



SLFi Heat Transfer Fluids

SLFi heat transfer fluids are specifically formulated synthetic fluids that meet the demands of heat transfer processes for both food-grade and non-food-grade applications. The advanced additive package allows superior oxidative stability, excellent fluidity and increased heat transfer capabilities. This can lead to reduced fluid changes or top-offs, decreased deposit formation and increased system performance. SLFi's line of heat transfer fluids is designed for a wide range of applications, from temperatures as low as -120°F to as high as 650°F.

Superior Oxidative Stability

SLFi heat transfer fluids are formulated with an advanced antioxidant package that provides superior oxidative stability and fluid life. When used in high-temperature applications, SLFi heat transfer fluids have greater resistance to the destructive oxidation processes which can lead to carbon and varnish deposits. This is essential to applications that continuously see operating temperatures above 350°F. Excessive deposit formation in the heat transfer system can increase component wear, leading to premature failure. The high oxidative stability can also allow for longer fluid-change intervals, leading to reduced operating costs and required man hours. This makes SLFi heat transfer fluids ideal for processes prone to high oxidation, such as open baths.

Excellent Fluidity & Lubrication

With pour points as low as -130°F, SLFi heat transfer fluids offer superior fluidity at various process temperatures. This makes SLFi heat transfer fluids the ideal choice for cryogenic and low temperature applications. The increased fluidity lowers parasitic pumping losses, increasing system efficiency.

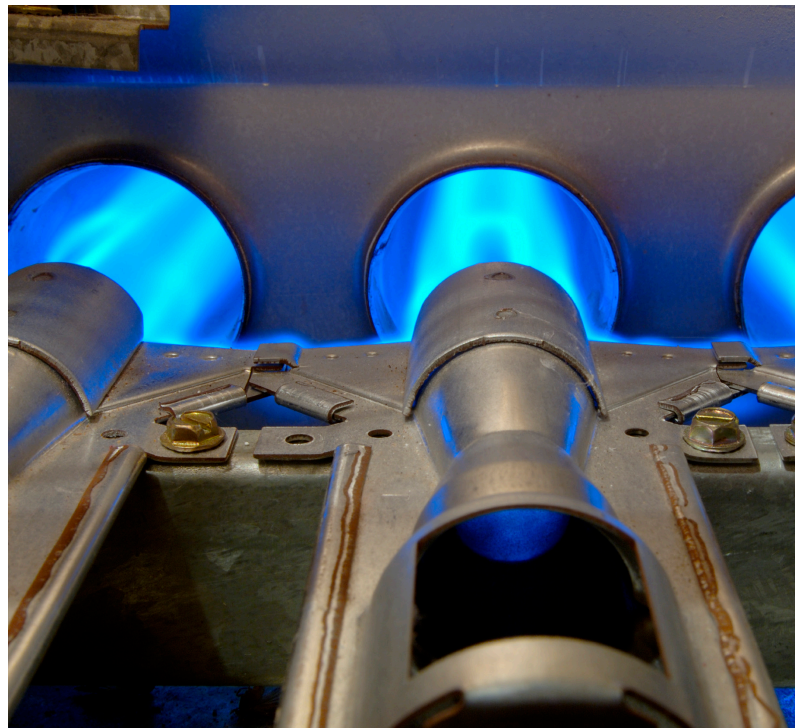
SLFi heat transfer fluids also provide excellent lubricity. The advanced additive package protects metal surfaces from corrosion while reducing friction between interacting components. According to an MIT study, 50 percent of machinery's loss of usefulness is due to mechanical wear and another 20 percent is the result of corrosion of machine parts.¹ Reduced wear on pump components can curtail power consumption and increase component lifespans.

Exceptional Heat Transfer Capability

SLFi heat transfer fluids are formulated to offer superior heat transfer capability at a wide temperature range. The excellent fluidity allows greater turbulence to be induced in the fluid flow, allowing improved heat transfer rates. The higher specific gravity of SLFi heat transfer fluids also helps to increase the heat capacitance. This allows the fluid to transport more heat energy without as high of a rise in bulk fluid temperature. The high flash point and low vapor pressure also ensure that SLFi heat transfer fluids can be utilized safely, even in the most demanding high-temperature applications, including bulk fluid temperatures up to 650°F.

Improved Flash Points

Due to various industry regulations, the bulk operating temperature of a heat transfer fluid is typically limited by the flash point of the fluid. Using high quality synthetic base stocks and advanced additive packages, SLFi heat transfer fluids have greatly improved flash points and reduced vapor pressures. This allows increased process temperatures while ensuring that plant safety is maintained. Decreased fluid volatility also leads to reduced vapor pressures.





SLFi Heat Transfer Fluids

Broad Fluid & Seal Compatibility

With the wide range of fluids and seals used in the industry, compatibility is important to lowering costs while helping ensure carefree fluid transitions. SLFi heat transfer fluids are top-off compatible with almost all fluids on the market. Please contact SLFi to determine which heat transfer fluid is compatible with your current fluid.

The advanced formulation of SLFi heat transfer fluids also offers a wide seal compatibility range. The table below lists commonly used seal materials that are compatible with various SLFi heat transfer fluids.

