

**XCELTHERM® XT Engineering Properties\***



| Temperature |      | Viscosity<br>cP | Density |       | Specific Heat |       | Thermal Conductivity |        | Vapor Pressure |        |
|-------------|------|-----------------|---------|-------|---------------|-------|----------------------|--------|----------------|--------|
| °F          | °C   |                 | lb/ft3  | kg/m3 | BTU/lb-°F     | J/g-K | BTU/ft-hr-°F         | W/m-K  | psia           | kg/cm2 |
| -50         | -46  | 114.95          | 65.2    | 1044  | 0.359         | 1.5   | 0.083                | 0.1437 | -              | -      |
| 0           | -18  | 17.938          | 63.9    | 1024  | 0.379         | 1.59  | 0.0805               | 0.1394 | -              | -      |
| 10          | 12   | 13.886          | 63.7    | 1020  | 0.383         | 1.6   | 0.08                 | 0.1385 | -              | -      |
| 20          | -6.7 | 10.251          | 63.4    | 1016  | 0.387         | 1.62  | 0.0795               | 0.1377 | -              | -      |
| 30          | -1.1 | 8.914           | 63.2    | 1012  | 0.391         | 1.64  | 0.079                | 0.1368 | -              | -      |
| 40          | 4.4  | 7.164           | 62.9    | 1008  | 0.395         | 1.66  | 0.0786               | 0.136  | -              | -      |
| 50          | 10   | 5.98            | 62.7    | 1004  | 0.4           | 1.67  | 0.0781               | 0.1351 | -              | -      |
| 60          | 16   | 5.034           | 62.4    | 1000  | 0.404         | 1.69  | 0.0776               | 0.1342 | -              | -      |
| 70          | 21   | 4.245           | 62.2    | 996.2 | 0.408         | 1.71  | 0.0771               | 0.1334 | -              | -      |
| 80          | 27   | 3.661           | 61.9    | 992.2 | 0.412         | 1.72  | 0.0766               | 0.1325 | -              | -      |
| 90          | 32   | 3.211           | 61.7    | 988.2 | 0.416         | 1.74  | 0.0761               | 0.1317 | -              | -      |
| 100         | 38   | 2.876           | 61.4    | 984.2 | 0.42          | 1.76  | 0.0756               | 0.1308 | -              | -      |
| 110         | 43   | 2.543           | 61.2    | 980.2 | 0.424         | 1.78  | 0.0751               | 0.13   | -              | -      |
| 120         | 49   | 2.264           | 60.9    | 976.2 | 0.428         | 1.79  | 0.0746               | 0.1291 | -              | -      |
| 130         | 54   | 2.035           | 60.7    | 972.2 | 0.432         | 1.81  | 0.0741               | 0.1283 | -              | -      |
| 140         | 60   | 1.841           | 60.4    | 968.2 | 0.436         | 1.83  | 0.0736               | 0.1274 | -              | -      |
| 150         | 66   | 1.678           | 60.2    | 964.2 | 0.441         | 1.84  | 0.0731               | 0.1265 | -              | -      |
| 160         | 71   | 1.538           | 59.9    | 960.2 | 0.445         | 1.86  | 0.0726               | 0.1257 | -              | -      |
| 170         | 77   | 1.416           | 59.7    | 956.2 | 0.449         | 1.88  | 0.0721               | 0.1248 | -              | -      |
| 180         | 82   | 1.31            | 59.4    | 952.2 | 0.453         | 1.9   | 0.0716               | 0.124  | -              | -      |
| 190         | 88   | 1.218           | 59.2    | 948.2 | 0.457         | 1.91  | 0.0711               | 0.1231 | -              | -      |
| 200         | 93   | 1.135           | 58.9    | 944.2 | 0.461         | 1.93  | 0.0706               | 0.1223 | 0.022          | 0.0016 |
| 210         | 99   | 1.063           | 58.7    | 940.3 | 0.465         | 1.95  | 0.0701               | 0.1214 | 0.031          | 0.0022 |
| 220         | 104  | 0.991           | 58.4    | 936.3 | 0.469         | 1.96  | 0.0696               | 0.1205 | 0.042          | 0.003  |
| 230         | 110  | 0.926           | 58.2    | 932.3 | 0.473         | 1.98  | 0.0691               | 0.1197 | 0.057          | 0.004  |
| 240         | 116  | 0.868           | 57.9    | 928.3 | 0.477         | 2     | 0.0687               | 0.1188 | 0.076          | 0.0053 |
| 250         | 121  | 0.816           | 57.7    | 924.3 | 0.482         | 2.02  | 0.0682               | 0.118  | 0.1            | 0.007  |
| 260         | 127  | 0.768           | 57.4    | 920.3 | 0.486         | 2.03  | 0.0677               | 0.1171 | 0.13           | 0.0091 |
| 270         | 132  | 0.724           | 57.2    | 916.3 | 0.49          | 2.05  | 0.0672               | 0.1163 | 0.167          | 0.0118 |
| 280         | 138  | 0.685           | 57      | 912.3 | 0.494         | 2.07  | 0.0667               | 0.1154 | 0.214          | 0.015  |
| 290         | 143  | 0.644           | 56.7    | 908.3 | 0.498         | 2.08  | 0.0662               | 0.1145 | 0.271          | 0.019  |
| 300         | 149  | 0.615           | 56.5    | 904.3 | 0.502         | 2.1   | 0.0657               | 0.1137 | 0.34           | 0.0239 |
| 310         | 154  | 0.585           | 56.2    | 900.3 | 0.506         | 2.12  | 0.0652               | 0.1128 | 0.423          | 0.0298 |
| 320         | 160  | 0.555           | 56      | 896.3 | 0.51          | 2.14  | 0.0647               | 0.112  | 0.524          | 0.0368 |
| 340         | 171  | 0.502           | 55.5    | 888.3 | 0.518         | 2.17  | 0.0637               | 0.1103 | 0.787          | 0.0553 |
| 350         | 177  | 0.479           | 55.2    | 884.3 | 0.523         | 2.19  | 0.0632               | 0.1094 | 0.956          | 0.0672 |
| 360         | 182  | 0.457           | 55      | 880.3 | 0.527         | 2.2   | 0.0627               | 0.1085 | 1.155          | 0.0812 |
| 370         | 188  | 0.437           | 54.7    | 876.3 | 0.531         | 2.22  | 0.0622               | 0.1077 | 1.389          | 0.0976 |
| 380         | 193  | 0.417           | 54.5    | 872.3 | 0.535         | 2.24  | 0.0617               | 0.1068 | 1.661          | 0.1168 |
| 390         | 199  | 0.4             | 54.2    | 868.3 | 0.539         | 2.26  | 0.0612               | 0.106  | 1.978          | 0.139  |
| 400         | 204  | 0.382           | 54      | 864.3 | 0.543         | 2.27  | 0.0607               | 0.1051 | 2.344          | 0.1648 |
| 410         | 210  | 0.367           | 53.7    | 860.3 | 0.547         | 2.29  | 0.0602               | 0.1043 | 2.767          | 0.1945 |

