_{10}S$ | 3877-15-4 | 90.1872 | 0.87496 | 0.26862 | 565 | 0.30259 | | | | 160.17 | 10.689 | 565.00 | 3.2572 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 242 | Methylsilane | $CH_6Si$ | 992-94-9 | 46.1438 4 | 1.3052 | 0.26757 | 352.5 | 0.28799 | | | | 116.34 | 15.791 | 352.50 | 4.8780 |
| 105 | 243 | alpha-Methylstyrene | $C_9H_{10}$ | 98-83-9 | 118.1757 | 0.64856 | 0.25877 | 654 | 0.31444 | | | | 249.95 | 8.0099 | 654.00 | 2.5063 |
| 105 | 244 | Methyl tert-butyl ether | $C_5H_{12}O$ | 1634-04-4 | 88.1482 | 0.81794 8 | 0.26910 5 | 497.1 | 0.28571 | | | | 164.55 | 9.7955 | 497.10 | 3.0395 |
| 105 | 245 | Methyl vinyl ether | $C_3H_6O$ | 107-25-5 | 58.0791 4 | 1.2587 | 0.26433 | 437 | 0.25819 | | | | 151.15 | 15.691 | 437.00 | 4.7619 |
| 105 | 246 | Naphthalene | $C_{10}H_8$ | 91-20-3 | 128.17052 | 0.6348 | 0.25838 | 748.4 | 0.27727 | | | | 333.15 | 7.7545 | 748.40 | 2.4568 |
| 105 | 247 | Neon | Ne | 7440-01-9 | 20.1797 | 7.3718 | 0.3067 | 44.4 | 0.2786 | | | | 24.56 | 61.796 | 44.40 | 24.0360 |
| 105 | 248 | Nitroethane | $C_2H_5NO_2$ | 79-24-3 | 75.0666 | 1.0024 | 0.23655 | 593 | 0.278 | | | | 183.63 | 15.556 | 593.00 | 4.2376 |
| 105 | 249 | Nitrogen | $N_2$ | 7727-37-9 | 28.0134 | 3.2091 | 0.2861 | 126.2 | 0.2966 | | | | 63.15 | 31.063 | 126.20 | 11.2170 |
| 105 | 250 | Nitrogen trifluoride | $F_3N$ | 7783-54-2 | 71.0019 1 | 2.3736 | 0.2817 | 234 | 0.29529 | | | | 66.46 | 26.555 | 234.00 | 8.4260 |
| 105 | 251 | Nitromethane | $CH_3NO_2$ | 75-52-5 | 61.0400 2 | 1.3728 | 0.23793 | 588.15 | 0.29601 | | | | 244.60 | 19.632 | 588.15 | 5.7698 |
| 105 | 252 | Nitrous oxide | $N_2O$ | 10024-97-2 | 44.0128 | 2.781 | 0.27244 | 309.57 | 0.2882 | | | | 182.30 | 27.928 | 309.57 | 10.2080 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 253 | Nitric oxide | NO | 10102-43-9 | 30.0061 | 5.246 | 0.3044 | 180.15 | 0.242 | | | | 109.50 | 44.487 | 180.15 | 17.2340 |
| 105 | 254 | Nonadecane | $C_{19}H_{40}$ | 629-92-5 | 268.5209 | 0.19199 | 0.23337 | 758 | 0.28571 | | | | 305.04 | 2.8889 | 758.00 | 0.8227 |
| 105 | 255 | Nonanal | $C_9H_{18}O$ | 124-19-6 | 142.23862 | 0.473233 | 0.256918 | 658.5 | 0.28571 | | | | 267.30 | 5.9415 | 658.50 | 1.8420 |
| 105 | 256 | Nonane | $C_9H_{20}$ | 111-84-2 | 128.2551 | 0.46321 | 0.25444 | 594.6 | 0.28571 | | | | 219.66 | 6.0427 | 594.60 | 1.8205 |
| 105 | 257 | Nonanoic acid | $C_9H_{18}O_2$ | 112-05-0 | 158.238 | 0.41582 | 0.24284 | 710.7 | 0.30036 | | | | 285.55 | 5.7592 | 710.70 | 1.7123 |
