

## 180.00 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         | 35.6146              | 3467.9            | 2955.8                      | 54.39              |
|            |                      |                   |                             |                    | 92         | 35.4809              | 3511.5            | 2997.4                      | 54.87              |
|            |                      |                   |                             |                    | 93         | 35.3465              | 3555.2            | 3039.2                      | 55.34              |
|            |                      |                   |                             |                    | 94         | 35.2115              | 3599.0            | 3081.0                      | 55.81              |
|            |                      |                   |                             |                    | 95         | 35.0758              | 3642.9            | 3122.9                      | 56.28              |
|            |                      |                   |                             |                    | 96         | 34.9396              | 3686.9            | 3164.9                      | 56.74              |
|            |                      |                   |                             |                    | 97         | 34.8028              | 3731.0            | 3206.9                      | 57.19              |
|            |                      |                   |                             |                    | 98         | 34.6654              | 3775.2            | 3249.0                      | 57.65              |
|            |                      |                   |                             |                    | 99         | 34.5276              | 3819.4            | 3291.1                      | 58.10              |
|            |                      |                   |                             |                    | 100        | 34.3892              | 3863.6            | 3333.3                      | 58.54              |
|            |                      |                   |                             |                    | 101        | 34.2503              | 3907.9            | 3375.4                      | 58.98              |
|            |                      |                   |                             |                    | 102        | 34.1109              | 3952.3            | 3417.6                      | 59.42              |
|            |                      |                   |                             |                    | 103        | 33.9711              | 3996.6            | 3459.7                      | 59.85              |
|            |                      |                   |                             |                    | 104        | 33.8307              | 4040.9            | 3501.8                      | 60.28              |
|            |                      |                   |                             |                    | 105        | 33.6899              | 4085.2            | 3543.8                      | 60.70              |
|            |                      |                   |                             |                    | 106        | 33.5486              | 4129.5            | 3585.9                      | 61.12              |
|            |                      |                   |                             |                    | 107        | 33.4068              | 4173.8            | 3627.8                      | 61.54              |
|            |                      |                   |                             |                    | 108        | 33.2645              | 4218.0            | 3669.7                      | 61.95              |
|            |                      |                   |                             |                    | 109        | 33.1217              | 4262.2            | 3711.5                      | 62.36              |
|            |                      |                   |                             |                    | 110        | 32.9785              | 4306.3            | 3753.3                      | 62.76              |
|            |                      |                   |                             |                    | 111        | 32.8347              | 4350.4            | 3794.9                      | 63.16              |
|            |                      |                   |                             |                    | 112        | 32.6904              | 4394.4            | 3836.5                      | 63.55              |
|            |                      |                   |                             |                    | 113        | 32.5456              | 4438.4            | 3878.0                      | 63.94              |
|            |                      |                   |                             |                    | 114        | 32.4003              | 4482.3            | 3919.4                      | 64.33              |
|            |                      |                   |                             |                    | 115        | 32.2544              | 4526.1            | 3960.7                      | 64.71              |
|            |                      |                   |                             |                    | 116        | 32.1080              | 4569.9            | 4001.8                      | 65.09              |
|            |                      |                   |                             |                    | 117        | 31.9610              | 4613.6            | 4042.9                      | 65.47              |
|            |                      |                   |                             |                    | 118        | 31.8134              | 4657.2            | 4083.9                      | 65.84              |
|            |                      |                   |                             |                    | 119        | 31.6652              | 4700.8            | 4124.8                      | 66.21              |
