

## PROPERTY VS. TEMPERATURE CHART

### DURATHERM G STANDARD

| TEMPERATURE<br>(Fahrenheit) | DENSITY<br>(lb/ft <sup>3</sup> ) | KINEMATIC<br>VISCOSITY<br>(Centistoke) | DYNAMIC<br>VISCOSITY<br>(Centipoise) | THERMAL<br>CONDUCTIVITY<br>(BTU/hr-F-ft) | HEAT<br>CAPACITY<br>(BTU/lb.F) | VAPOUR<br>PRESSURE<br>(Psia) |
|-----------------------------|----------------------------------|--|--------------------------------------|--|--------------------------------|------------------------------|
| -40                         | 59.39                            | 22354.00                               | 21266.00                             | 0.102                                    | 0.033                          | 0.00                         |
| -30                         | 59.39                            | 17552.60                               | 16698.00                             | 0.101                                    | 0.036                          | 0.00                         |
| -20                         | 59.12                            | 12544.02                               | 12042.26                             | 0.101                                    | 0.039                          | 0.00                         |
| -10                         | 59.12                            | 5694.52                                | 5466.74                              | 0.101                                    | 0.044                          | 0.00                         |
| 0                           | 59.12                            | 2839.84                                | 2697.85                              | 0.100                                    | 0.444                          | 0.00                         |
| 10                          | 58.92                            | 1533.67                                | 1456.99                              | 0.100                                    | 0.446                          | 0.00                         |
| 20                          | 58.72                            | 886.51                                 | 839.52                               | 0.099                                    | 0.449                          | 0.00                         |
| 30                          | 58.52                            | 543.19                                 | 512.66                               | 0.099                                    | 0.452                          | 0.00                         |
| 40                          | 58.32                            | 349.98                                 | 329.19                               | 0.098                                    | 0.454                          | 0.00                         |
| 50                          | 58.12                            | 235.53                                 | 220.78                               | 0.098                                    | 0.457                          | 0.00                         |
| 60                          | 57.92                            | 164.63                                 | 153.80                               | 0.097                                    | 0.459                          | 0.00                         |
| 70                          | 57.72                            | 118.95                                 | 110.74                               | 0.097                                    | 0.462                          | 0.00                         |
| 80                          | 57.52                            | 88.47                                  | 82.08                                | 0.096                                    | 0.465                          | 0.01                         |
| 90                          | 57.32                            | 67.50                                  | 62.41                                | 0.096                                    | 0.467                          | 0.03                         |
| 100                         | 57.12                            | 52.68                                  | 48.54                                | 0.095                                    | 0.470                          | 0.04                         |
| 110                         | 56.95                            | 41.95                                  | 38.52                                | 0.095                                    | 0.473                          | 0.05                         |
| 120                         | 56.78                            | 34.00                                  | 31.11                                | 0.094                                    | 0.475                          | 0.07                         |
| 130                         | 56.62                            | 28.00                                  | 25.54                                | 0.094                                    | 0.478                          | 0.08                         |
| 140                         | 56.45                            | 23.39                                  | 21.28                                | 0.093                                    | 0.481                          | 0.09                         |
| 150                         | 56.28                            | 19.78                                  | 17.94                                | 0.093                                    | 0.483                          | 0.11                         |
| 160                         | 56.11                            | 16.93                                  | 15.31                                | 0.092                                    | 0.486                          | 0.12                         |
| 170                         | 55.94                            | 14.64                                  | 13.20                                | 0.092                                    | 0.489                          | 0.13                         |
| 180                         | 55.77                            | 12.77                                  | 11.48                                | 0.091                                    | 0.491                          | 0.15                         |
| 190                         | 55.61                            | 11.24                                  | 10.07                                | 0.091                                    | 0.494                          | 0.15                         |
| 200                         | 55.44                            | 9.97                                   | 8.91                                 | 0.090                                    | 0.497                          | 0.15                         |
| 210                         | 55.27                            | 8.91                                   | 7.94                                 | 0.090                                    | 0.499                          | 0.15                         |
| 220                         | 55.10                            | 8.01                                   | 7.11                                 | 0.089                                    | 0.502                          | 0.16                         |
