

25.00 ATMOSPHERE ISOBAR

| TEMP.<br>K | DENSITY<br>MOL/LITER | ENTHALPY<br>J/MOL | INTERNAL<br>ENERGY<br>J/MOL | ENTROPY<br>J/MOL-K | TEMP.<br>K | DENSITY<br>MOL/LITER | ENTHALPY<br>J/MOL | INTERNAL<br>ENERGY<br>J/MOL | ENTROPY<br>J/MOL-K |
|------------|----------------------|-------------------|-----------------------------|--------------------|------------|----------------------|-------------------|-----------------------------|--------------------|
|            |                      |                   |                             |                    | 91         | 34.5141              | 3186.4            | 3113.0                      | 56.22              |
|            |                      |                   |                             |                    | 92         | 34.3587              | 3232.6            | 3158.9                      | 56.72              |
|            |                      |                   |                             |                    | 93         | 34.2018              | 3278.9            | 3204.8                      | 57.22              |
|            |                      |                   |                             |                    | 94         | 34.0435              | 3325.4            | 3251.0                      | 57.72              |
|            |                      |                   |                             |                    | 95         | 33.8838              | 3372.0            | 3297.2                      | 58.22              |
|            |                      |                   |                             |                    | 96         | 33.7226              | 3418.8            | 3343.7                      | 58.71              |
|            |                      |                   |                             |                    | 97         | 33.5600              | 3465.7            | 3390.3                      | 59.19              |
|            |                      |                   |                             |                    | 98         | 33.3960              | 3512.8            | 3437.0                      | 59.67              |
|            |                      |                   |                             |                    | 99         | 33.2304              | 3560.1            | 3483.8                      | 60.15              |
|            |                      |                   |                             |                    | 100        | 33.0634              | 3607.4            | 3530.8                      | 60.63              |
|            |                      |                   |                             |                    | 101        | 32.8948              | 3654.9            | 3577.9                      | 61.10              |
|            |                      |                   |                             |                    | 102        | 32.7246              | 3702.6            | 3625.2                      | 61.57              |
|            |                      |                   |                             |                    | 103        | 32.5528              | 3750.3            | 3672.5                      | 62.04              |
|            |                      |                   |                             |                    | 104        | 32.3793              | 3798.2            | 3720.0                      | 62.50              |
|            |                      |                   |                             |                    | 105        | 32.2041              | 3846.2            | 3767.6                      | 62.96              |
|            |                      |                   |                             |                    | 106        | 32.0271              | 3894.4            | 3815.3                      | 63.42              |
|            |                      |                   |                             |                    | 107        | 31.8482              | 3942.6            | 3863.1                      | 63.87              |
|            |                      |                   |                             |                    | 108        | 31.6673              | 3991.0            | 3911.0                      | 64.32              |
|            |                      |                   |                             |                    | 109        | 31.4844              | 4039.6            | 3959.1                      | 64.77              |
|            |                      |                   |                             |                    | 110        | 31.2993              | 4088.3            | 4007.3                      | 65.21              |
|            |                      |                   |                             |                    | 111        | 31.1120              | 4137.1            | 4055.7                      | 65.65              |
|            |                      |                   |                             |                    | 112        | 30.9223              | 4186.1            | 4104.2                      | 66.09              |
|            |                      |                   |                             |                    | 113        | 30.7301              | 4235.3            | 4152.9                      | 66.53              |
|            |                      |                   |                             |                    | 114        | 30.5352              | 4284.7            | 4201.8                      | 66.97              |
|            |                      |                   |                             |                    | 115        | 30.3375              | 4334.3            | 4250.8                      | 67.40              |
|            |                      |                   |                             |                    | 116        | 30.1368              | 4384.2            | 4300.1                      | 67.83              |
|            |                      |                   |                             |                    | 117        | 29.9330              | 4434.3            | 4349.7                      | 68.26              |