|            |                      |                   |                             |                    | 120        | 31.5164              | 4744.3            | 4165.6                      | 66.57              |
|            |                      |                   |                             |                    | 121        | 31.3669              | 4787.8            | 4206.4                      | 66.93              |
|            |                      |                   |                             |                    | 122        | 31.2168              | 4831.3            | 4247.0                      | 67.29              |
|            |                      |                   |                             |                    | 123        | 31.0660              | 4874.7            | 4287.6                      | 67.64              |
|            |                      |                   |                             |                    | 124        | 30.9145              | 4918.1            | 4328.1                      | 68.00              |
|            |                      |                   |                             |                    | 125        | 30.7623              | 4961.5            | 4368.6                      | 68.34              |
|            |                      |                   |                             |                    | 126        | 30.6094              | 5005.0            | 4409.1                      | 68.69              |
|            |                      |                   |                             |                    | 127        | 30.4557              | 5048.5            | 4449.6                      | 69.03              |
|            |                      |                   |                             |                    | 128        | 30.3013              | 5092.0            | 4490.1                      | 69.38              |
|            |                      |                   |                             |                    | 129        | 30.1460              | 5135.6            | 4530.6                      | 69.72              |
|            |                      |                   |                             |                    | 130        | 29.9899              | 5179.4            | 4571.2                      | 70.05              |
|            |                      |                   |                             |                    | 131        | 29.8329              | 5223.3            | 4611.9                      | 70.39              |
|            |                      |                   |                             |                    | 132        | 29.6751              | 5267.4            | 4652.7                      | 70.72              |
|            |                      |                   |                             |                    | 133        | 29.5164              | 5311.7            | 4693.7                      | 71.06              |
|            |                      |                   |                             |                    | 134        | 29.3567              | 5356.2            | 4734.9                      | 71.39              |
|            |                      |                   |                             |                    | 135        | 29.1961              | 5401.1            | 4776.3                      | 71.73              |
|            |                      |                   |                             |                    | 136        | 29.0345              | 5445.8            | 4817.6                      | 72.06              |
|            |                      |                   |                             |                    | 137        | 28.8719              | 5490.6            | 4858.9                      | 72.38              |
|            |                      |                   |                             |                    | 138        | 28.7083              | 5535.4            | 4900.1                      | 72.71              |
|            |                      |                   |                             |                    | 139        | 28.5436              | 5580.3            | 4941.3                      | 73.04              |
|            |                      |                   |                             |                    | 140        | 28.3778              | 5625.2            | 4982.5                      | 73.36              |
|            |                      |                   |                             |                    | 141        | 28.2108              | 5670.1            | 5023.6                      | 73.68              |
|            |                      |                   |                             |                    | 142        | 28.0427              | 5715.0            | 5064.6                      | 74.00              |
|            |                      |                   |                             |                    | 143        | 27.8735              | 5760.1            | 5105.7                      | 74.31              |
|            |                      |                   |                             |                    | 144        | 27.7030              | 5805.3            | 5147.0                      | 74.63              |
|            |                      |                   |                             |                    | 145        | 27.5313              | 5850.8            | 5188.3                      | 74.94              |
|            |                      |                   |                             |                    | 146        | 27.3582              | 5896.6            | 5229.9                      | 75.26              |
|            |                      |                   |                             |                    | 147        | 27.1839              | 5942.6            | 5271.7                      | 75.58              |
|            |                      |                   |                             |                    | 148        | 27.0083              | 5988.9            | 5313.6                      | 75.89              |
