**Refrigerant 22 Properties in Metric Units**

| Temperature *(oC)* | Presssure *(MPa)* | Liquid Density *(kg/m3)* | Vapor Volume *(m3/kg)* | Enthalpy *(kJ/kg)* | | Entropy *(kJ/kgK)* | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Liquid | Vapor | Liquid | Vapor |
| -100 | 0.00200 | 1571.7 | 8.2980 | 90.24 | 358.93 | 0.5027 | 2.0545 |
| -90 | 0.00480 | 1545.1 | 3.6548 | 100.95 | 363.82 | 0.5629 | 1.9982 |
| -80 | 0.01035 | 1518.3 | 1.7816 | 111.66 | 368.75 | 0.6197 | 1.9508 |
| -70 | 0.02044 | 1491.1 | 0.94476 | 122.36 | 373.68 | 0.6738 | 1.9109 |
| -60 | 0.03747 | 1463.6 | 0.53734 | 133.11 | 378.58 | 0.7253 | 1.8770 |
| -50 | 0.06449 | 1435.5 | 0.32405 | 143.91 | 383.39 | 0.7748 | 1.8480 |
| -48 | 0.07140 | 1429.8 | 0.29469 | 146.08 | 384.35 | 0.7844 | 1.8427 |
| -46 | 0.07890 | 1424.1 | 0.26849 | 148.25 | 385.29 | 0.7940 | 1.8376 |
| -44 | 0.08700 | 1418.4 | 0.24507 | 150.43 | 386.23 | 0.8035 | 1.8326 |
| -42 | 0.09575 | 1412.6 | 0.22410 | 152.61 | 387.17 | 0.8130 | 1.8277 |
| -40 b) | 0.10132 | 1409.1 | 0.21256 | 153.93 | 387.72 | 0.8186 | 1.8249 |
| -40 | 0.10518 | 1406.8 | 0.20526 | 154.80 | 388.09 | 0.8224 | 1.8230 |
| -38 | 0.11533 | 1401.0 | 0.18832 | 156.99 | 389.01 | 0.8317 | 1.8184 |
| -36 | 0.12623 | 1395.1 | 0.17306 | 159.19 | 389.93 | 0.8410 | 1.8140 |
| -34 | 0.13793 | 1389.2 | 0.15927 | 161.40 | 390.84 | 0.8502 | 1.8096 |
| -32 | 0.15045 | 1383.3 | 0.14680 | 163.61 | 391.74 | 0.8594 | 1.8054 |
| -30 | 0.16384 | 1377.3 | 0.13551 | 165.82 | 392.63 | 0.8685 | 1.8013 |
| -28 | 0.17815 | 1371.3 | 0.12525 | 168.04 | 393.52 | 0.8776 | 1.7973 |
| -26 | 0.19340 | 1365.2 | 0.11593 | 170.27 | 394.39 | 0.8866 | 1.7934 |
| -24 | 0.20965 | 1359.1 | 0.10744 | 172.51 | 395.26 | 0.8955 | 1.7896 |
| -22 | 0.22693 | 1352.9 | 0.09970 | 174.75 | 396.12 | 0.9044 | 1.7859 |
| -20 | 0.24529 | 1346.8 | 0.09262 | 177.00 | 396.67 | 0.9133 | 1.7822 |
| -18 | 0.26477 | 1340.5 | 0.08615 | 179.26 | 397.81 | 0.9222 | 1.7787 |
| -16 | 0.28542 | 1334.2 | 0.08023 | 181.53 | 398.64 | 0.9309 | 1.7752 |
| -14 | 0.30728 | 1327.9 | 0.07479 | 183.81 | 399.46 | 0.9397 | 1.7719 |
| -12 | 0.33040 | 1321.5 | 0.06979 | 186.09 | 400.27 | 0.9484 | 1.7686 |
| -10 | 0.35482 | 1315.0 | 0.06520 | 188.38 | 401.07 | 0.9571 | 1.7653 |
| -8 | 0.38059 | 1308.5 | 0.06096 | 190.69 | 401.85 | 0.9657 | 1.7621 |
| -6 | 0.40775 | 1301.9 | 0.05706 | 193.00 | 402.63 | 0.9743 | 1.7590 |
| -4 | 0.43636 | 1295.3 | 0.05345 | 195.32 | 403.39 | 0.9829 | 1.7560 |
| -2 | 0.46646 | 1288.6 | 0.05012 | 197.66 | 404.14 | 0.9915 | 1.7530 |