| 105 | 258 | 1-Nonanol | $C_9H_{20}O$ | 143-08-8 | 144.2545 | 0.43682 | 0.25161 | 670.9 | 0.2498 | | | | 268.15 | 5.8496 | 670.90 | 1.7361 |
| 105 | 259 | 2-Nonanol | $C_9H_{20}O$ | 628-99-9 | 144.255 | 0.419258 | 0.241912 | 649.5 | 0.28571 | | | | 238.15 | 6.0223 | 649.50 | 1.7331 |
| 105 | 260 | 1-Nonene | $C_9H_{18}$ | 124-11-8 | 126.23922 | 0.48661 | 0.25722 | 593.1 | 0.28571 | | | | 191.91 | 6.3717 | 593.10 | 1.8918 |
| 105 | 261 | Nonylmercaptan | $C_9H_{20}S$ | 1455-21-6 | 160.3201 | 0.47377 | 0.27052 | 681 | 0.30284 | | | | 253.05 | 5.4532 | 681.00 | 1.7513 |
| 105 | 262 | 1-Nonyne | $C_9H_{16}$ | 3452-09-3 | 124.22334 | 0.52152 | 0.25918 | 598.05 | 0.29177 | | | | 223.15 | 6.5369 | 598.05 | 2.0122 |
| 105 | 263 | Octadecane | $C_{18}H_{38}$ | 593-45-3 | 254.49432 | 0.20448 | 0.23474 | 747 | 0.28571 | | | | 301.31 | 3.0418 | 747.00 | 0.8711 |
| 105 | 264 | Octanal | $C_8H_{16}O$ | 124-13-0 | 128.212 | 0.525901 | 0.25664 | 638.9 | 0.28571 | | | | 251.65 | 6.6608 | 638.90 | 2.0492 |
| 105 | 265 | Octane | $C_8H_{18}$ | 111-65-9 | 114.22852 | 0.5266 | 0.25693 | 568.7 | 0.28571 | | | | 216.38 | 6.7049 | 568.70 | 2.0496 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 266 | Octanoic acid | $C_8H_{16}O_2$ | 124-07-2 | 144.211 | 0.48251 | 0.25196 | 694.26 | 0.26842 | | | | 289.65 | 6.3107 | 694.26 | 1.9150 |
| 105 | 267 | 1-Octanol | $C_8H_{18}O$ | 111-87-5 | 130.22792 | 0.48979 | 0.24931 | 652.3 | 0.27824 | | | | 257.65 | 6.5738 | 652.30 | 1.9646 |
| 105 | 268 | 2-Octanol | $C_8H_{18}O$ | 123-96-6 | 130.228 | 0.52497 | 0.26186 | 629.8 | 0.25257 | | | | 241.55 | 6.5625 | 629.80 | 2.0048 |
| 105 | 269 | 2-Octanone | $C_8H_{16}O$ | 111-13-7 | 128.21204 | 0.50006 | 0.24851 | 632.7 | 0.29942 | | | | 252.85 | 6.6477 | 632.70 | 2.0122 |
| 105 | 270 | 3-Octanone | $C_8H_{16}O$ | 106-68-3 | 128.21204 | 0.5108 | 0.25386 | 627.7 | 0.26735 | | | | 255.55 | 6.6283 | 627.70 | 2.0121 |
| 105 | 271 | 1-Octene | $C_8H_{16}$ | 111-66-0 | 112.21264 | 0.55449 | 0.25952 | 566.9 | 0.28571 | | | | 171.45 | 7.2155 | 566.90 | 2.1366 |
| 105 | 272 | Octyl mercaptan | $C_8H_{18}S$ | 111-88-6 | 146.29352 | 0.52577 | 0.27234 | 667.3 | 0.30063 | | | | 223.95 | 6.0987 | 667.30 | 1.9306 |
| 105 | 273 | 1-Octyne | $C_8H_{14}$ | 629-05-0 | 110.19676 | 0.58945 | 0.26052 | 574 | 0.28532 | | | | 193.55 | 7.4832 | 574.00 | 2.2626 |