|            |                      |                   |                             |                    | 118        | 29.7257              | 4484.7            | 4399.5                      | 68.69              |
|            |                      |                   |                             |                    | 119        | 29.5149              | 4535.5            | 4449.6                      | 69.12              |
|            |                      |                   |                             |                    | 120        | 29.3001              | 4586.6            | 4500.1                      | 69.55              |
|            |                      |                   |                             |                    | 121        | 29.0811              | 4638.1            | 4551.0                      | 69.97              |
|            |                      |                   |                             |                    | 122        | 28.8577              | 4690.1            | 4602.3                      | 70.40              |
|            |                      |                   |                             |                    | 123        | 28.6293              | 4742.6            | 4654.1                      | 70.83              |
|            |                      |                   |                             |                    | 124        | 28.3957              | 4795.7            | 4706.5                      | 71.26              |
|            |                      |                   |                             |                    | 125        | 28.1562              | 4849.5            | 4759.5                      | 71.69              |
|            |                      |                   |                             |                    | 126        | 27.9104              | 4904.1            | 4813.3                      | 72.13              |
|            |                      |                   |                             |                    | 127        | 27.6576              | 4959.5            | 4867.9                      | 72.57              |
|            |                      |                   |                             |                    | 128        | 27.3971              | 5015.8            | 4923.4                      | 73.01              |
|            |                      |                   |                             |                    | 129        | 27.1280              | 5073.3            | 4980.0                      | 73.46              |
|            |                      |                   |                             |                    | 130        | 26.8492              | 5132.1            | 5037.8                      | 73.91              |
|            |                      |                   |                             |                    | 131        | 26.5594              | 5192.4            | 5097.0                      | 74.37              |
|            |                      |                   |                             |                    | 132        | 26.2572              | 5254.4            | 5157.9                      | 74.84              |
|            |                      |                   |                             |                    | 133        | 25.9405              | 5318.4            | 5220.7                      | 75.33              |
|            |                      |                   |                             |                    | 134        | 25.6069              | 5384.8            | 5285.8                      | 75.82              |
|            |                      |                   |                             |                    | * 134.829  | 25.3151              | 5441.9            | 5341.9                      | 76.25              |
|            |                      |                   |                             |                    | * 134.829  | 3.36017              | 9388.3            | 8634.4                      | 105.52             |
|            |                      |                   |                             |                    | 135        | 3.34525              | 9397.7            | 8640.4                      | 105.59             |
|            |                      |                   |                             |                    | 136        | 3.26288              | 9451.0            | 8674.6                      | 105.98             |
|            |                      |                   |                             |                    | 137        | 3.18785              | 9501.6            | 8707.0                      | 106.35             |
|            |                      |                   |                             |                    | 138        | 3.11895              | 9549.9            | 8737.7                      | 106.70             |
|            |                      |                   |                             |                    | 139        | 3.05522              | 9596.3            | 8767.2                      | 107.04             |
|            |                      |                   |                             |                    | 140        | 2.99593              | 9641.0            | 8795.5                      | 107.36             |
|            |                      |                   |                             |                    | 141        | 2.94050              | 9684.3            | 8822.8                      | 107.67             |
|            |                      |                   |                             |                    | 142        | 2.88846              | 9726.2            | 8849.2                      | 107.96             |
|            |                      |                   |                             |                    | 143        | 2.83941              | 9767.0            | 8874.8                      | 108.25             |
|            |                      |                   |                             |                    | 144        | 2.79304              | 9806.7            | 8899.8                      | 108.53             |
|            |                      |                   |                             |                    | 145        | 2.74906              | 9845.5            | 8924.0                      | 108.79             |
