

TABLE 6. PROPERTIES OF SATURATED WATER VAPOR WITH AIR, 0 F TO 200 F<sup>a</sup> (PART II, CONTINUED)

| TEMP.<br>F | PRESSURE OF SATURATED<br>VAPOR |               | WEIGHT OF SATURATED VAPOR |        |                   |        | VOLUME IN CU FT<br>BAROMETER, 29.92 IN. HG |                                                    | HEAT CONTENT PER LB     |                        |                                            |
|------------|--------------------------------|---------------|---------------------------|--------|-------------------|--------|--------------------------------------------|----------------------------------------------------|-------------------------|------------------------|--------------------------------------------|
|            | In. of Hg                      | Lb per Sq In. | per Cu Ft                 |        | per lb of Dry Air |        | of 1 lb of<br>Dry Air                      | of 1 lb of<br>Dry Air +<br>Vapor to<br>Saturate it | Dry Air<br>0 F<br>Datum | Vapor<br>32 F<br>Datum | Dry Air<br>with Vapor<br>to Saturate<br>it |
|            |                                |               | Pounds                    | Grains | Pounds            | Grains |                                            |                                                    |                         |                        |                                            |
| 140        | 5.8779                         | 2.887         | 0.008116                  | 56.81  | 0.1521            | 1064.7 | 15.10                                      | 18.79                                              | 33.61                   | 1122.2                 | 204.30                                     |
| 141        | 6.0306                         | 2.962         | .008313                   | 58.19  | .1570             | 1099.0 | 15.13                                      | 18.94                                              | 33.85                   | 1122.7                 | 210.11                                     |
| 142        | 6.1874                         | 3.039         | .008516                   | 59.61  | .1622             | 1135.4 | 15.15                                      | 19.10                                              | 34.09                   | 1123.1                 | 216.26                                     |
| 143        | 6.3482                         | 3.118         | .008724                   | 61.07  | .1675             | 1172.5 | 15.18                                      | 19.26                                              | 34.33                   | 1123.6                 | 222.53                                     |
| 144        | 6.5111                         | 3.198         | .008933                   | 62.53  | .1730             | 1211.0 | 15.20                                      | 19.43                                              | 34.57                   | 1124.0                 | 229.02                                     |
| 145        | 6.6781                         | 3.280         | 0.009148                  | 64.04  | 0.1787            | 1250.9 | 15.23                                      | 19.60                                              | 34.81                   | 1124.5                 | 235.76                                     |
| 146        | 6.8471                         | 3.363         | .009366                   | 65.56  | .1846             | 1292.2 | 15.25                                      | 19.78                                              | 35.05                   | 1124.9                 | 242.71                                     |
| 147        | 7.0222                         | 3.449         | .009590                   | 67.13  | .1908             | 1335.6 | 15.28                                      | 19.96                                              | 35.29                   | 1125.4                 | 250.02                                     |
| 148        | 7.1993                         | 3.536         | .009817                   | 68.72  | .1971             | 1379.7 | 15.30                                      | 20.15                                              | 35.53                   | 1125.8                 | 257.43                                     |
| 149        | 7.3805                         | 3.625         | .010040                   | 70.28  | .2037             | 1425.9 | 15.33                                      | 20.35                                              | 35.77                   | 1126.3                 | 265.20                                     |
| 150        | 7.5658                         | 3.716         | 0.010284                  | 71.99  | 0.2105            | 1473.5 | 15.35                                      | 20.55                                              | 36.02                   | 1126.7                 | 273.19                                     |
| 151        | 7.7551                         | 3.809         | .010526                   | 73.68  | .2176             | 1523.2 | 15.38                                      | 20.76                                              | 36.26                   | 1127.2                 | 281.54                                     |
| 152        | 7.9485                         | 3.904         | .010772                   | 75.40  | .2250             | 1575.0 | 15.40                                      | 20.97                                              | 36.50                   | 1127.6                 | 290.21                                     |
| 153        | 8.1460                         | 4.001         | .011022                   | 77.15  | .2327             | 1628.9 | 15.43                                      | 21.20                                              | 36.74                   | 1128.1                 | 299.25                                     |
| 154        | 8.3476                         | 4.100         | .011279                   | 78.95  | .2407             | 1684.9 | 15.45                                      | 21.43                                              | 36.98                   | 1128.5                 | 308.61                                     |