|            |                      |                   |                             |                    | 149        | 26.8313              | 6035.5            | 5355.7                      | 76.21              |
|            |                      |                   |                             |                    | 150        | 26.6528              | 6082.3            | 5398.0                      | 76.52              |
|            |                      |                   |                             |                    | 151        | 26.4730              | 6129.7            | 5440.7                      | 76.84              |
|            |                      |                   |                             |                    | 152        | 26.2917              | 6177.8            | 5484.1                      | 77.16              |
|            |                      |                   |                             |                    | 153        | 26.1089              | 6226.2            | 5527.7                      | 77.48              |
|            |                      |                   |                             |                    | 154        | 25.9246              | 6275.0            | 5571.4                      | 77.79              |
|            |                      |                   |                             |                    | 155        | 25.7388              | 6324.0            | 5615.3                      | 78.11              |
|            |                      |                   |                             |                    | 156        | 25.5514              | 6373.3            | 5659.4                      | 78.43              |
|            |                      |                   |                             |                    | 157        | 25.3625              | 6422.8            | 5703.7                      | 78.75              |
|            |                      |                   |                             |                    | 158        | 25.1719              | 6472.7            | 5748.2                      | 79.06              |
|            |                      |                   |                             |                    | 159        | 24.9797              | 6523.0            | 5792.8                      | 79.38              |
|            |                      |                   |                             |                    | 160        | 24.7860              | 6573.5            | 5837.6                      | 79.70              |
| *          | 88.257               | 35.9774           | 3349.3                      | 2842.3             | 53.07      |                      |                   |                             |                    |
|            | 89                   | 35.8797           | 3381.3                      | 2873.0             | 53.43      |                      |                   |                             |                    |
|            | 90                   | 35.7475           | 3424.5                      | 2914.3             | 53.91      |                      |                   |                             |                    |

\* PHASE CHANGE

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| 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        | 24.5905              | 6624.3            | 5882.6                      | 80.01              | 231        | 11.9011              | 10319.2           | 8786.7                      | 99.17              |
| 162        | 24.3935              | 6675.5            | 5927.8                      | 80.33              | 232        | 11.7982              | 10362.1           | 8816.2                      | 99.35              |
| 163        | 24.1948              | 6727.0            | 5973.1                      | 80.65              | 233        | 11.6974              | 10404.7           | 8845.4                      | 99.54              |
| 164        | 23.9944              | 6778.8            | 6018.7                      | 80.96              | 234        | 11.5985              | 10446.8           | 8874.3                      | 99.72              |
| 165        | 23.7925              | 6830.9            | 6064.4                      | 81.28              | 235        | 11.5016              | 10488.7           | 8902.9                      | 99.89              |
| 166        | 23.5889              | 6883.4            | 6110.2                      | 81.60              | 236        | 11.4065              | 10530.2           | 8931.2                      | 100.07             |
| 167        | 23.3837              | 6936.2            | 6156.3                      | 81.91              | 237        | 11.3133              | 10571.4           | 8959.3                      | 100.25             |
| 168        | 23.1770              | 6989.4            | 6202.5                      | 82.23              | 238        | 11.2218              | 10612.3           | 8987.0                      | 100.42             |
| 169        | 22.9687              | 7042.9            | 6248.8                      | 82.55              | 239        | 11.1321              | 10652.9           | 9014.5                      | 100.59             |
| 170        | 22.7590              | 7096.7            | 6295.3                      | 82.87              | 240        | 11.0441              | 10693.1           | 9041.7                      | 100.76             |
| 171        | 22.5478              | 7150.8            | 6341.9                      | 83.18              | 241        | 10.9577              | 10733.1           | 9068.6                      | 100.92             |
| 172        | 22.3353              | 7205.3            | 6388.7                      | 83.50              | 242        | 10.8729              | 10772.8           | 9095.3                      | 101.09             |
| 173        | 22.1215              | 7260.1            | 6435.6                      | 83.82              | 243        | 10.7896              | 10812.1           | 9121.7                      | 101.25             |
