

Ammonia – NH₃ (Refrigerant 717)

| Saturation Values | | | | | | Superheat ($T - T_s$) | | | | |
|-------------------|----------------|-------------------------------|------------------|------------------|--------------------|-------------------------|----------------|------------------|----------------|------------------|
| T [°C] | p_s [bar] | v_g [m ³ /kg] | h_f [kJ/kg] | h_g [kJ/kg] | s_f [kJ/kg K] | s_g [kJ/kg K] | 50 K | | 100 K | |
| | | | | | | | h [kJ/kg] | s [kJ/kg K] | h [kJ/kg] | s [kJ/kg K] |
| -50 | 0.4089 | 2.625 | -44.4 | 1373.3 | -0.194 | 6.159 | 1479.8 | 6.592 | 1585.9 | 6.948 |
| -45 | 0.5454 | 2.005 | -22.3 | 1381.6 | -0.096 | 6.057 | 1489.3 | 6.486 | 1596.1 | 6.839 |
| -40 | 0.7177 | 1.552 | 0 | 1390.0 | 0 | 5.962 | 1498.6 | 6.387 | 1606.3 | 6.736 |
| -35 | 0.9322 | 1.216 | 22.3 | 1397.9 | 0.095 | 5.872 | 1507.9 | 6.293 | 1616.3 | 6.639 |
| -30 | 1.196 | 0.9633 | 44.7 | 1405.6 | 0.188 | 5.785 | 1517.0 | 6.203 | 1626.3 | 6.547 |
| -28 | 1.317 | 0.8809 | 53.6 | 1408.5 | 0.224 | 5.751 | 1520.7 | 6.169 | 1630.3 | 6.512 |
| -26 | 1.447 | 0.8058 | 62.6 | 1411.4 | 0.261 | 5.718 | 1524.3 | 6.135 | 1634.2 | 6.477 |
| -24 | 1.588 | 0.7389 | 71.7 | 1414.3 | 0.297 | 5.686 | 1527.9 | 6.103 | 1638.2 | 6.444 |
| -22 | 1.740 | 0.6783 | 80.8 | 1417.3 | 0.333 | 5.655 | 1531.4 | 6.071 | 1642.2 | 6.411 |
| -20 | 1.902 | 0.6237 | 89.8 | 1420.0 | 0.368 | 5.623 | 1534.8 | 6.039 | 1646.0 | 6.379 |
| -18 | 2.077 | 0.5743 | 98.8 | 1422.7 | 0.404 | 5.593 | 1538.2 | 6.008 | 1650.0 | 6.347 |
| -16 | 2.265 | 0.5296 | 107.9 | 1425.3 | 0.440 | 5.563 | 1541.7 | 5.978 | 1653.8 | 6.316 |
| -14 | 2.465 | 0.4890 | 117.0 | 1427.9 | 0.475 | 5.533 | 1545.1 | 5.948 | 1657.7 | 6.286 |
| -12 | 2.680 | 0.4521 | 126.2 | 1430.5 | 0.510 | 5.504 | 1548.5 | 5.919 | 1661.5 | 6.256 |
| -10 | 2.908 | 0.4185 | 135.4 | 1433.0 | 0.544 | 5.475 | 1551.7 | 5.891 | 1665.3 | 6.227 |
| - 8 | 3.153 | 0.3879 | 144.5 | 1435.3 | 0.579 | 5.447 | 1554.9 | 5.863 | 1669.0 | 6.199 |
| - 6 | 3.413 | 0.3599 | 153.6 | 1437.6 | 0.613 | 5.419 | 1558.2 | 5.836 | 1672.8 | 6.171 |
| - 4 | 3.691 | 0.3344 | 162.8 | 1439.9 | 0.647 | 5.392 | 1561.4 | 5.808 | 1676.4 | 6.143 |
| - 2 | 3.983 | 0.3110 | 172.0 | 1442.2 | 0.681 | 5.365 | 1564.6 | 5.782 | 1680.1 | 6.116 |
| 0 | 4.295 | 0.2895 | 181.2 | 1444.4 | 0.715 | 5.340 | 1567.8 | 5.756 | 1683.9 | 6.090 |