| 230                         | 54.93                            | 7.24                                   | 6.41                                 | 0.089                                    | 0.505                          | 0.16                         |
| 240                         | 54.76                            | 6.58                                   | 5.81                                 | 0.088                                    | 0.507                          | 0.16                         |
| 250                         | 54.59                            | 6.01                                   | 5.29                                 | 0.088                                    | 0.510                          | 0.16                         |
| 260                         | 54.43                            | 5.52                                   | 4.84                                 | 0.087                                    | 0.513                          | 0.17                         |
| 270                         | 54.26                            | 5.09                                   | 4.45                                 | 0.087                                    | 0.515                          | 0.17                         |
| 280                         | 54.09                            | 4.71                                   | 4.11                                 | 0.086                                    | 0.518                          | 0.17                         |
| 290                         | 53.92                            | 4.37                                   | 3.80                                 | 0.086                                    | 0.521                          | 0.17                         |
| 300                         | 53.75                            | 4.08                                   | 3.53                                 | 0.085                                    | 0.523                          | 0.18                         |
| 310                         | 53.58                            | 3.81                                   | 3.29                                 | 0.085                                    | 0.526                          | 0.18                         |
| 320                         | 53.41                            | 3.57                                   | 3.07                                 | 0.084                                    | 0.529                          | 0.19                         |
| 330                         | 53.25                            | 3.36                                   | 2.88                                 | 0.084                                    | 0.531                          | 0.20                         |
| 340                         | 53.08                            | 3.17                                   | 2.71                                 | 0.083                                    | 0.534                          | 0.20                         |
| 350                         | 52.91                            | 2.99                                   | 2.55                                 | 0.083                                    | 0.537                          | 0.21                         |
| 360                         | 52.74                            | 2.83                                   | 2.41                                 | 0.082                                    | 0.539                          | 0.23                         |
| 370                         | 52.57                            | 2.69                                   | 2.28                                 | 0.082                                    | 0.542                          | 0.26                         |
| 380                         | 52.40                            | 2.56                                   | 2.16                                 | 0.081                                    | 0.545                          | 0.29                         |
| 390                         | 52.24                            | 2.43                                   | 2.05                                 | 0.081                                    | 0.547                          | 0.31                         |
| 400                         | 52.07                            | 2.32                                   | 1.95                                 | 0.080                                    | 0.550                          | 0.34                         |
| 410                         | 50.77                            | 2.22                                   | 1.86                                 | 0.080                                    | 0.551                          | 0.36                         |
| 420                         | 50.60                            | 2.13                                   | 1.78                                 | 0.079                                    | 0.552                          | 0.38                         |
| 430                         | 50.44                            | 2.04                                   | 1.66                                 | 0.079                                    | 0.553                          | 0.40                         |
| 440                         | 50.27                            | 1.96                                   | 1.59                                 | 0.078                                    | 0.554                          | 0.42                         |
| 450                         | 50.10                            | 1.88                                   | 1.52                                 | 0.078                                    | 0.555                          | 0.44                         |
| 460                         | 49.93                            | 1.81                                   | 1.46                                 | 0.078                                    | 0.556                          | 0.46                         |
| 470                         | 49.76                            | 1.75                                   | 1.40                                 | 0.077                                    | 0.557                          | 0.49                         |
| 480                         | 49.59                            | 1.68                                   | 1.34                                 | 0.077                                    | 0.558                          | 0.51                         |
| 490                         | 49.42                            | 1.63                                   | 1.30                                 | 0.076                                    | 0.559                          | 0.53                         |
| 500                         | 49.26                            | 1.57                                   | 1.25                                 | 0.076                                    | 0.560                          | 0.55                         |