| 174        | 21.9065              | 7315.1            | 6482.5                      | 84.14              | 244        | 10.7079              | 10851.2           | 9147.9                      | 101.41             |
| 175        | 21.6904              | 7370.5            | 6529.6                      | 84.45              | 245        | 10.6277              | 10890.0           | 9173.9                      | 101.57             |
| 176        | 21.4733              | 7426.2            | 6576.8                      | 84.77              | 246        | 10.5489              | 10928.6           | 9199.6                      | 101.72             |
| 177        | 21.2553              | 7482.1            | 6624.0                      | 85.09              | 247        | 10.4715              | 10966.9           | 9225.1                      | 101.88             |
| 178        | 21.0366              | 7538.3            | 6671.3                      | 85.40              | 248        | 10.3954              | 11004.9           | 9250.4                      | 102.03             |
| 179        | 20.8173              | 7594.7            | 6718.6                      | 85.72              | 249        | 10.3207              | 11042.7           | 9275.5                      | 102.19             |
| 180        | 20.5975              | 7651.4            | 6765.9                      | 86.04              | 250        | 10.2473              | 11080.2           | 9300.3                      | 102.34             |
| 181        | 20.3774              | 7708.2            | 6813.2                      | 86.35              | 251        | 10.1751              | 11117.5           | 9325.0                      | 102.48             |
| 182        | 20.1571              | 7765.2            | 6860.4                      | 86.67              | 252        | 10.1042              | 11154.5           | 9349.4                      | 102.63             |
| 183        | 19.9370              | 7822.4            | 6907.6                      | 86.98              | 253        | 10.0345              | 11191.3           | 9373.7                      | 102.78             |
| 184        | 19.7170              | 7879.7            | 6954.7                      | 87.29              | 254        | 9.96598              | 11227.9           | 9397.8                      | 102.92             |
| 185        | 19.4975              | 7937.2            | 7001.7                      | 87.60              | 255        | 9.89856              | 11264.2           | 9421.6                      | 103.06             |
| 186        | 19.2785              | 7994.7            | 7048.6                      | 87.91              | 256        | 9.83225              | 11300.4           | 9445.4                      | 103.21             |
| 187        | 19.0604              | 8052.2            | 7095.3                      | 88.22              | 257        | 9.76702              | 11336.3           | 9468.9                      | 103.35             |
| 188        | 18.8433              | 8109.8            | 7141.9                      | 88.53              | 258        | 9.70284              | 11372.0           | 9492.2                      | 103.48             |
| 189        | 18.6273              | 8167.4            | 7188.2                      | 88.83              | 259        | 9.63970              | 11407.5           | 9515.4                      | 103.62             |
| 190        | 18.4127              | 8224.9            | 7234.3                      | 89.14              | 260        | 9.57755              | 11442.8           | 9538.4                      | 103.76             |
| 191        | 18.1997              | 8282.3            | 7280.2                      | 89.44              | 261        | 9.51639              | 11477.9           | 9561.3                      | 103.89             |
| 192        | 17.9884              | 8339.7            | 7325.8                      | 89.74              | 262        | 9.45618              | 11512.8           | 9584.0                      | 104.03             |
| 193        | 17.7791              | 8396.9            | 7371.1                      | 90.04              | 263        | 9.39690              | 11547.5           | 9606.5                      | 104.16             |
| 194        | 17.5718              | 8454.0            | 7416.1                      | 90.33              | 264        | 9.33853              | 11582.0           | 9628.9                      | 104.29             |
| 195        | 17.3668              | 8510.9            | 7460.7                      | 90.62              | 265        | 9.28105              | 11616.3           | 9651.1                      | 104.42             |
| 196        | 17.1641              | 8567.6            | 7505.0                      | 90.91              | 266        | 9.22444              | 11650.5           | 9673.2                      | 104.55             |
| 197        | 16.9639              | 8624.1            | 7548.9                      | 91.20              | 267        | 9.16867              | 11684.5           | 9695.2                      | 104.68             |
| 198        | 16.7664              | 8680.3            | 7592.4                      | 91.48              | 268        | 9.11373              | 11718.3           | 9717.0                      | 104.80             |
| 199        | 16.5716              | 8736.2            | 7635.6                      | 91.77              | 269        | 9.05959              | 11751.9           | 9738.7                      | 104.93             |
| 200        | 16.3796              | 8791.8            | 7678.3                      | 92.05              | 270        | 9.00625              | 11785.4           | 9760.2                      | 105.05             |
| 201        | 16.1905              | 8847.1            | 7720.6                      | 92.32              | 271        | 8.95367              | 11818.7           | 9781.7                      | 105.17             |