| 105 | 274 | Oxalic acid | $C_2H_2O_4$ | 144-62-7 | 90.03488 | 1.1911 | 0.27038 | 828 | 0.28571 | | | | 462.65 | 12.405 | 828.00 | 4.4053 |
| 105 | 275 | Oxygen | $O_2$ | 7782-44-7 | 31.9988 | 3.9143 | 0.28772 | 154.58 | 0.2924 | | | | 54.35 | 40.77 | 154.58 | 13.6050 |
| 105 | 276 | Ozone | $O_3$ | 10028-15-6 | 47.9982 | 3.3592 | 0.29884 | 261 | 0.28523 | | | | 80.15 | 33.361 | 261.00 | 11.2410 |
| 105 | 277 | Pentadecane | $C_{15}H_{32}$ | 629-62-9 | 212.41458 | 0.25142 | 0.23837 | 708 | 0.28571 | | | | 283.07 | 3.6423 | 708.00 | 1.0547 |
| 105 | 278 | Pentanal | $C_5H_{10}O$ | 110-62-3 | 86.1323 | 0.85658 | 0.26811 | 566.1 | 0.27354 | | | | 191.59 | 10.353 | 566.10 | 3.1949 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C_1$ | $C_2$ | $C_3$ | $C_4$ | $C_5$ | $C_6$ | $C_7$ | $T_1$, K | Density at $T_1$ | $T_2$, K | Density at $T_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 279 | Pentane | $C_5H_{12}$ | 109-66-0 | 72.14878 | 0.84947 | 0.26726 | 469.7 | 0.27789 | | | | 143.42 | 10.474 | 469.70 | 3.1784 |
| 105 | 280 | Pentanoic acid | $C_5H_{10}O_2$ | 109-52-4 | 102.132 | 0.73455 | 0.25636 | 639.16 | 0.25522 | | | | 239.15 | 9.5869 | 639.16 | 2.8653 |
| 105 | 281 | 1-Pentanol | $C_5H_{12}O$ | 71-41-0 | 88.1482 | 0.81754 | 0.26732 | 588.1 | 0.25348 | | | | 195.56 | 10.061 | 588.10 | 3.0583 |
| 105 | 282 | 2-Pentanol | $C_5H_{12}O$ | 6032-29-7 | 88.1482 | 0.81577 | 0.26594 | 561 | 0.25551 | | | | 200.00 | 10.017 | 561.00 | 3.0675 |
| 105 | 283 | 2-Pentanone | $C_5H_{10}O$ | 107-87-9 | 86.1323 | 0.90411 | 0.27207 | 561.08 | 0.30669 | | | | 196.29 | 10.398 | 561.08 | 3.3231 |
| 105 | 284 | 3-Pentanone | $C_5H_{10}O$ | 96-22-0 | 86.1323 | 0.71811 | 0.24129 | 560.95 | 0.27996 | | | | 234.18 | 10.102 | 560.95 | 2.9761 |
| 105 | 285 | 1-Pentene | $C_5H_{10}$ | 109-67-1 | 70.1329 | 0.89816 | 0.26608 | 464.8 | 0.28571 | | | | 108.02 | 11.521 | 464.80 | 3.3755 |
| 105 | 286 | 2-Pentylmercaptan | $C_5H_{12}S$ | 2084-19-7 | 104.21378 | 0.65858 | 0.25367 | 584.3 | 0.28571 | | | | 160.75 | 9.073 | 584.30 | 2.5962 |
| 105 | 287 | Pentylmercaptan | $C_5H_{12}S$ | 110-66-7 | 104.21378 | 0.75345 | 0.27047 | 598 | 0.30583 | | | | 197.45 | 8.8575 | 598.00 | 2.7857 |
| 105 | 288 | 1-Pentyne | $C_5H_8$ | 627-19-0 | 68.11702 | 0.8491 | 0.2352 | 481.2 | 0.353 | | | | 167.45 | 12.532 | 481.20 | 3.6101 |