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| °F          | °C  |           | lb/ft3  | kg/m3 | BTU/lb-°F     | J/g-K | BTU/ft-hr-°F         | W/m-K  | psia           | kg/cm2 |
| 420         | 216 | 0.352     | 53.5    | 856.3 | 0.551         | 2.31  | 0.0597               | 0.1034 | 3.253          | 0.2287 |
| 430         | 221 | 0.34      | 53.2    | 852.3 | 0.555         | 2.32  | 0.0592               | 0.1025 | 3.809          | 0.2678 |
| 440         | 227 | 0.326     | 53      | 848.3 | 0.559         | 2.34  | 0.0588               | 0.1017 | 4.445          | 0.3125 |
| 450         | 232 | 0.314     | 52.7    | 844.3 | 0.564         | 2.36  | 0.0583               | 0.1008 | 5.169          | 0.3634 |
| 460         | 238 | 0.303     | 52.5    | 840.3 | 0.568         | 2.38  | 0.0578               | 0.1    | 5.991          | 0.4212 |
| 470         | 243 | 0.292     | 52.2    | 836.3 | 0.572         | 2.39  | 0.0573               | 0.0991 | 6.922          | 0.4867 |
| 480         | 249 | 0.282     | 52      | 832.3 | 0.576         | 2.41  | 0.0568               | 0.0983 | 7.973          | 0.5605 |
| 490         | 254 | 0.272     | 51.7    | 828.3 | 0.58          | 2.43  | 0.0563               | 0.0974 | 9.156          | 0.6438 |
| 500         | 260 | 0.263     | 51.5    | 824.3 | 0.584         | 2.44  | 0.0558               | 0.0966 | 10.49          | 0.7373 |
| 510         | 266 | 0.258     | 51.2    | 820.3 | 0.588         | 2.46  | 0.0553               | 0.0957 | 11.98          | 0.8421 |
| 520         | 271 | 0.251     | 51      | 816.4 | 0.592         | 2.48  | 0.0548               | 0.0948 | 13.65          | 0.9594 |
| 530         | 277 | 0.245     | 50.7    | 812.4 | 0.596         | 2.5   | 0.0543               | 0.094  | 15.51          | 1.0903 |
| 540         | 282 | 0.239     | 50.5    | 808.4 | 0.6           | 2.51  | 0.0538               | 0.0931 | 17.58          | 1.2361 |
| 550         | 288 | 0.233     | 50.2    | 804.4 | 0.605         | 2.53  | 0.0533               | 0.0923 | 19.89          | 1.3981 |
| 560         | 293 | 0.227     | 50      | 800.4 | 0.609         | 2.55  | 0.0528               | 0.0914 | 22.44          | 1.578  |
| 570         | 299 | 0.222     | 49.7    | 796.4 | 0.613         | 2.56  | 0.0523               | 0.0906 | 25.27          | 1.7771 |
| 580         | 304 | 0.216     | 49.5    | 792.4 | 0.617         | 2.58  | 0.0518               | 0.0897 | 28.41          | 1.9972 |
| 590         | 310 | 0.211     | 49.2    | 788.4 | 0.621         | 2.6   | 0.0513               | 0.0888 | 31.86          | 2.2401 |
| 600         | 316 | 0.206     | 49      | 784.4 | 0.625         | 2.62  | 0.0508               | 0.088  | 35.67          | 2.5076 |
| 610         | 321 | 0.201     | 48.7    | 780.4 | 0.629         | 2.63  | 0.0503               | 0.0871 | 39.85          | 2.802  |
| 620         | 327 | 0.196     | 48.5    | 776.4 | 0.633         | 2.65  | 0.0498               | 0.0863 | 44.45          | 3.1252 |
| 630         | 332 | 0.191     | 48.2    | 772.4 | 0.637         | 2.67  | 0.0493               | 0.0854 | 49.49          | 3.4796 |
| 640         | 338 | 0.186     | 48      | 768.4 | 0.641         | 2.68  | 0.0489               | 0.0846 | 55.01          | 3.8677 |
| 650         | 343 | 0.181     | 47.7    | 764.4 | 0.646         | 2.7   | 0.0484               | 0.0837 | 61.04          | 4.292  |

\* Data Represents typical laboratory samples and are not guaranteed for all samples.