| 155        | 8.5532                         | 4.201         | 0.011539                  | 80.77  | 0.2490            | 1743.0 | 15.48                                      | 21.67                                              | 37.22                   | 1129.0                 | 318.34                                     |
| 156        | 8.7650                         | 4.305         | .011807                   | 82.65  | .2577             | 1803.9 | 15.50                                      | 21.93                                              | 37.46                   | 1129.4                 | 328.51                                     |
| 157        | 8.9788                         | 4.410         | .012077                   | 84.54  | .2667             | 1866.9 | 15.53                                      | 22.19                                              | 37.70                   | 1129.9                 | 339.04                                     |
| 158        | 9.1986                         | 4.518         | .012354                   | 86.48  | .2761             | 1932.7 | 15.56                                      | 22.46                                              | 37.94                   | 1130.3                 | 350.02                                     |
| 159        | 9.4206                         | 4.627         | .012634                   | 88.44  | .2858             | 2000.6 | 15.58                                      | 22.74                                              | 38.18                   | 1130.8                 | 361.36                                     |
| 160        | 9.6486                         | 4.739         | 0.012919                  | 90.43  | 0.2961            | 2072.7 | 15.61                                      | 23.03                                              | 38.43                   | 1131.2                 | 373.38                                     |
| 161        | 9.8807                         | 4.853         | .013211                   | 92.48  | .3067             | 2146.9 | 15.63                                      | 23.33                                              | 38.67                   | 1131.7                 | 385.76                                     |
| 162        | 10.119                         | 4.970         | .013509                   | 94.56  | .3179             | 2225.3 | 15.66                                      | 23.63                                              | 38.91                   | 1132.1                 | 398.80                                     |
| 163        | 10.361                         | 5.089         | .013812                   | 96.68  | .3295             | 2306.5 | 15.68                                      | 23.98                                              | 39.15                   | 1132.5                 | 412.34                                     |
| 164        | 10.608                         | 5.210         | .014120                   | 98.84  | .3416             | 2391.2 | 15.71                                      | 24.33                                              | 39.39                   | 1133.0                 | 426.42                                     |
| 165        | 10.860                         | 5.334         | 0.014434                  | 101.0  | 0.3544            | 2480.8 | 15.73                                      | 24.69                                              | 39.63                   | 1133.5                 | 441.34                                     |
| 166        | 11.117                         | 5.460         | .014753                   | 103.3  | .3677             | 2573.9 | 15.76                                      | 25.07                                              | 39.87                   | 1133.9                 | 456.81                                     |
| 167        | 11.379                         | 5.589         | .015080                   | 105.6  | .3817             | 2671.9 | 15.78                                      | 25.46                                              | 40.11                   | 1134.4                 | 473.11                                     |
| 168        | 11.646                         | 5.720         | .015410                   | 107.9  | .3964             | 2774.8 | 15.81                                      | 25.88                                              | 40.35                   | 1134.8                 | 490.18                                     |
| 169        | 11.919                         | 5.854         | .015750                   | 110.3  | .4118             | 2882.6 | 15.83                                      | 26.31                                              | 40.59                   | 1135.3                 | 508.11                                     |
| 170        | 12.196                         | 5.990         | 0.016092                  | 112.6  | 0.4280            | 2996.0 | 15.86                                      | 26.77                                              | 40.83                   | 1135.7                 | 526.91                                     |
| 171        | 12.480                         | 6.130         | .016444                   | 115.1  | .4451             | 3115.7 | 15.88                                      | 27.24                                              | 41.07                   | 1136.2                 | 546.79                                     |
| 172        | 12.770                         | 6.272         | .016801                   | 117.6  | .4631             | 3241.7 | 15.91                                      | 27.74                                              | 41.32                   | 1136.6                 | 567.68                                     |
| 173        | 13.065                         | 6.417         | .017164                   | 120.1  | .4821             | 3374.7 | 15.93                                      | 28.28                                              | 41.56                   | 1137.1                 | 589.76                                     |
| 174        | 13.366                         | 6.565         | .017534                   | 122.7  | .5022             | 3515.4 | 15.96                                      | 28.84                                              | 41.80                   | 1137.5                 | 613.05                                     |