- | | |
|---------------------------------|----------------------------|
| • Viton® | • Neoprene |
| • Buna N (except high ACN) | • Telfon® |
| • Silicone | • Polyurethane Ester |
| • Epichlorohydrin | • Polysulfide |
| • Ethlene/Acrylic | • Polycrylate |
| • Fluorosilicone | • Propylene Oxide |
| • Chlorosulfonated Polyethylene | • Chlorinated polyethylene |
| • Kalrez® | • Nordel™ |
| • Fluoroelastomer | • Nitrile |

SLFi can confirm compatibility of seal materials with the heat transfer fluid being utilized in the system.

Increased Safety

SLFi barrier fluids are composed of non-toxic and non-hazardous materials. This negates any need for special storage or handling protocols. The fire-resistant formulations also increase plant safety in the event of a leak or fire.

Food Grade Approval

SLFi heat transfer fluids are available in formulations that meet the requirements of USDA regulations for H-1 and H-2 food grade applications. They meet the requirements of the FDA's CFR Title 21 sections:

- | | |
|-----------------------|-----------|
| • 178.3620(a) and (b) | • 175.105 |
| • 172.878 | • 176.200 |

They also conform to ISO 21469 specifications and meet the requirements described under section 210:

- 177.2260 and 2800
- 178.3570 and 3910

Easy Disposal

While some synthetic fluids require specialized disposal processes, SLFi heat transfer fluids do not. They can be disposed of in the same manner as typical mineral oils. This allows SLFi heat transfer fluids to be recycled or burned in heaters to reduce their environmental impact.

Silicone based fluids must still be treated with care and properly disposed of.

Made in the USA

All of SLFi's products are proudly manufactured in the United States of America at our Jacksonville, Florida, production facility.

Advanced Applications

Certain applications may require special needs regarding reactivity, solubility, and so forth. SLFi can develop custom barrier fluids for your unique applications. Please contact our technical services department for more information at 855-215-2740.

¹Rabinowicz, E.E. *Friction and Wear of Materials*, 2nd edition. John Wiley & Sons, New York, 1995.



SLFi Heat Transfer Fluids

SLFi SL-HTF Synthetic Heat Transfer Fluid

Lubrication Properties	ASTM Method	HTF-46	HTF-68	HTF-100
Specific Gravity @ 15°C	D-1298	0.853	0.865	0.865
Viscosity @ 40°C (cSt)	D-445	43	68	100
Viscosity @ 100°C (cSt)	D-445	7.6	8.9	11.5
Flash Point (°C)	D-92	234	243	266
Fire Point (°C)	D-92	266	278	298
Copper Corrosion	D-130	1a	1a	1a
Distillation Range, 10% (°C)	D-2887	409	410	410
Distillation Range, 90% (°C)	D-2887	510	512	520
Color	D-1500	<0.5	<0.5	<0.5

SLFi 2399 Food Grade High-Temperature Heat Transfer Fluid

Lubrication Properties	ASTM Method	2096-46
Viscosity @ 40°C (cSt)	D-445	42.4
Viscosity @ 100°C (cSt)	D-445	6.6
Flash Point (°C)	D-92	227
Auto-Ignition Point (°C)	D-92	365
Pour Point (°C)	D-97	-10
Copper Corrosion, 24 Hr	D-130	1a
Distillation Range, 10% (°C)	D-2287	403
Distillation Range, 90% (°C)	D-2287	499



SLFi Heat Transfer Fluids

SLFi 2098 Multi-Temperature Heat Transfer Fluid

Lubrication Properties	ASTM Method	2098
Viscosity @ 40°C (cSt)	D-445	7.0
Viscosity @ 100°C (cSt)	D-445	2.2
Flash Point (°F)	D-92	350
Auto-Ignition Point (°F)	D-92	620
Pour Point (°F)	D-97	-72
Copper Corrosion, 24 Hr	D-130	1a
Distillation Range, 10% (°F)	D-2287	610
Distillation Range, 90% (°F)	D-2287	738

SLFi 2099 Ultra High-Temperature Heat Transfer Fluid

Lubrication Properties	ASTM Method	2099
Viscosity @ 40°C (cSt)	D-445	42
Viscosity @ 100°C (cSt)	D-445	6.8
Flash Point (°F)	D-92	442
Auto-Ignition Point (°F)	D-92	690
Pour Point (°F)	D-97	-1
Copper Corrosion, 24 Hr	D-130	1a
Distillation Range, 10% (°F)	D-2287	734
Distillation Range, 90% (°F)	D-2287	928



SLFi Heat Transfer Fluids

SLFi 2097 Glycol Based Heat Transfer Fluid

Lubrication Properties	ASTM Method	2098
Viscosity @ 40°C (cSt)	D-445	49.2
Viscosity @ 100°C (cSt)	D-445	9.2
Flash Point (°F)	D-92	515
Auto-Ignition Point (°F)	D-92	620
Pour Point (°F)	D-97	-40
Copper Corrosion, 24 Hr	D-130	1a
Distillation Range, 10% (°F)	D-2287	700
Distillation Range, 90% (°F)	D-2287	962

SLFi 6096 Silicone Heat Transfer Fluid

Lubrication Properties	ASTM Method	2099
Viscosity @ 40°C (cSt)	D-445	39.21
Viscosity @ 100°C (cSt)	D-445	16.25
Flash Point (°F)	D-92	575
Auto-Ignition Point (°F)	D-92	805
Pour Point (°F)	D-97	-67
Copper Corrosion, 24 Hr	D-130	1a
Four Ball Weld Point, Kg	D-2596	126
Demulsibility, 130°F, 30 Min	D-2711	40/40/0