| 105 | 289 | 2-Pentyne | $C_5H_8$ | 627-21-4 | 68.11702 | 0.92099 | 0.25419 | 519 | 0.31077 | | | | 163.83 | 12.24 | 519.00 | 3.6232 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 290 | Phenanthrene | $C_{14}H_{10}$ | 85-01-8 | 178.2292 | 0.45554 | 0.2523 | 869 | 0.24841 | | | | 372.38 | 5.9853 | 869.00 | 1.8055 |
| 105 | 291 | Phenol | $C_6H_6O$ | 108-95-2 | 94.11124 | 1.3798 | 0.31598 | 694.25 | 0.32768 | | | | 314.06 | 11.244 | 694.25 | 4.3667 |
| 105 | 292 | Phenyl isocyanate | $C_7H_5NO$ | 103-71-9 | 119.1207 | 0.63163 | 0.23373 | 653 | 0.28571 | | | | 243.15 | 9.6466 | 653.00 | 2.7024 |
| 105 | 293 | Phthalic anhydride | $C_8H_4O_3$ | 85-44-9 | 148.11556 | 0.5393 | 0.22704 | 791 | 0.248 | | | | 404.15 | 8.2218 | 791.00 | 2.3754 |
| 105 | 294 | Propadiene | $C_3H_4$ | 463-49-0 | 40.06386 | 1.6087 | 0.26543 | 394 | 0.29895 | | | | 136.87 | 19.479 | 394.00 | 6.0607 |
| 105 | 295 | Propane | $C_3H_8$ | 74-98-6 | 44.09562 | 1.3757 | 0.27453 | 369.83 | 0.29359 | | | | 85.47 | 16.583 | 369.83 | 5.0111 |
| 105 | 296 | 1-Propanol | $C_3H_8O$ | 71-23-8 | 60.09502 | 1.2457 | 0.27281 | 536.8 | 0.23994 | | | | 146.95 | 15.206 | 536.80 | 4.5662 |
| 105 | 297 | 2-Propanol | $C_3H_8O$ | 67-63-0 | 60.095 | 1.1799 | 0.2644 | 508.3 | 0.24653 | | | | 185.26 | 14.663 | 508.30 | 4.4626 |
| 105 | 298 | Propenylcyclohexene | $C_9H_{14}$ | 13511-13-2 | 122.20746 | 0.61255 | 0.26769 | 636 | 0.28571 | | | | 199.00 | 7.4763 | 636.00 | 2.2883 |
| 105 | 299 | Propionaldehyde | $C_3H_6O$ | 123-38-6 | 58.07914 | 1.2861 | 0.26236 | 503.6 | 0.30004 | | | | 165.00 | 16.075 | 503.60 | 4.9020 |
| 105 | 300 | Propionic acid | $C_3H_6O_2$ | 79-09-4 | 74.0785 | 1.0969 | 0.25568 | 600.81 | 0.26857 | | | | 252.45 | 13.935 | 600.81 | 4.2901 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | *C* | *C* | *C* | *C* | *C* | *C* | *C* | *T*, K | Density at *T* | *T*, K | Density at *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 301 | Propionitrile | $C_3H_5N$ | 107-12-0 | 55.0785 | 0.91281 | 0.22125 | 561.3 | 0.26811 | | | | 180.37 | 16.067 | 561.30 | 4.1257 |
| 105 | 302 | Propyl acetate | $C_5H_{10}O_2$ | 109-60-4 | 102.1317 | 0.73041 | 0.25456 | 549.73 | 0.27666 | | | | 178.15 | 9.7941 | 549.73 | 2.8693 |
| 105 | 303 | Propylamine | $C_3H_9N$ | 107-10-8 | 59.11026 | 0.9195 | 0.23878 | 496.95 | 0.2461 | | | | 188.36 | 13.764 | 496.95 | 3.8508 |
| 105 | 304 | Propylbenzene | $C_9H_{12}$ | 103-65-1 | 120.19158 | 0.57233 | 0.25171 | 638.35 | 0.29616 | | | | 173.55 | 7.9821 | 638.35 | 2.2738 |
