



## Technical Data Sheet

### SYLTHERM™ XLT

#### Product Type

Silicone heat transfer fluid

#### Applications

- Single-fluid process heating and cooling systems in the pharmaceutical and fine chemical industries.

#### Recommended Use Temperature Range

-100°C (-150°F) to 260°C (500°F)

#### Description

SYLTHERM™ XLT heat transfer fluid is a specially formulated, high-performance silicone polymer designed for use as a low temperature, liquid-phase heat transfer medium. It offers outstanding low temperature heat transfer and pumpability, plus excellent thermal stability. SYLTHERM XLT fluid has essentially no odor, is low in acute oral toxicity, and is not listed as reportable under SARA Title III, section 313.<sup>††</sup>

<sup>††</sup>You may need to comply with similar or additional regulations in other countries.

#### Typical Properties<sup>†</sup>

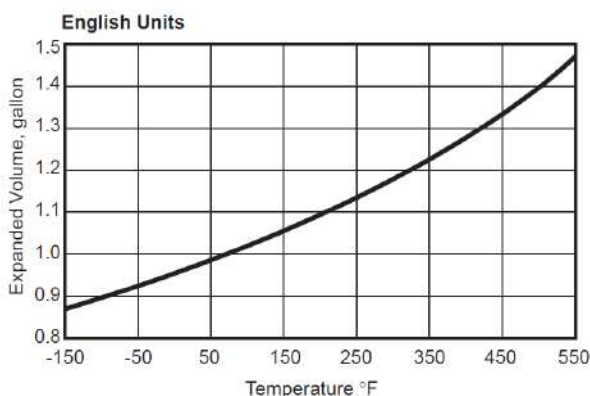
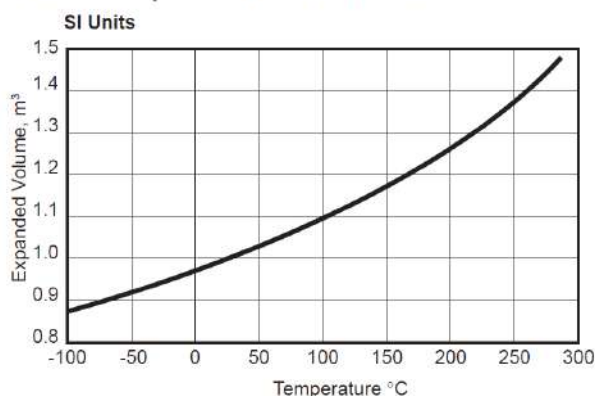
| Composition                           |                       |                             |
|---------------------------------------|-----------------------|-----------------------------|
| Dimethyl Polysiloxane                 |                       |                             |
| Color                                 | Crystal-clear liquid  |                             |
| Property                              | SI Units              | English Units               |
| Viscosity at 25°C (77°F)              | 1.4 mPa•s             | 1.4 cp                      |
| Flash Point <sup>2</sup> , Closed cup | 47°C                  | 116°F                       |
| Flash Point <sup>3</sup> , Open cup   | 54°C                  | 130°F                       |
| Autoignition Temp., ASTM D-2155       | 350°C                 | 662°F                       |
| Acid Number, Typical                  |                       | 0.01                        |
| Freeze Point                          | -111°C                | -168°F                      |
| Density at 25°C (77°F)                | 852 kg/m <sup>3</sup> | 7.1 lb./gal.                |
| Specific Gravity at 25°C (77°F)       |                       | 0.85                        |
| Heat of Combustion                    | 32,800 kJ/kg          | 14,100 Btu/lb.              |
| Average Molecular Weight              |                       | 317                         |
| Estimated Critical Temperature        | 327°C                 | 620°F                       |
| Estimated Critical Pressure           | 12.16 bar             | 12 atm                      |
| Estimated Critical Volume             | 3.9 l/kg              | 0.063 ft. <sup>3</sup> /lb. |

<sup>1</sup>Not to be construed as specifications.

<sup>2</sup>ASTM D92

<sup>3</sup>ASTM D93

## Thermal Expansion of SYLTHERM XLT Fluid



## Saturation Liquid Properties of SYLTHERM™ XLT Fluid (English Units)

| Temperature<br>°F | Specific Heat<br>Btu/(lb.)(°F) | Density<br>lb./ft. <sup>3</sup> | Thermal Conductivity<br>Btu/hr. ft. <sup>2</sup> (°F/ft.) | Viscosity<br>(cP) | Vapor Pressure<br>(psia) |
|-------------------|--------------------------------|---------------------------------|-----------------------------------------------------------|-------------------|--------------------------|
| -150              | 0.363                          | 61.23                           | 0.0776                                                    | 90.2              |                          |
| 0                 | 0.405                          | 55.88                           | 0.0686                                                    | 2.97              |                          |
| 150               | 0.446                          | 50.53                           | 0.0581                                                    | 0.74              | 0.3                      |
| 250               | 0.474                          | 46.96                           | 0.0505                                                    | 0.42              | 3.2                      |
| 350               | 0.502                          | 43.40                           | 0.0424                                                    | 0.28              | 15.2                     |
| 450               | 0.530                          | 39.83                           | 0.0339                                                    | 0.21              | 47.5                     |
| 550               | 0.558                          | 36.26                           | 0.0250                                                    | 0.16              | 113.6                    |

## Saturation Liquid Properties of SYLTHERM™ XLT Fluid (SI Units)

| Temperature<br>°C | Specific Heat<br>kJ/kg K | Density<br>kg/m <sup>3</sup> | Thermal Conductivity<br>W/m K | Viscosity<br>mPa·s | Vapor Pressure<br>kPa |
|-------------------|--------------------------|------------------------------|-------------------------------|--------------------|-----------------------|
| -100              | 1.520                    | 978.5                        | 0.1341                        | 78.6               |                       |
| -20               | 1.688                    | 896.4                        | 0.1192                        | 3.1                |                       |
| 60                | 1.826                    | 814.2                        | 0.1019                        | 0.80               | 1.8                   |
| 140               | 2.024                    | 732.0                        | 0.0827                        | 0.36               | 40.1                  |
| 220               | 2.192                    | 649.8                        | 0.0620                        | 0.22               | 261.9                 |
| 280               | 2.318                    | 588.2                        | 0.0455                        | 0.17               | 701.8                 |

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### Contact information:

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