



**Thermodynamic Properties of Forane<sup>®</sup> 404A - Saturation**

| Saturation Temperature (°F) | Liquid Pressure (psia) | Vapor Pressure (psia) | Liquid Density (lb/ft <sup>3</sup> ) | Vapor Density (lb/ft <sup>3</sup> ) | Liquid Enthalpy (BTU/lb) | Vapor Enthalpy (BTU/lb) | Liquid Entropy (BTU/lb °R) | Vapor Entropy (BTU/lb °R) |
|-----------------------------|------------------------|-----------------------|--------------------------------------|-------------------------------------|--------------------------|-------------------------|----------------------------|---------------------------|
| -50                         | 15.28                  | 14.66                 | 81.25                                | 0.337                               | -2.8                     | 82.9                    | -0.007                     | 0.203                     |
| -45                         | 17.38                  | 16.71                 | 80.74                                | 0.381                               | -1.4                     | 83.6                    | -0.003                     | 0.202                     |
| -40                         | 19.70                  | 18.98                 | 80.23                                | 0.429                               | 0.0                      | 84.4                    | 0.000                      | 0.202                     |
| -35                         | 22.25                  | 21.49                 | 79.71                                | 0.482                               | 1.4                      | 85.2                    | 0.003                      | 0.201                     |
| -30                         | 25.06                  | 24.24                 | 79.18                                | 0.540                               | 2.8                      | 85.9                    | 0.007                      | 0.201                     |
| -25                         | 28.14                  | 27.27                 | 78.65                                | 0.603                               | 4.3                      | 86.7                    | 0.010                      | 0.200                     |
| -20                         | 31.50                  | 30.58                 | 78.10                                | 0.672                               | 5.7                      | 87.5                    | 0.013                      | 0.200                     |
| -15                         | 35.17                  | 34.19                 | 77.55                                | 0.747                               | 7.2                      | 88.2                    | 0.016                      | 0.199                     |
| -10                         | 39.16                  | 38.13                 | 76.99                                | 0.829                               | 8.6                      | 89.0                    | 0.020                      | 0.199                     |
| -5                          | 43.49                  | 42.41                 | 76.41                                | 0.918                               | 10.1                     | 89.7                    | 0.023                      | 0.198                     |
| 0                           | 48.18                  | 47.05                 | 75.83                                | 1.014                               | 11.7                     | 90.5                    | 0.026                      | 0.198                     |
| 5                           | 53.25                  | 52.07                 | 75.24                                | 1.118                               | 13.2                     | 91.2                    | 0.030                      | 0.198                     |
| 10                          | 58.72                  | 57.48                 | 74.64                                | 1.230                               | 14.7                     | 91.9                    | 0.033                      | 0.197                     |
| 15                          | 64.60                  | 63.32                 | 74.02                                | 1.351                               | 16.3                     | 92.6                    | 0.036                      | 0.197                     |
| 20                          | 70.93                  | 69.60                 | 73.39                                | 1.482                               | 17.9                     | 93.3                    | 0.039                      | 0.197                     |
| 25                          | 77.72                  | 76.34                 | 72.75                                | 1.623                               | 19.5                     | 94.0                    | 0.043                      | 0.197                     |
| 30                          | 84.99                  | 83.57                 | 72.10                                | 1.774                               | 21.1                     | 94.7                    | 0.046                      | 0.196                     |
| 35                          | 92.77                  | 91.29                 | 71.44                                | 1.938                               | 22.8                     | 95.3                    | 0.049                      | 0.196                     |
| 40                          | 101.07                 | 99.55                 | 70.76                                | 2.114                               | 24.4                     | 96.0                    | 0.053                      | 0.196                     |
| 45                          | 109.93                 | 108.36                | 70.06                                | 2.303                               | 26.1                     | 96.6                    | 0.056                      | 0.196                     |
| 50                          | 119.35                 | 117.74                | 69.35                                | 2.506                               | 27.9                     | 97.2                    | 0.059                      | 0.196                     |
| 55                          | 129.38                 | 127.72                | 68.62                                | 2.725                               | 29.6                     | 97.8                    | 0.063                      | 0.195                     |
| 60                          | 140.02                 | 138.32                | 67.87                                | 2.960                               | 31.4                     | 98.4                    | 0.066                      | 0.195                     |
| 65                          | 151.31                 | 149.57                | 67.10                                | 3.213                               | 33.2                     | 99.0                    | 0.070                      | 0.195                     |
| 70                          | 163.28                 | 161.49                | 66.31                                | 3.486                               | 35.1                     | 99.5                    | 0.073                      | 0.195                     |
| 75                          | 175.94                 | 174.11                | 65.50                                | 3.779                               | 37.0                     | 100.0                   | 0.076                      | 0.194                     |
| 80                          | 189.32                 | 187.44                | 64.66                                | 4.096                               | 38.9                     | 100.5                   | 0.080                      | 0.194                     |
| 85                          | 203.45                 | 201.53                | 63.80                                | 4.437                               | 40.8                     | 100.9                   | 0.083                      | 0.194                     |
| 90                          | 218.37                 | 216.39                | 62.91                                | 4.807                               | 42.8                     | 101.3                   | 0.087                      | 0.194                     |
| 95                          | 234.09                 | 232.06                | 61.98                                | 5.207                               | 44.9                     | 101.7                   | 0.091                      | 0.193                     |
| 100                         | 250.64                 | 248.55                | 61.01                                | 5.641                               | 47.0                     | 102.0                   | 0.094                      | 0.193                     |
| 105                         | 268.06                 | 265.91                | 60.00                                | 6.113                               | 49.2                     | 102.3                   | 0.098                      | 0.192                     |
| 110                         | 286.38                 | 284.16                | 58.95                                | 6.629                               | 51.4                     | 102.5                   | 0.102                      | 0.192                     |
| 115                         | 305.62                 | 303.33                | 57.84                                | 7.193                               | 53.7                     | 102.7                   | 0.106                      | 0.191                     |
| 120                         | 325.82                 | 323.45                | 56.66                                | 7.815                               | 56.1                     | 102.8                   | 0.110                      | 0.190                     |
| 125                         | 347.02                 | 344.55                | 55.41                                | 8.503                               | 58.6                     | 102.8                   | 0.114                      | 0.190                     |
| 130                         | 369.23                 | 366.67                | 54.06                                | 9.270                               | 61.2                     | 102.7                   | 0.118                      | 0.189                     |
| 135                         | 392.51                 | 389.83                | 52.59                                | 10.133                              | 64.0                     | 102.4                   | 0.123                      | 0.187                     |
| 140                         | 416.89                 | 414.08                | 50.96                                | 11.116                              | 66.9                     | 102.1                   | 0.127                      | 0.186                     |
| 145                         | 442.40                 | 439.45                | 49.09                                | 12.255                              | 70.1                     | 101.5                   | 0.133                      | 0.184                     |
| 150                         | 469.07                 | 465.97                | 46.87                                | 13.605                              | 73.7                     | 100.7                   | 0.138                      | 0.183                     |