| 105 | 305 | Propylene | $C_3H_6$ | 115-07-1 | 42.07974 | 1.4403 | 0.26852 | 364.85 | 0.28775 | | | | 87.89 | 18.07 | 364.85 | 5.3638 |
| 105 | 306 | Propyl formate | $C_4H_8O_2$ | 110-74-7 | 88.10512 | 0.915 | 0.26134 | 538 | 0.28 | | | | 180.25 | 11.59 | 538.00 | 3.5012 |
| 105 | 307 | 2-Propylmercaptan | $C_3H_8S$ | 75-33-2 | 76.16062 | 1.093 | 0.27762 | 517 | 0.29781 | | | | 142.61 | 12.61 | 517.00 | 3.9370 |
| 105 | 308 | Propylmercaptan | $C_3H_8S$ | 107-03-9 | 76.16062 | 1.07114 | 0.27214 | 536.6 | 0.29481 | | | | 159.95 | 12.716 | 536.60 | 3.9369 |
| 105 | 309 | 1,2-Propylene glycol | $C_3H_8O_2$ | 57-55-6 | 76.09442 | 1.09023 | 0.26106 | 626 | 0.20459 | | | | 213.15 | 14.363 | 626.00 | 4.1841 |
| 105 | 310 | Quinone | $C_6H_4O_2$ | 106-51-4 | 108.09476 | 0.83228 | 0.25385 | 683 | 0.23658 | | | | 388.85 | 10.082 | 683.00 | 3.2786 |
| 105 | 311 | Silicon tetrafluoride | $F_4Si$ | 7783-61-1 | 104.07911 | 1.1945 | 0.24128 | 259 | 0.16693 | | | | 186.35 | 15.635 | 259.00 | 4.9507 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 312 | Styrene | $C_8H_8$ | 100-42-5 | 104.14912 | 0.7397 | 0.2603 | 636 | 0.30009 | | | | 242.54 | 9.10888 | 636.00 | 2.84017 |
| 105 | 313 | Succinic acid | $C_4H_6O_4$ | 110-15-6 | 118.08804 | 0.65882 | 0.21741 | 838 | 0.28571 | | | | 460.85 | 10.21 | 838.00 | 3.03303 |
| 105 | 314 | Sulfur dioxide | $O_2S$ | 7446-09-5 | 64.0638 | 2.106 | 0.25842 | 430.75 | 0.2895 | | | | 197.67 | 25.298 | 430.75 | 8.1495 |
| 105 | 315 | Sulfur hexafluoride | $F_6S$ | 2551-62-4 | 146.0554192 | 1.3587 | 0.2701 | 318.69 | 0.2921 | | | | 223.15 | 12.631 | 318.69 | 5.03004 |
| 105 | 316 | Sulfur trioxide | $O_3S$ | 7446-11-9 | 80.0632 | 1.4969 | 0.19013 | 490.85 | 0.4359 | | | | 289.95 | 24.241 | 490.85 | 7.8730 |
| 105 | 317 | Terephthalic acid | $C_8H_6O_4$ | 100-21-0 | 166.13084 | 0.41922 | 0.17775 | 883.6 | 0.28571 | | | | 700.15 | 7.102 | 883.60 | 2.3585 |
| 105 | 318 | *o*-Terphenyl | $C_{18}H_{14}$ | 84-15-1 | 230.30376 | 0.3448 | 0.25116 | 857 | 0.29268 | | | | 329.35 | 4.5526 | 857.00 | 1.3728 |
| 100 | 318 | *o*-Terphenyl | $C_{18}H_{14}$ | 84-15-1 | 230.30376 | 5.7136 | $-0.003474$ | | | | | | 288.15 | 4.7126 | 313.19 | 4.6256 |
| 105 | 319 | Tetradecane | $C_{14}H_{30}$ | 629-59-4 | 198.388 | 0.27248 | 0.24007 | 693 | 0.28571 | | | | 279.01 | 3.889 | 693.00 | 1.1350 |
| 105 | 320 | Tetrahydrofuran | $C_4H_8O$ | 109-99-9 | 72.10572 | 1.2543 | 0.28084 | 540.15 | 0.2912 | | | | 164.65 | 13.998 | 540.15 | 4.4662 |