| 2 | 4.625 | 0.2699 | 190.4 | 1446.5 | 0.749 | 5.314 | 1570.9 | 5.731 | 1687.5 | 6.065 |
| 4 | 4.975 | 0.2517 | 199.7 | 1448.5 | 0.782 | 5.288 | 1574.0 | 5.706 | 1691.2 | 6.040 |
| 6 | 5.346 | 0.2351 | 209.1 | 1450.6 | 0.816 | 5.263 | 1577.0 | 5.682 | 1694.9 | 6.015 |
| 8 | 5.736 | 0.2198 | 218.5 | 1452.5 | 0.849 | 5.238 | 1580.1 | 5.658 | 1698.4 | 5.991 |
| 10 | 6.149 | 0.2056 | 227.8 | 1454.3 | 0.881 | 5.213 | 1583.1 | 5.634 | 1702.2 | 5.967 |
| 12 | 6.585 | 0.1926 | 237.2 | 1456.1 | 0.914 | 5.189 | 1586.0 | 5.611 | 1705.7 | 5.943 |
| 14 | 7.045 | 0.1805 | 246.6 | 1457.8 | 0.947 | 5.165 | 1588.9 | 5.588 | 1709.1 | 5.920 |
| 16 | 7.529 | 0.1693 | 256.0 | 1459.5 | 0.979 | 5.141 | 1591.7 | 5.565 | 1712.5 | 5.898 |
| 18 | 8.035 | 0.1590 | 265.5 | 1461.1 | 1.012 | 5.118 | 1594.4 | 5.543 | 1715.9 | 5.876 |
| 20 | 8.570 | 0.1494 | 275.1 | 1462.6 | 1.044 | 5.095 | 1597.2 | 5.521 | 1719.3 | 5.854 |
| 22 | 9.134 | 0.1405 | 284.6 | 1463.9 | 1.076 | 5.072 | 1600.0 | 5.499 | 1722.8 | 5.832 |
| 24 | 9.722 | 0.1322 | 294.1 | 1465.2 | 1.108 | 5.049 | 1602.7 | 5.478 | 1726.3 | 5.811 |
| 26 | 10.34 | 0.1245 | 303.7 | 1466.5 | 1.140 | 5.027 | 1605.3 | 5.458 | 1729.6 | 5.790 |
| 28 | 10.99 | 0.1173 | 313.4 | 1467.8 | 1.172 | 5.005 | 1608.0 | 5.437 | 1732.7 | 5.770 |
| 30 | 11.67 | 0.1106 | 323.1 | 1468.9 | 1.204 | 4.984 | 1610.5 | 5.417 | 1735.9 | 5.750 |
| 32 | 12.37 | 0.1044 | 332.8 | 1469.9 | 1.235 | 4.962 | 1613.0 | 5.397 | 1739.3 | 5.731 |
| 34 | 13.11 | 0.0986 | 342.5 | 1470.8 | 1.267 | 4.940 | 1615.4 | 5.378 | 1742.6 | 5.711 |
| 36 | 13.89 | 0.0931 | 352.3 | 1471.8 | 1.298 | 4.919 | 1617.8 | 5.358 | 1745.7 | 5.692 |
| 38 | 14.70 | 0.0880 | 362.1 | 1472.6 | 1.329 | 4.898 | 1620.1 | 5.340 | 1748.7 | 5.674 |
| 40 | 15.54 | 0.0833 | 371.9 | 1473.3 | 1.360 | 4.877 | 1622.4 | 5.321 | 1751.9 | 5.655 |
| 42 | 16.42 | 0.0788 | 381.8 | 1473.8 | 1.391 | 4.856 | 1624.6 | 5.302 | 1755.0 | 5.637 |
| 44 | 17.34 | 0.0746 | 391.8 | 1474.2 | 1.422 | 4.835 | 1626.8 | 5.284 | 1758.0 | 5.619 |
| 46 | 18.30 | 0.0706 | 401.8 | 1474.5 | 1.453 | 4.814 | 1629.0 | 5.266 | 1761.0 | 5.602 |
| 48 | 19.29 | 0.0670 | 411.9 | 1474.7 | 1.484 | 4.793 | 1631.1 | 5.248 | 1764.0 | 5.584 |
| 50 | 20.33 | 0.0635 | 421.9 | 1474.7 | 1.515 | 4.773 | 1633.1 | 5.230 | 1766.8 | 5.567 |

Critical point $T_c = 132.4$ °C, $p_c = 113.0$ bar.

Molar mass $\bar{m} = 17.030$ kg/kmol; further properties of the liquid are given on p. 23.