

## TECHNICAL DATA SHEET

# NEXTHERM 332

## Heat Transfer Fluid · 111 Series

NEXTHERM 332 is a high-quality, environmentally friendly heat transfer fluid designed for systems requiring stability up to 332 °C. It suits a wide range of applications that need a long-lasting, clean-running fluid. High-quality base fluids and additives provide excellent resistance to oxidation and thermal degradation, while improved thermal capacity and conductivity can enhance system heat-transfer performance.

This non-toxic, non-hazardous formulation is safe for workers and the environment and can be disposed of in the same manner as used motor oil.

**APPLICATIONS**

- Open and closed-loop heat transfer systems (inert gas blanketed)

**BENEFITS**

- Very long fluid life – inhibited formulation prolongs life after air contamination
- Higher flash point than most competitive fluids
- Clean-running – resists deposit formation
- Thermally stable formulation
- Low odour
- Low volatility and vapour pressure
- Disposable via standard oil-recycling services

## TECHNICAL SPECIFICATIONS

# Typical properties

| Property                              | NEXTHERM 332 |
|---------------------------------------|--------------|
| Maximum Bulk Temperature (°C)         | 332          |
| Maximum Film Temperature (°C)         | 354          |
| Flash Point (°C)                      | 229          |
| Fire Point (°C)                       | 257          |
| Pour Point (°C)                       | -18          |
| Specific Gravity @ 15 °C              | 0.87         |
| Thermal Conductivity @ 120 °C (W/m·K) | 0.139        |
| Thermal Conductivity @ 220 °C (W/m·K) | 0.133        |
| Thermal Conductivity @ 260 °C (W/m·K) | 0.131        |
| Heat Capacity @ 220 °C (kJ/kg·K)      | 2.592        |
| Heat Capacity @ 280 °C (kJ/kg·K)      | 2.790        |
| Distillation Range, 10% (°C)          | 408          |
| Distillation Range, 90% (°C)          | 507          |

## PROPERTIES vs TEMPERATURE

| Temp (°C) | Density (kg/m³) | Kinematic Viscosity (cSt) | Dynamic Viscosity (cP) | Thermal Conductivity (W/m·K) | Heat Capacity (kJ/kg·K) | Vapor Pressure (kPa) |
|-----------|-----------------|---------------------------|------------------------|------------------------------|-------------------------|----------------------|
| -5        | 882.63          | 683.16                    | 602.98                 | 0.146                        | 1.849                   | 0.00                 |
| 0         | 879.23          | 450.98                    | 396.52                 | 0.146                        | 1.866                   | 0.00                 |
| 5         | 875.83          | 307.70                    | 269.49                 | 0.145                        | 1.882                   | 0.00                 |
| 10        | 872.43          | 216.28                    | 188.69                 | 0.145                        | 1.899                   | 0.00                 |
| 15        | 869.03          | 156.16                    | 135.71                 | 0.145                        | 1.915                   | 0.00                 |
| 20        | 865.63          | 115.53                    | 100.01                 | 0.145                        | 1.932                   | 0.00                 |
| 25        | 862.23          | 87.38                     | 75.34                  | 0.144                        | 1.948                   | 0.00                 |
| 30        | 858.83          | 67.42                     | 57.90                  | 0.144                        | 1.965                   | 0.00                 |
| 35        | 855.43          | 52.97                     | 45.31                  | 0.144                        | 1.981                   | 0.00                 |
| 40        | 852.03          | 42.31                     | 36.05                  | 0.143                        | 1.998                   | 0.00                 |
| 45        | 848.63          | 34.31                     | 29.11                  | 0.143                        | 2.014                   | 0.00                 |
| 50        | 845.23          | 28.20                     | 23.84                  | 0.143                        | 2.031                   | 0.00                 |
| 55        | 841.84          | 23.47                     | 19.76                  | 0.142                        | 2.047                   | 0.00                 |
| 60        | 838.44          | 19.76                     | 16.57                  | 0.142                        | 2.064                   | 0.00                 |
| 65        | 835.04          | 16.81                     | 14.04                  | 0.142                        | 2.080                   | 0.00                 |
| 70        | 831.64          | 14.44                     | 12.01                  | 0.142                        | 2.097                   | 0.00                 |
| 75        | 828.24          | 12.51                     | 10.37                  | 0.141                        | 2.113                   | 0.00                 |
| 80        | 824.84          | 10.93                     | 9.02                   | 0.141                        | 2.130                   | 0.00                 |
| 85        | 821.44          | 9.62                      | 7.90                   | 0.141                        | 2.146                   | 0.00                 |
| 90        | 818.04          | 8.53                      | 6.97                   | 0.140                        | 2.163                   | 0.00                 |
| 95        | 814.64          | 7.60                      | 6.19                   | 0.140                        | 2.179                   | 0.00                 |
| 100       | 811.24          | 6.82                      | 5.53                   | 0.140                        | 2.196                   | 0.00                 |
| 105       | 807.84          | 6.15                      | 4.97                   | 0.140                        | 2.212                   | 0.00                 |
| 110       | 804.44          | 5.58                      | 4.48                   | 0.139                        | 2.229                   | 0.00                 |