## PROPERTY VS. TEMPERATURE CHART

### DURATHERM G

#### METRIC

| TEMPERATURE<br>(Celsius) | DENSITY<br>(kg/m <sup>3</sup> ) | KINEMATIC<br>VISCOSITY<br>(centistokes) | DYNAMIC<br>VISCOSITY<br>(centipoise) | THERMAL<br>CONDUCTIVITY<br>(W/m.K) | HEAT<br>CAPACITY<br>(kJ/kg.K) | VAPOR<br>PRESSURE<br>(KPA) |
|--------------------------|---------------------------------|---|--------------------------------------|------------------------------------|-------------------------------|----------------------------|
| -40                      | 960.00                          | 22354.00                                | 21266.00                             | 0.177                              | 1.813                         | 0.00                       |
| -34                      | 960.00                          | 17552.60                                | 16698.00                             | 0.176                              | 1.824                         | 0.00                       |
| -29                      | 950.00                          | 12544.02                                | 12042.26                             | 0.175                              | 1.835                         | 0.00                       |
| -23                      | 950.00                          | 5694.52                                 | 5466.74                              | 0.174                              | 1.846                         | 0.00                       |
| -18                      | 946.99                          | 2839.84                                 | 2697.85                              | 0.173                              | 1.857                         | 0.00                       |
| -12                      | 943.79                          | 1533.67                                 | 1456.99                              | 0.172                              | 1.868                         | 0.00                       |
| -7                       | 940.59                          | 886.51                                  | 839.52                               | 0.171                              | 1.879                         | 0.00                       |
| -1                       | 937.39                          | 543.19                                  | 512.66                               | 0.170                              | 1.890                         | 0.00                       |
| 4                        | 934.19                          | 349.98                                  | 329.19                               | 0.170                              | 1.902                         | 0.00                       |
| 10                       | 931.00                          | 235.53                                  | 220.78                               | 0.169                              | 1.913                         | 0.00                       |
| 16                       | 927.80                          | 164.63                                  | 153.80                               | 0.168                              | 1.924                         | 0.00                       |
| 21                       | 924.60                          | 118.95                                  | 110.74                               | 0.167                              | 1.935                         | 0.00                       |
| 27                       | 921.40                          | 88.47                                   | 82.08                                | 0.166                              | 1.946                         | 0.09                       |
| 32                       | 918.20                          | 67.50                                   | 62.41                                | 0.165                              | 1.957                         | 0.18                       |
| 38                       | 915.00                          | 52.68                                   | 48.54                                | 0.164                              | 1.968                         | 0.27                       |
| 43                       | 912.30                          | 41.95                                   | 38.52                                | 0.164                              | 1.979                         | 0.37                       |
| 49                       | 909.60                          | 34.00                                   | 31.11                                | 0.163                              | 1.990                         | 0.46                       |
| 54                       | 906.90                          | 28.00                                   | 25.54                                | 0.162                              | 2.001                         | 0.55                       |
| 60                       | 904.20                          | 23.39                                   | 21.28                                | 0.161                              | 2.012                         | 0.64                       |
| 66                       | 901.51                          | 19.78                                   | 17.94                                | 0.160                              | 2.024                         | 0.73                       |
| 71                       | 898.81                          | 16.93                                   | 15.31                                | 0.159                              | 2.035                         | 0.82                       |
| 77                       | 896.11                          | 14.64                                   | 13.20                                | 0.158                              | 2.046                         | 0.92                       |
| 82                       | 893.41                          | 12.77                                   | 11.48                                | 0.157                              | 2.057                         | 1.01                       |
| 88                       | 890.71                          | 11.24                                   | 10.07                                | 0.157                              | 2.068                         | 1.03                       |
| 93                       | 888.01                          | 9.97                                    | 8.91                                 | 0.156                              | 2.079                         | 1.04                       |
| 99                       | 885.31                          | 8.91                                    | 7.94                                 | 0.155                              | 2.091                         | 1.06                       |