<sup>a</sup>Compiled by W. M. Sawdon, vapor pressures converted from *International Critical Tables*.TABLE 6. PROPERTIES OF SATURATED WATER VAPOR WITH AIR, 0 F TO 200 F<sup>a</sup> (PART II, CONCLUDED)

| TEMP.<br>F | PRESSURE OF SATURATED<br>VAPOR |               | WEIGHT OF SATURATED VAPOR |        |                   |         | VOLUME IN CU FT<br>BAROMETER, 29.92 IN. HG |                                                    | HEAT CONTENT PER LB     |                        |                                            |
|------------|--------------------------------|---------------|---------------------------|--------|-------------------|---------|--------------------------------------------|----------------------------------------------------|-------------------------|------------------------|--------------------------------------------|
|            | In. of Hg                      | Lb per Sq In. | per Cu Ft                 |        | per lb of Dry Air |         | of 1 lb of<br>Dry Air                      | of 1 lb of<br>Dry Air +<br>Vapor to<br>Saturate it | Dry Air<br>0 F<br>Datum | Vapor<br>32 F<br>Datum | Dry Air<br>with Vapor<br>to Saturate<br>it |
|            |                                |               | Pounds                    | Grains | Pounds            | Grains  |                                            |                                                    |                         |                        |                                            |
| 175        | 13.674                         | 6.716         | 0.017914                  | 125.4  | 0.5235            | 3664.5  | 15.98                                      | 29.43                                              | 42.04                   | 1138.0                 | 637.78                                     |
| 176        | 13.985                         | 6.869         | .018294                   | 128.1  | .5459             | 3821.3  | 16.01                                      | 30.05                                              | 42.28                   | 1138.4                 | 663.73                                     |
| 177        | 14.303                         | 7.025         | .018684                   | 130.8  | .5697             | 3987.9  | 16.03                                      | 30.71                                              | 42.52                   | 1138.9                 | 691.35                                     |
| 178        | 14.627                         | 7.184         | .019080                   | 133.6  | .5949             | 4164.3  | 16.06                                      | 31.41                                              | 42.76                   | 1139.3                 | 720.53                                     |
| 179        | 14.954                         | 7.345         | .019477                   | 136.3  | .6215             | 4350.5  | 16.08                                      | 32.15                                              | 43.00                   | 1139.8                 | 751.39                                     |
| 180        | 15.290                         | 7.510         | 0.019888                  | 139.2  | 0.6501            | 4550.7  | 16.11                                      | 32.94                                              | 43.24                   | 1140.2                 | 784.48                                     |
| 181        | 15.632                         | 7.678         | .020304                   | 142.1  | .6805             | 4763.5  | 16.13                                      | 33.78                                              | 43.49                   | 1140.7                 | 819.74                                     |
| 182        | 15.981                         | 7.849         | .020729                   | 145.1  | .7131             | 4991.7  | 16.16                                      | 34.68                                              | 43.73                   | 1141.1                 | 857.45                                     |
| 183        | 16.337                         | 8.024         | .021159                   | 148.1  | .7481             | 5236.7  | 16.18                                      | 35.65                                              | 43.97                   | 1141.6                 | 898.00                                     |
| 184        | 16.697                         | 8.201         | .021598                   | 151.2  | .7854             | 5497.8  | 16.21                                      | 36.67                                              | 44.21                   | 1142.0                 | 941.14                                     |
| 185        | 17.066                         | 8.382         | 0.022045                  | 154.3  | 0.8258            | 5780.6  | 16.23                                      | 37.78                                              | 44.45                   | 1142.5                 | 987.93                                     |
| 186        | 17.440                         | 8.566         | .022497                   | 157.5  | .8693             | 6085.1  | 16.26                                      | 38.98                                              | 44.69                   | 1142.9                 | 1038.21                                    |
| 187        | 17.821                         | 8.753         | .022956                   | 160.7  | .9162             | 6413.4  | 16.28                                      | 40.27                                              | 44.93                   | 1143.4                 | 1092.51                                    |
| 188        | 18.210                         | 8.944         | .023424                   | 164.0  | .9673             | 6771.1  | 16.31                                      | 41.67                                              | 45.18                   | 1143.8                 | 1151.58                                    |
| 189        | 18.605                         | 9.138         | .023900                   | 167.3  | 1.0227            | 7158.9  | 16.34                                      | 43.04                                              | 45.42                   | 1144.3                 | 1216.04                                    |
| 190        | 19.008                         | 9.336         | 0.024384                  | 170.7  | 1.083             | 7581.0  | 16.36                                      | 44.85                                              | 45.66                   | 1144.7                 | 1285.37                                    |
| 191        | 19.419                         | 9.538         | .024881                   | 174.2  | 1.150             | 8050.0  | 16.39                                      | 46.68                                              | 45.90                   | 1145.2                 | 1362.88                                    |
| 192        | 19.839                         | 9.744         | .025380                   | 177.7  | 1.224             | 8568.0  | 16.41                                      | 48.70                                              | 46.14                   | 1145.6                 | 1448.35                                    |
| 193        | 20.266                         | 9.954         | .025893                   | 181.3  | 1.306             | 9142.0  | 16.44                                      | 50.93                                              | 46.38                   | 1146.1                 | 1543.19                                    |
| 194        | 20.702                         | 10.168        | .026413                   | 184.9  | 1.397             | 9779.0  | 16.46                                      | 53.42                                              | 46.62                   | 1146.5                 | 1648.28                                    |
| 195        | 21.144                         | 10.385        | 0.026939                  | 188.6  | 1.499             | 10493.0 | 16.49                                      | 56.20                                              | 46.86                   | 1147.0                 | 1766.21                                    |
| 196        | 21.592                         | 10.605        | .027472                   | 192.3  | 1.613             | 11291.0 | 16.51                                      | 59.31                                              | 47.10                   | 1147.4                 | 1897.86                                    |
| 197        | 22.048                         | 10.829        | .028019                   | 196.1  | 1.742             | 12194.0 | 16.54                                      | 62.85                                              | 47.34                   | 1147.9                 | 2046.98                                    |
| 198        | 22.512                         | 11.057        | .028571                   | 200.0  | 1.890             | 13230.0 | 16.56                                      | 66.88                                              | 47.59                   | 1148.3                 | 2217.88                                    |
| 199        | 22.984                         | 11.289        | .029129                   | 203.9  | 2.061             | 14427.0 | 16.59                                      | 71.54                                              | 47.83                   | 1148.8                 | 2415.51                                    |
| 200        | 23.465                         | 11.525        | 0.029700                  | 207.9  | 2.261             | 15827.0 | 16.61                                      | 76.99                                              | 48.07                   | 1149.2                 | 2646.41                                    |

<sup>a</sup>Compiled by W. M. Sawdon, vapor pressures converted from *International Critical Tables*.