**PROPERTIES vs TEMPERATURE (CONT.)**

| Temp (°C) | Density (kg/m³) | Kinematic Viscosity (cSt) | Dynamic Viscosity (cP) | Thermal Conductivity (W/m·K) | Heat Capacity (kJ/kg·K) | Vapor Pressure (kPa) |
|-----------|-----------------|---------------------------|------------------------|------------------------------|-------------------------|----------------------|
| 115       | 801.04          | 5.08                      | 4.07                   | 0.139                        | 2.245                   | 0.01                 |
| 120       | 797.64          | 4.64                      | 3.70                   | 0.139                        | 2.262                   | 0.01                 |
| 125       | 794.24          | 4.26                      | 3.39                   | 0.138                        | 2.278                   | 0.01                 |
| 130       | 790.84          | 3.93                      | 3.11                   | 0.138                        | 2.295                   | 0.01                 |
| 135       | 787.44          | 3.64                      | 2.86                   | 0.138                        | 2.311                   | 0.02                 |
| 140       | 784.04          | 3.38                      | 2.65                   | 0.137                        | 2.328                   | 0.03                 |
| 145       | 780.64          | 3.14                      | 2.45                   | 0.137                        | 2.344                   | 0.03                 |
| 150       | 777.24          | 2.93                      | 2.28                   | 0.137                        | 2.361                   | 0.04                 |
| 155       | 773.84          | 2.75                      | 2.13                   | 0.137                        | 2.377                   | 0.05                 |
| 160       | 770.44          | 2.58                      | 1.99                   | 0.136                        | 2.394                   | 0.06                 |
| 165       | 767.04          | 2.43                      | 1.86                   | 0.136                        | 2.410                   | 0.08                 |
| 170       | 763.64          | 2.29                      | 1.75                   | 0.136                        | 2.427                   | 0.10                 |
| 175       | 760.24          | 2.16                      | 1.65                   | 0.135                        | 2.443                   | 0.12                 |
| 180       | 756.85          | 2.05                      | 1.55                   | 0.135                        | 2.460                   | 0.15                 |
| 185       | 753.45          | 1.95                      | 1.47                   | 0.135                        | 2.476                   | 0.18                 |
| 190       | 750.05          | 1.85                      | 1.39                   | 0.135                        | 2.493                   | 0.22                 |
| 195       | 746.65          | 1.76                      | 1.32                   | 0.134                        | 2.509                   | 0.26                 |
| 200       | 743.25          | 1.68                      | 1.25                   | 0.134                        | 2.526                   | 0.32                 |
| 205       | 739.85          | 1.61                      | 1.19                   | 0.134                        | 2.542                   | 0.38                 |
| 210       | 736.45          | 1.54                      | 1.13                   | 0.133                        | 2.559                   | 0.46                 |
| 215       | 733.05          | 1.47                      | 1.08                   | 0.133                        | 2.575                   | 0.54                 |
| 220       | 729.65          | 1.42                      | 1.03                   | 0.133                        | 2.592                   | 0.66                 |
| 225       | 726.25          | 1.36                      | 0.99                   | 0.133                        | 2.608                   | 0.77                 |
| 230       | 722.85          | 1.31                      | 0.95                   | 0.132                        | 2.625                   | 0.91                 |
| 235       | 719.45          | 1.26                      | 0.91                   | 0.132                        | 2.641                   | 1.06                 |
| 240       | 716.05          | 1.22                      | 0.87                   | 0.132                        | 2.658                   | 1.26                 |
| 245       | 712.65          | 1.17                      | 0.84                   | 0.132                        | 2.674                   | 1.45                 |
| 250       | 709.25          | 1.14                      | 0.81                   | 0.131                        | 2.691                   | 1.70                 |
| 255       | 705.85          | 1.10                      | 0.78                   | 0.131                        | 2.707                   | 1.96                 |
| 260       | 702.45          | 1.06                      | 0.75                   | 0.131                        | 2.724                   | 2.28                 |
| 265       | 699.05          | 1.03                      | 0.72                   | 0.130                        | 2.740                   | 2.60                 |
| 270       | 695.65          | 1.00                      | 0.70                   | 0.130                        | 2.757                   | 3.02                 |
| 275       | 692.25          | 0.97                      | 0.67                   | 0.130                        | 2.773                   | 3.44                 |
| 280       | 688.85          | 0.95                      | 0.65                   | 0.130                        | 2.790                   | 3.97                 |
| 285       | 685.45          | 0.92                      | 0.63                   | 0.129                        | 2.806                   | 4.49                 |
| 290       | 682.05          | 0.90                      | 0.61                   | 0.129                        | 2.823                   | 5.16                 |
| 295       | 678.65          | 0.87                      | 0.59                   | 0.129                        | 2.839                   | 5.82                 |
| 300       | 675.25          | 0.85                      | 0.57                   | 0.128                        | 2.856                   | 6.65                 |
| 305       | 671.86          | 0.83                      | 0.56                   | 0.128                        | 2.872                   | 7.47                 |
| 310       | 668.46          | 0.81                      | 0.54                   | 0.128                        | 2.889                   | 8.49                 |
| 315       | 665.06          | 0.79                      | 0.53                   | 0.128                        | 2.905                   | 9.51                 |
| 320       | 661.66          | 0.78                      | 0.51                   | 0.127                        | 2.922                   | 10.75                |
| 325       | 658.26          | 0.76                      | 0.50                   | 0.127                        | 2.938                   | 12.00                |
| 330       | 654.86          | 0.74                      | 0.49                   | 0.127                        | 2.955                   | 13.51                |
| 332       | 653.39          | 0.74                      | 0.48                   | 0.126                        | 2.960                   | 14.07                |

**NOTE**

Values in this Technical Data Sheet are typical and do not constitute a specification. Manufacturing specifications are available on request. Routine fluid analysis is recommended to assess the in-service condition of the fluid. Specifications are subject to change due to formulation or raw-material updates; always verify that this TDS is the most current version.