| 202        | 16.0044              | 8902.1            | 7762.4                      | 92.59              | 272        | 8.90185              | 11851.8           | 9802.9                      | 105.30             |
| 203        | 15.8214              | 8956.7            | 7803.9                      | 92.86              | 273        | 8.85076              | 11884.8           | 9824.1                      | 105.42             |
| 204        | 15.6414              | 9010.9            | 7844.8                      | 93.13              | 274        | 8.80039              | 11917.7           | 9845.2                      | 105.54             |
| 205        | 15.4645              | 9064.8            | 7885.4                      | 93.39              | 275        | 8.75072              | 11950.4           | 9866.1                      | 105.66             |
| 206        | 15.2908              | 9118.2            | 7925.4                      | 93.65              | 276        | 8.70175              | 11982.9           | 9886.9                      | 105.78             |
| 207        | 15.1202              | 9171.3            | 7965.0                      | 93.91              | 277        | 8.65344              | 12015.3           | 9907.6                      | 105.89             |
| 208        | 14.9528              | 9224.0            | 8004.2                      | 94.16              | 278        | 8.60579              | 12047.6           | 9928.2                      | 106.01             |
| 209        | 14.7885              | 9276.2            | 8042.9                      | 94.41              | 279        | 8.55879              | 12079.7           | 9948.6                      | 106.12             |
| 210        | 14.6273              | 9328.0            | 8081.1                      | 94.66              | 280        | 8.51241              | 12111.6           | 9969.0                      | 106.24             |
| 211        | 14.4693              | 9379.4            | 8118.9                      | 94.91              | 281        | 8.46665              | 12143.5           | 9989.3                      | 106.35             |
| 212        | 14.3144              | 9430.4            | 8156.2                      | 95.15              | 282        | 8.42149              | 12175.2           | 10009.4                     | 106.46             |
| 213        | 14.1626              | 9481.0            | 8193.1                      | 95.39              | 283        | 8.37692              | 12206.8           | 10029.5                     | 106.58             |
| 214        | 14.0138              | 9531.1            | 8229.6                      | 95.62              | 284        | 8.33293              | 12238.2           | 10049.5                     | 106.69             |
| 215        | 13.8680              | 9580.7            | 8265.6                      | 95.85              | 285        | 8.28951              | 12269.6           | 10069.3                     | 106.80             |
| 216        | 13.7251              | 9630.0            | 8301.1                      | 96.08              | 286        | 8.24664              | 12300.8           | 10089.1                     | 106.91             |
| 217        | 13.5852              | 9678.8            | 8336.2                      | 96.31              | 287        | 8.20431              | 12331.9           | 10108.8                     | 107.02             |
| 218        | 13.4481              | 9727.2            | 8370.9                      | 96.53              | 288        | 8.16251              | 12362.8           | 10128.3                     | 107.12             |
| 219        | 13.3138              | 9775.2            | 8405.2                      | 96.75              | 289        | 8.12123              | 12393.7           | 10147.8                     | 107.23             |
| 220        | 13.1822              | 9822.7            | 8439.1                      | 96.96              | 290        | 8.08047              | 12424.4           | 10167.2                     | 107.34             |
| 221        | 13.0534              | 9869.8            | 8472.6                      | 97.18              | 291        | 8.04020              | 12455.0           | 10186.6                     | 107.44             |
| 222        | 12.9272              | 9916.5            | 8505.7                      | 97.39              | 292        | 8.00042              | 12485.5           | 10205.8                     | 107.55             |
| 223        | 12.8036              | 9962.8            | 8538.3                      | 97.60              | 293        | 7.96112              | 12515.9           | 10224.9                     | 107.65             |
| 224        | 12.6826              | 10008.8           | 8570.6                      | 97.80              | 294        | 7.92229              | 12546.2           | 10244.0                     | 107.75             |
| 225        | 12.5640              | 10054.3           | 8602.6                      | 98.00              | 295        | 7.88393              | 12576.4           | 10263.0                     | 107.86             |
| 226        | 12.4478              | 10099.4           | 8634.1                      | 98.20              | 296        | 7.84601              | 12606.5           | 10281.9                     | 107.96             |
| 227        | 12.3339              | 10144.1           | 8665.3                      | 98.40              | 297        | 7.80855              | 12636.5           | 10300.7                     | 108.06             |
| 228        | 12.2224              | 10188.4           | 8696.2                      | 98.60              | 298        | 7.77151              | 12666.4           | 10319.5                     | 108.16             |
| 229        | 12.1131              | 10232.4           | 8726.7                      | 98.79              | 299        | 7.73490              | 12696.2           | 10338.2                     | 108.26             |
| 230        | 12.0061              | 10276.0           | 8756.9                      | 98.98              | 300        | 7.69872              | 12725.9           | 10356.8                     | 108.36             |