| 0 | 0.49811 | 1281.8 | 0.04703 | 200.00 | 404.87 | 1.0000 | 1.7500 |
| 2 | 0.53134 | 1275.0 | 0.04417 | 202.35 | 405.59 | 1.0085 | 1.7471 |
| 4 | 0.56622 | 1268.1 | 0.04152 | 204.72 | 406.30 | 1.0170 | 1.7443 |
| 6 | 0.60279 | 1261.1 | 0.03906 | 207.10 | 406.99 | 1.0254 | 1.7415 |
| 8 | 0.64109 | 1254.0 | 0.03676 | 209.49 | 407.67 | 1.0338 | 1.7387 |
| 10 | 0.68119 | 1246.9 | 0.03463 | 211.89 | 408.33 | 1.0422 | 1.7360 |
| 12 | 0.72314 | 1239.7 | 0.03265 | 214.31 | 408.97 | 1.0506 | 1.7333 |
| 14 | 0.76698 | 1232.4 | 0.03079 | 216.74 | 409.60 | 1.0590 | 1.7306 |
| 16 | 0.81277 | 1225.0 | 0.02906 | 219.18 | 410.21 | 1.0673 | 1.7280 |
| 18 | 0.86056 | 1217.6 | 0.02744 | 221.63 | 410.80 | 1.0756 | 1.7254 |
| 20 | 0.91041 | 1210.0 | 0.02593 | 224.10 | 411.38 | 1.0840 | 1.7228 |
| 22 | 0.96236 | 1202.4 | 0.02451 | 226.59 | 411.93 | 1.0923 | 1.7202 |
| 24 | 1.0165 | 1194.6 | 0.02319 | 229.09 | 412.46 | 1.1006 | 1.7177 |
| 26 | 1.0728 | 1186.8 | 0.02194 | 231.60 | 412.98 | 1.1088 | 1.7151 |
| 28 | 1.1314 | 1178.8 | 0.02077 | 234.14 | 413.46 | 1.1171 | 1.7126 |
| 30 | 1.1924 | 1170.7 | 0.01968 | 236.69 | 413.93 | 1.1254 | 1.7101 |
| 32 | 1.2557 | 1162.5 | 0.01864 | 239.25 | 414.37 | 1.1336 | 1.7075 |
| 34 | 1.3215 | 1154.2 | 0.01767 | 241.84 | 414.79 | 1.1419 | 1.7050 |
| 36 | 1.3898 | 1145.7 | 0.01675 | 244.44 | 415.18 | 1.1501 | 1.7024 |
| 38 | 1.4606 | 1137.1 | 0.01589 | 247.06 | 415.54 | 1.1584 | 1.6999 |
| 40 | 1.5341 | 1128.4 | 0.01507 | 249.71 | 415.87 | 1.1667 | 1.6973 |
| 42 | 1.6103 | 1119.5 | 0.01430 | 252.37 | 416.17 | 1.1749 | 1.6947 |
| 44 | 1.6892 | 1110.4 | 0.01357 | 255.06 | 416.44 | 1.1832 | 1.6921 |
| 46 | 1.7709 | 1101.2 | 0.01288 | 257.77 | 416.68 | 1.1915 | 1.6894 |
| 48 | 1.8555 | 1091.8 | 0.01223 | 260.51 | 416.87 | 1.1998 | 1.6867 |
| 50 | 1.9431 | 1082.1 | 0.01161 | 263.27 | 417.03 | 1.2081 | 1.6840 |
| 55 | 2.1753 | 1057.1 | 0.01020 | 270.31 | 417.24 | 1.2291 | 1.6768 |
| 60 | 2.4274 | 1030.5 | 0.00895 | 277.56 | 417.14 | 1.2503 | 1.6692 |
| 65 | 2.7008 | 1001.8 | 0.00784 | 285.06 | 416.65 | 1.2718 | 1.6610 |
| 70 | 2.9967 | 970.4 | 0.00684 | 292.90 | 415.69 | 1.2940 | 1.6518 |
| 75 | 3.3168 | 935.3 | 0.00594 | 301.18 | 414.09 | 1.3169 | 1.6413 |
| 80 | 3.6627 | 894.8 | 0.00511 | 310.10 | 411.60 | 1.3413 | 1.6287 |
| 85 | 4.0368 | 845.1 | 0.00433 | 320.05 | 407.72 | 1.3680 | 1.6128 |
| 90 | 4.4416 | 777.5 | 0.00355 | 331.98 | 401.33 | 1.3998 | 1.5907 |
| 95 | 4.8820 | 665.4 | 0.00264 | 348.86 | 387.46 | 1.4442 | 1.5491 |
| 96.14 c) | 4.9900 | 523.8 | 0.00191 | 366.59 | 366.59 | 1.4918 | 1.4918 |