SYLTERM HF
Silicone Heat Transfer Fluid

SYLTERM HF 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. With a closed cup flash point above 60°C (140°F), SYLTERM HF fluid provides an extra margin of safety and can reduce system and engineering costs. SYLTERM HF fluid has essentially no odor, is low in acute oral toxicity, and is not listed as reportable under SARA Title III, Section 313††.

**Recommended use temperature range:** -73°C (-100°F) to 260°C (500°F)

**Suitable applications:** Single fluid process heating and cooling systems. Sub zero applications including environmental chambers and grocery store freezer loops.

For health and safety information for this product, contact your Dow sales representative or call the number for your area on the second page of this sheet for a Material Safety Data Sheet (MSDS).

†† You may need to comply with similar or additional regulations in other countries.

### Typical Properties of SYLTERM HF Fluid

<table>
<thead>
<tr>
<th>Property</th>
<th>SI Units</th>
<th>English Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition:</td>
<td>Dimethyl Polysiloxane</td>
<td>Crystal Clear Liquid</td>
</tr>
<tr>
<td>Viscosity @ 25°C (77°F)</td>
<td>1.70mPa·s</td>
<td>1.70cp</td>
</tr>
<tr>
<td>Flash Point², Closed Cup, Typical</td>
<td>63°C</td>
<td>145°F</td>
</tr>
<tr>
<td>Flash Point³, Open Cup, Typical</td>
<td>76.7°C</td>
<td>170°F</td>
</tr>
<tr>
<td>Autoignition Point, ASTM D-2155</td>
<td>355°C</td>
<td>671°F</td>
</tr>
<tr>
<td>Freeze Point</td>
<td>&lt;-82°C</td>
<td>&lt;-115°F</td>
</tr>
<tr>
<td>Density @ 25°C (77°F)</td>
<td>864 kg/m³</td>
<td>7.2 lb/gal</td>
</tr>
<tr>
<td>Specific Gravity @ 25°C (77°F)</td>
<td>0.87</td>
<td>1.370</td>
</tr>
<tr>
<td>Heat of Combustion, Btu/lb</td>
<td>31,851 kJ/kg</td>
<td>13,670 Btu/lb</td>
</tr>
<tr>
<td>Average Molecular Weight</td>
<td>439</td>
<td>439</td>
</tr>
<tr>
<td>Estimated Critical Temperature</td>
<td>350°C</td>
<td>662°F</td>
</tr>
<tr>
<td>Estimated Critical Pressure</td>
<td>10.6 bar</td>
<td>10.5 atm</td>
</tr>
<tr>
<td>Estimated Critical Volume</td>
<td>3.62 l/kg</td>
<td>0.058 ft³/lb</td>
</tr>
</tbody>
</table>

¹ Not to be construed as specifications
² ASTM D92
³ ASTM D93

### Thermal Expansion of SYLTERM HF Fluid

![Graph showing thermal expansion](image)

† Trademark of Dow Corning Corporation
# Syltherm HF
Silicone Heat Transfer Fluid

## Saturated Liquid Properties of Syltherm HF Fluid (SI Units)

<table>
<thead>
<tr>
<th>Temperature °C</th>
<th>Specific Heat kJ/kg K</th>
<th>Density kg/m³</th>
<th>Therm. Conduc. W/m K</th>
<th>Viscosity mPa.s</th>
<th>Vapor Pressure bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>-73</td>
<td>1.453</td>
<td>965.78</td>
<td>0.1301</td>
<td>16.46</td>
<td>0.00</td>
</tr>
<tr>
<td>-70</td>
<td>1.460</td>
<td>962.75</td>
<td>0.1293</td>
<td>14.87</td>
<td>0.00</td>
</tr>
<tr>
<td>-20</td>
<td>1.583</td>
<td>912.20</td>
<td>0.1169</td>
<td>3.88</td>
<td>0.00</td>
</tr>
<tr>
<td>30</td>
<td>1.707</td>
<td>861.65</td>
<td>0.1045</td>
<td>1.58</td>
<td>0.00</td>
</tr>
<tr>
<td>80</td>
<td>1.830</td>
<td>811.10</td>
<td>0.0921</td>
<td>0.83</td>
<td>0.01</td>
</tr>
<tr>
<td>130</td>
<td>1.953</td>
<td>760.55</td>
<td>0.0797</td>
<td>0.51</td>
<td>0.11</td>
</tr>
<tr>
<td>180</td>
<td>2.076</td>
<td>710.00</td>
<td>0.0673</td>
<td>0.35</td>
<td>0.49</td>
</tr>
<tr>
<td>230</td>
<td>2.199</td>
<td>659.45</td>
<td>0.0549</td>
<td>0.26</td>
<td>1.55</td>
</tr>
<tr>
<td>260</td>
<td>2.273</td>
<td>629.12</td>
<td>0.0475</td>
<td>0.22</td>
<td>2.74</td>
</tr>
</tbody>
</table>

## Saturated Liquid Properties of Syltherm HF Fluid (English Units)

<table>
<thead>
<tr>
<th>Temperature °F</th>
<th>Specific Heat Btu/lb°F</th>
<th>Density lb/ft³</th>
<th>Therm. Conduc. Btu/hr ft²(°F/ft)</th>
<th>Viscosity cp</th>
<th>Vapor Pressure psia</th>
</tr>
</thead>
<tbody>
<tr>
<td>-100</td>
<td>0.347</td>
<td>60.31</td>
<td>0.0752</td>
<td>16.65</td>
<td>0.00</td>
</tr>
<tr>
<td>-40</td>
<td>0.367</td>
<td>58.21</td>
<td>0.0704</td>
<td>6.20</td>
<td>0.00</td>
</tr>
<tr>
<td>0</td>
<td>0.380</td>
<td>56.81</td>
<td>0.0672</td>
<td>3.70</td>
<td>0.00</td>
</tr>
<tr>
<td>60</td>
<td>0.399</td>
<td>54.70</td>
<td>0.0625</td>
<td>1.98</td>
<td>0.00</td>
</tr>
<tr>
<td>140</td>
<td>0.426</td>
<td>51.90</td>
<td>0.0561</td>
<td>1.05</td>
<td>0.07</td>
</tr>
<tr>
<td>220</td>
<td>0.452</td>
<td>49.09</td>
<td>0.0497</td>
<td>0.64</td>
<td>0.61</td>
</tr>
<tr>
<td>300</td>
<td>0.478</td>
<td>46.29</td>
<td>0.0433</td>
<td>0.44</td>
<td>2.93</td>
</tr>
<tr>
<td>380</td>
<td>0.504</td>
<td>43.48</td>
<td>0.0370</td>
<td>0.32</td>
<td>9.93</td>
</tr>
<tr>
<td>460</td>
<td>0.530</td>
<td>40.68</td>
<td>0.0306</td>
<td>0.25</td>
<td>26.24</td>
</tr>
<tr>
<td>500</td>
<td>0.543</td>
<td>39.28</td>
<td>0.0274</td>
<td>0.22</td>
<td>39.76</td>
</tr>
</tbody>
</table>

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**For further information, call...**

In the United States and Canada: 1-800-447-4369 • FAX: 1-989-832-1465
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www.dowtherm.com

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Published November 2001

**NOTE:** Syltherm heat transfer fluids are manufactured by Dow Corning Corporation and distributed by The Dow Chemical Company.