| 104                      | 882.61                          | 8.01                                    | 7.11                                 | 0.154                              | 2.102                         | 1.08                       |
| 110                      | 879.91                          | 7.24                                    | 6.41                                 | 0.153                              | 2.113                         | 1.10                       |
| 116                      | 877.21                          | 6.58                                    | 5.81                                 | 0.152                              | 2.124                         | 1.11                       |
| 121                      | 874.52                          | 6.01                                    | 5.29                                 | 0.151                              | 2.135                         | 1.13                       |
| 127                      | 871.82                          | 5.52                                    | 4.84                                 | 0.151                              | 2.146                         | 1.15                       |
| 132                      | 869.12                          | 5.09                                    | 4.45                                 | 0.150                              | 2.158                         | 1.17                       |
| 138                      | 866.42                          | 4.71                                    | 4.11                                 | 0.149                              | 2.169                         | 1.18                       |
| 143                      | 863.72                          | 4.37                                    | 3.80                                 | 0.148                              | 2.180                         | 1.20                       |
| 149                      | 861.02                          | 4.08                                    | 3.53                                 | 0.147                              | 2.191                         | 1.22                       |
| 154                      | 858.32                          | 3.81                                    | 3.29                                 | 0.146                              | 2.202                         | 1.26                       |
| 160                      | 855.62                          | 3.57                                    | 3.07                                 | 0.145                              | 2.213                         | 1.31                       |
| 166                      | 852.92                          | 3.36                                    | 2.88                                 | 0.145                              | 2.225                         | 1.35                       |
| 171                      | 850.22                          | 3.17                                    | 2.71                                 | 0.144                              | 2.236                         | 1.40                       |
| 177                      | 847.53                          | 2.99                                    | 2.55                                 | 0.143                              | 2.247                         | 1.44                       |
| 182                      | 844.83                          | 2.83                                    | 2.41                                 | 0.142                              | 2.258                         | 1.62                       |
| 188                      | 842.13                          | 2.69                                    | 2.28                                 | 0.141                              | 2.269                         | 1.79                       |
| 193                      | 839.43                          | 2.56                                    | 2.16                                 | 0.140                              | 2.280                         | 1.97                       |
| 199                      | 836.73                          | 2.43                                    | 2.05                                 | 0.139                              | 2.292                         | 2.14                       |
| 204                      | 834.03                          | 2.32                                    | 1.95                                 | 0.138                              | 2.303                         | 2.32                       |
| 210                      | 831.33                          | 2.22                                    | 1.86                                 | 0.138                              | 2.307                         | 2.47                       |
| 216                      | 810.60                          | 2.13                                    | 1.78                                 | 0.137                              | 2.311                         | 2.61                       |
| 221                      | 807.90                          | 2.04                                    | 1.66                                 | 0.136                              | 2.315                         | 2.76                       |
| 227                      | 805.20                          | 1.96                                    | 1.59                                 | 0.136                              | 2.319                         | 2.91                       |
| 232                      | 802.50                          | 1.88                                    | 1.52                                 | 0.135                              | 2.324                         | 3.06                       |
| 238                      | 799.80                          | 1.81                                    | 1.46                                 | 0.134                              | 2.328                         | 3.20                       |
| 243                      | 797.10                          | 1.75                                    | 1.40                                 | 0.134                              | 2.332                         | 3.35                       |
| 249                      | 794.40                          | 1.68                                    | 1.34                                 | 0.133                              | 2.336                         | 3.50                       |
| 254                      | 791.70                          | 1.63                                    | 1.30                                 | 0.132                              | 2.340                         | 3.64                       |
| 260                      | 789.00                          | 1.57                                    | 1.25                                 | 0.132                              | 2.345                         | 3.79                       |