|            |                      |                   |                             |                    | 146        | 2.70725              | 9883.5            | 8947.7                      | 109.05             |
|            |                      |                   |                             |                    | 147        | 2.66740              | 9920.6            | 8970.9                      | 109.31             |
|            |                      |                   |                             |                    | 148        | 2.62935              | 9957.1            | 8993.6                      | 109.56             |
|            |                      |                   |                             |                    | 149        | 2.59294              | 9992.8            | 9015.9                      | 109.80             |
|            |                      |                   |                             |                    | 150        | 2.55804              | 10028.0           | 9037.7                      | 110.03             |
|            |                      |                   |                             |                    | 151        | 2.52454              | 10062.6           | 9059.2                      | 110.26             |
|            |                      |                   |                             |                    | 152        | 2.49232              | 10096.7           | 9080.3                      | 110.49             |
|            |                      |                   |                             |                    | 153        | 2.46131              | 10130.3           | 9101.1                      | 110.71             |
|            |                      |                   |                             |                    | 154        | 2.43141              | 10163.4           | 9121.6                      | 110.92             |
|            |                      |                   |                             |                    | 155        | 2.40255              | 10196.1           | 9141.8                      | 111.13             |
|            |                      |                   |                             |                    | 156        | 2.37467              | 10228.4           | 9161.7                      | 111.34             |
| 86         | 35.2683              | 2958.6            | 2886.7                      | 53.64              | 157        | 2.34770              | 10260.4           | 9181.4                      | 111.55             |
| 87         | 35.1206              | 3003.8            | 2931.6                      | 54.17              | 158        | 2.32159              | 10291.9           | 9200.8                      | 111.75             |
| 88         | 34.9713              | 3049.1            | 2976.7                      | 54.69              | 159        | 2.29629              | 10323.2           | 9220.0                      | 111.94             |
| 89         | 34.8204              | 3094.7            | 3022.0                      | 55.20              | 160        | 2.27176              | 10354.1           | 9239.0                      | 112.14             |
| 90         | 34.6680              | 3140.5            | 3067.4                      | 55.71              |            |                      |                   |                             |                    |

\* PHASE CHANGE

## 25.00 ATMOSPHERE ISOBAR

| TEMP.<br>K | DENSITY<br>MOL/LITER | ENTHALPY<br>J/MOL | INTERNAL<br>ENERGY<br>J/MOL | ENTROPY<br>J/MOL-K | TEMP.<br>K | DENSITY<br>MOL/LITER | ENTHALPY<br>J/MOL | INTERNAL<br>ENERGY<br>J/MOL | ENTROPY<br>J/MOL-K |
|------------|----------------------|-------------------|-----------------------------|--------------------|------------|----------------------|-------------------|-----------------------------|--------------------|
| 161        | 2.24794              | 10384.7           | 9257.8                      | 112.33             | 231        | 1.37957              | 12184.8           | 10348.6                     | 121.68             |
| 162        | 2.22481              | 10415.0           | 9276.4                      | 112.52             | 232        | 1.37261              | 12208.1           | 10362.6                     | 121.78             |
| 163        | 2.20233              | 10445.0           | 9294.8                      | 112.70             | 233        | 1.36573              | 12231.5           | 10376.7                     | 121.88             |
| 164        | 2.18046              | 10474.8           | 9313.1                      | 112.88             | 234        | 1.35894              | 12254.8           | 10390.7                     | 121.98             |
| 165        | 2.15917              | 10504.4           | 9331.1                      | 113.06             | 235        | 1.35221              | 12278.0           | 10404.7                     | 122.08             |
| 166        | 2.13844              | 10533.7           | 9349.1                      | 113.24             | 236        | 1.34556              | 12301.3           | 10418.6                     | 122.18             |
| 167        | 2.11824              | 10562.8           | 9366.9                      | 113.41             | 237        | 1.33899              | 12324.5           | 10432.6                     | 122.28             |
| 168        | 2.09855              | 10591.6           | 9384.5                      | 113.59             | 238        | 1.33248              | 12347.6           | 10446.5                     | 122.38             |
| 169        | 2.07933              | 10620.3           | 9402.0                      | 113.76             | 239        | 1.32605              | 12370.8           | 10460.4                     | 122.47             |
| 170        | 2.06058              | 10648.7           | 9419.4                      | 113.92             | 240        | 1.31969              | 12393.9           | 10474.3                     | 122.57             |
| 171        | 2.04227              | 10677.0           | 9436.6                      | 114.09             | 241        | 1.31339              | 12416.9           | 10488.2                     | 122.67             |