| 105 | 321 | 1,2,3,4-Tetrahydronaphthalene | $C_{10}H_{12}$ | 119-64-2 | 132.20228 | 0.67717 | 0.27772 | 720 | 0.2878 | | | | 237.38 | 7.638 | 720.00 | 2.4383 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 322 | Tetrahydrothiophene | $C_4H_8S$ | 110-01-0 | 88.17132 | 1.16128 | 0.28954 | 631.95 | 0.28674 | | | | 176.99 | 12.4408 | 631.95 | 4.01160 |
| 105 | 323 | 2,2,3,3-Tetramethylbutane | $C_8H_{18}$ | 594-82-1 | 114.22852 | 0.58988 | 0.27201 | 568 | 0.27341 | | | | 373.96 | 5.7242 | 568.00 | 2.16186 |
| 105 | 324 | Thiophene | $C_4H_4S$ | 110-02-1 | 84.13956 | 1.2874 | 0.28194 | 579.35 | 0.30781 | | | | 234.94 | 13.43 | 579.35 | 4.56062 |
| 105 | 325 | Toluene | $C_7H_8$ | 108-88-3 | 92.13842 | 0.8792 | 0.27136 | 591.75 | 0.29241 | | | | 178.18 | 10.487 | 591.75 | 3.24000 |
| 105 | 326 | 1,1,2-Trichloroethane | $C_2H_3Cl_3$ | 79-00-5 | 133.40422 | 0.9062 | 0.25475 | 602 | 0.31 | | | | 236.50 | 11.478 | 602.00 | 3.55772 |
| 105 | 327 | Tridecane | $C_{13}H_{28}$ | 629-50-5 | 184.36142 | 0.29934 | 0.2433 | 675 | 0.28571 | | | | 267.76 | 4.1817 | 675.00 | 1.23003 |
| 105 | 328 | Triethylamine | $C_6H_{15}N$ | 121-44-8 | 101.19 | 0.7035 | 0.27386 | 535.15 | 0.2872 | | | | 158.45 | 8.2843 | 535.15 | 2.56888 |
| 105 | 329 | Trimethylamine | $C_3H_9N$ | 75-50-3 | 59.11026 | 1.01116 | 0.25683 | 433.25 | 0.2696 | | | | 156.08 | 13.144 | 433.25 | 3.93888 |
| 105 | 330 | 1,2,3-Trimethylbenzene | $C_9H_{12}$ | 526-73-8 | 120.19158 | 0.6531 | 0.27002 | 664.5 | 0.26268 | | | | 243.15 | 7.7278 | 664.50 | 2.41887 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 331 | 1,2,4-Trimethylbenzene | $C_9H_{12}$ | 95-63-6 | 120.19158 | 0.60394 | 0.25956 | 649.1 | 0.27713 | | | | 229.33 | 7.689 | 649.10 | 2.3268 |
| 105 | 332 | 2,2,4-Trimethylpentane | $C_8H_{18}$ | 540-84-1 | 114.22852 | 0.59059 | 0.27424 | 543.8 | 0.28 47 | | | | 165.78 | 6.9146 | 543.80 | 2.1536 |
| 105 | 333 | 2,3,3-Trimethylpentane | $C_8H_{18}$ | 560-21-4 | 114.22852 | 0.6028 | 0.27446 | 573.5 | 0.2741 | | | | 172.22 | 7.0934 | 573.50 | 2.1963 |
| 105 | 334 | 1,3,5-Trinitrobenzene | $C_6H_3N_3O_6$ | 99-35-4 | 213.10452 | 0.48195 | 0.23093 | 846 | 0.28571 | | | | 398.40 | 7.0825 | 846.00 | 2.0870 |
| 105 | 335 | 2,4,6-Trinitrotoluene | $C_7H_5N_3O_6$ | 118-96-7 | 227.1311 | 0.37378 | 0.21379 | 828 | 0.29905 | | | | 354.00 | 6.4521 | 828.00 | 1.7484 |
| 105 | 336 | Undecane | $C_{11}H_{24}$ | 1120-21-4 | 156.30826 | 0.36703 | 0.24876 | 639 | 0.28571 | | | | 247.57 | 4.9453 | 639.00 | 1.4754 |