| 172        | 2.02438              | 10705.1           | 9453.8                      | 114.25             | 242        | 1.30716              | 12440.0           | 10502.1                     | 122.76             |
| 173        | 2.00690              | 10733.0           | 9470.8                      | 114.42             | 243        | 1.30100              | 12463.0           | 10515.9                     | 122.86             |
| 174        | 1.98981              | 10760.8           | 9487.7                      | 114.58             | 244        | 1.29490              | 12486.0           | 10529.7                     | 122.95             |
| 175        | 1.97309              | 10788.4           | 9504.5                      | 114.73             | 245        | 1.28886              | 12509.0           | 10543.5                     | 123.05             |
| 176        | 1.95672              | 10815.8           | 9521.2                      | 114.89             | 246        | 1.28288              | 12531.9           | 10557.3                     | 123.14             |
| 177        | 1.94071              | 10843.1           | 9537.8                      | 115.04             | 247        | 1.27697              | 12554.9           | 10571.1                     | 123.23             |
| 178        | 1.92502              | 10870.2           | 9554.3                      | 115.20             | 248        | 1.27112              | 12577.7           | 10584.9                     | 123.32             |
| 179        | 1.90966              | 10897.2           | 9570.7                      | 115.35             | 249        | 1.26533              | 12600.6           | 10598.6                     | 123.42             |
| 180        | 1.89460              | 10924.1           | 9587.0                      | 115.50             | 250        | 1.25959              | 12623.5           | 10612.3                     | 123.51             |
| 181        | 1.87985              | 10950.8           | 9603.3                      | 115.65             | 251        | 1.25391              | 12646.3           | 10626.1                     | 123.60             |
| 182        | 1.86538              | 10977.5           | 9619.5                      | 115.79             | 252        | 1.24829              | 12669.1           | 10639.8                     | 123.69             |
| 183        | 1.85118              | 11004.0           | 9635.5                      | 115.94             | 253        | 1.24272              | 12691.9           | 10653.4                     | 123.78             |
| 184        | 1.83726              | 11030.3           | 9651.5                      | 116.08             | 254        | 1.23721              | 12714.6           | 10667.1                     | 123.87             |
| 185        | 1.82359              | 11056.6           | 9667.5                      | 116.22             | 255        | 1.23175              | 12737.3           | 10680.8                     | 123.96             |
| 186        | 1.81018              | 11082.8           | 9683.3                      | 116.37             | 256        | 1.22635              | 12760.0           | 10694.4                     | 124.05             |
| 187        | 1.79700              | 11108.8           | 9699.1                      | 116.51             | 257        | 1.22099              | 12782.7           | 10708.0                     | 124.14             |
| 188        | 1.78407              | 11134.8           | 9714.9                      | 116.64             | 258        | 1.21569              | 12805.4           | 10721.6                     | 124.22             |
| 189        | 1.77136              | 11160.6           | 9730.5                      | 116.78             | 259        | 1.21044              | 12828.0           | 10735.2                     | 124.31             |
| 190        | 1.75887              | 11186.4           | 9746.1                      | 116.92             | 260        | 1.20523              | 12850.6           | 10748.8                     | 124.40             |
| 191        | 1.74659              | 11212.0           | 9761.7                      | 117.05             | 261        | 1.20008              | 12873.3           | 10762.4                     | 124.49             |
| 192        | 1.73453              | 11237.6           | 9777.2                      | 117.19             | 262        | 1.19497              | 12895.8           | 10776.0                     | 124.57             |
| 193        | 1.72266              | 11263.1           | 9792.6                      | 117.32             | 263        | 1.18991              | 12918.4           | 10789.5                     | 124.66             |
| 194        | 1.71099              | 11288.5           | 9808.0                      | 117.45             | 264        | 1.18490              | 12940.9           | 10803.1                     | 124.74             |
| 195        | 1.69951              | 11313.8           | 9823.3                      | 117.58             | 265        | 1.17994              | 12963.5           | 10816.6                     | 124.83             |
| 196        | 1.68821              | 11339.1           | 9838.5                      | 117.71             | 266        | 1.17501              | 12986.0           | 10830.1                     | 124.91             |
| 197        | 1.67710              | 11364.2           | 9853.8                      | 117.84             | 267        | 1.17014              | 13008.5           | 10843.6                     | 125.00             |
| 198        | 1.66616              | 11389.3           | 9868.9                      | 117.96             | 268        | 1.16531              | 13030.9           | 10857.1                     | 125.08             |
| 199        | 1.65539              | 11414.3           | 9884.0                      | 118.09             | 269        | 1.16052              | 13053.4           | 10870.6                     | 125.17             |
| 200        | 1.64478              | 11439.3           | 9899.1                      | 118.21             | 270        | 1.15577              | 13075.8           | 10884.0                     | 125.25             |
| 201        | 1.63434              | 11464.1           | 9914.1                      | 118.34             | 271        | 1.15106              | 13098.2           | 10897.5                     | 125.33             |
| 202        | 1.62405              | 11488.9           | 9929.1                      | 118.46             | 272        | 1.14640              | 13120.6           | 10910.9                     | 125.41             |
| 203        | 1.61392              | 11513.7           | 9944.1                      | 118.58             | 273        | 1.14178              | 13143.0           | 10924.4                     | 125.50             |
| 204        | 1.60393              | 11538.3           | 9959.0                      | 118.70             | 274        | 1.13720              | 13165.4           | 10937.8                     | 125.58             |
| 205        | 1.59409              | 11562.9           | 9973.8                      | 118.82             | 275        | 1.13265              | 13187.7           | 10951.2                     | 125.66             |
| 206        | 1.58439              | 11587.5           | 9988.6                      | 118.94             | 276        | 1.12815              | 13210.1           | 10964.6                     | 125.74             |
| 207        | 1.57483              | 11612.0           | 10003.4                     | 119.06             | 277        | 1.12368              | 13232.4           | 10978.0                     | 125.82             |
| 208        | 1.56541              | 11636.4           | 10018.1                     | 119.18             | 278        | 1.11926              | 13254.7           | 10991.4                     | 125.90             |
| 209        | 1.55611              | 11660.7           | 10032.9                     | 119.30             | 279        | 1.11487              | 13277.0           | 11004.8                     | 125.98             |
| 210        | 1.54694              | 11685.1           | 10047.5                     | 119.41             | 280        | 1.11052              | 13299.2           | 11018.2                     | 126.06             |
| 211        | 1.53790              | 11709.3           | 10062.2                     | 119.53             | 281        | 1.10620              | 13321.5           | 11031.5                     | 126.14             |
| 212        | 1.52899              | 11733.5           | 10076.7                     | 119.64             | 282        | 1.10192              | 13343.8           | 11044.9                     | 126.22             |
| 213        | 1.52019              | 11757.7           | 10091.3                     | 119.76             | 283        | 1.09768              | 13366.0           | 11058.2                     | 126.30             |
| 214        | 1.51151              | 11781.8           | 10105.8                     | 119.87             | 284        | 1.09347              | 13388.2           | 11071.5                     | 126.38             |
| 215        | 1.50294              | 11805.8           | 10120.3                     | 119.98             | 285        | 1.08929              | 13410.4           | 11084.9                     | 126.45             |
| 216        | 1.49448              | 11829.8           | 10134.8                     | 120.09             | 286        | 1.08515              | 13432.6           | 11098.2                     | 126.53             |
| 217        | 1.48614              | 11853.8           | 10149.3                     | 120.20             | 287        | 1.08104              | 13454.8           | 11111.5                     | 126.61             |
| 218        | 1.47790              | 11877.7           | 10163.7                     | 120.31             | 288        | 1.07697              | 13476.9           | 11124.8                     | 126.69             |
| 219        | 1.46977              | 11901.6           | 10178.0                     | 120.42             | 289        | 1.07293              | 13499.1           | 11138.1                     | 126.76             |
| 220        | 1.46173              | 11925.4           | 10192.4                     | 120.53             | 290        | 1.06892              | 13521.2           | 11151.4                     | 126.84             |
| 221        | 1.45380              | 11949.2           | 10206.7                     | 120.64             | 291        | 1.06495              | 13543.3           | 11164.6                     | 126.92             |
| 222        | 1.44597              | 11972.9           | 10221.0                     | 120.75             | 292        | 1.06100              | 13565.4           | 11177.9                     | 126.99             |
| 223        | 1.43823              | 11996.6           | 10235.3                     | 120.85             | 293        | 1.05709              | 13587.5           | 11191.2                     | 127.07             |
| 224        | 1.43059              | 12020.3           | 10249.5                     | 120.96             | 294        | 1.05320              | 13609.6           | 11204.4                     | 127.14             |
| 225        | 1.42304              | 12043.9           | 10263.8                     | 121.06             | 295        | 1.04935              | 13631.7           | 11217.7                     | 127.22             |
| 226        | 1.41558              | 12067.5           | 10277.9                     | 121.17             | 296        | 1.04553              | 13653.8           | 11230.9                     | 127.29             |
| 227        | 1.40820              | 12091.0           | 10292.1                     | 121.27             | 297        | 1.04174              | 13675.8           | 11244.1                     | 127.37             |
| 228        | 1.40092              | 12114.5           | 10306.3                     | 121.38             | 298        | 1.03797              | 13697.8           | 11257.3                     | 127.44             |
| 229        | 1.39372              | 12138.0           | 10320.4                     | 121.48             | 299        | 1.03424              | 13719.9           | 11270.6                     | 127.51             |
| 230        | 1.38660              | 12161.4           | 10334.5                     | 121.58             | 300        | 1.03053              | 13741.9           | 11283.8                     | 127.59             |