| 105 | 337 | 1-Undecanol | $C_{11}H_{24}O$ | 112-42-5 | 172.30766 | 0.33113 | 0.23676 | 703.9 | 0.2762 | | | | 288.45 | 4.8594 | 703.90 | 1.3986 |
| 105 | 338 | Vinyl acetate | $C_4H_6O_2$ | 108-05-4 | 86.08924 | 0.9591 | 0.2593 | 519.13 | 0.27448 | | | | 180.35 | 12.287 | 519.13 | 3.6988 |
| 105 | 339 | Vinyl acetylene | $C_4H_4$ | 689-97-4 | 52.07456 | 1.2703 | 0.26041 | 454 | 0.297 | | | | 173.15 | 15.664 | 454.00 | 4.8781 |

| Eqn | Cmpd. no. | Name | Formula | CAS | Mol. wt. | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $C$ | $T$, K | Density at $T$ | $T$, K | Density at $T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 340 | Vinyl chloride | $C_2H_3Cl$ | 75-01-4 | 62.49822 | 1.5115 | 0.2707 | 432 | 0.27216 | | | | 119.36 | 18.481 | 432.00 | 5.5837 |
| 105 | 341 | Vinyl trichlorosilane | $C_2H_3Cl_3Si$ | 75-94-5 | 161.48972 | 0.59595 | 0.24314 | 543.15 | 0.24856 | | | | 178.35 | 8.8236 | 543.15 | 2.4511 |
| 100 | 342 | Water | $H_2O$ | 7732-18-5 | 18.01528 | −13.851 | 0.64038 | −0.00191 | 1.2411E-06 | | | | 273.16 | 55.497 | 353.15 | 54.010 |
| 119 | 342 | Water | $H_2O$ | 7732-18-5 | 18.01528 | 17.874 | 35.618 | 19.655 | −9.1306 | −31.367 | −813.56 | −17421 | 273.16 | 55.487 | 647.096 | 17.8740 |
| 105 | 343 | *m*-Xylene | $C_8H_{10}$ | 108-38-3 | 106.165 | 0.68902 | 0.26086 | 617 | 0.27479 | | | | 225.30 | 8.648 | 617.00 | 2.6413 |
| 105 | 344 | *o*-Xylene | $C_8H_{10}$ | 95-47-6 | 106.165 | 0.69962 | 0.26143 | 630.3 | 0.27365 | | | | 247.98 | 8.6229 | 630.30 | 2.6761 |
| 105 | 345 | *p*-Xylene | $C_8H_{10}$ | 106-42-3 | 106.165 | 0.67752 | 0.25887 | 616.2 | 0.27596 | | | | 286.41 | 8.1614 | 616.20 | 2.6172 |

Except for *o*-terphenyl and water, liquid density ρ is calculated by Eqn 105: $\rho = C_1/(C_2^{[1+(1-T/C3)^{\wedge}C4]})$ where ρ is in mol/dm$^3$ and $T$ is in K. The pressure is equal to the vapor pressure for pressures greater than 1 atm and equal to 1 atm when the vapor pressure is less than 1 atm.

Equation (2-100), used for the limited temperature ranges as noted for *o*-terphenyl and water, is $\rho = C_1 + C_2T + C_3T^2 + C_4T^3$.

Equation (2-119), used for water, is $\rho = C_1 + C_2\tau^{1/3} + C_3\tau^{2/3} + C_4\tau^{5/3} + C_5\tau^{16/3} + C_6\tau^{43/3} + C_7\tau^{110/3}$ where $\tau = 1 - T/TC$, and $TC$ = critical temperature (647.096 K).

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