

THERMINOL[®] FR LO-TEMP FIRE RESISTANT HEAT TRANSFER FLUID

... the fire-resistant, low-temperature
liquid phase heat transfer fluid with
very low temperature pumpability.

TECHNICAL BULLETIN (T-LT)

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Organic Division/800 N. Lindbergh Blvd./St. Louis, Missouri 63186

FUNCTIONAL
FLUIDS

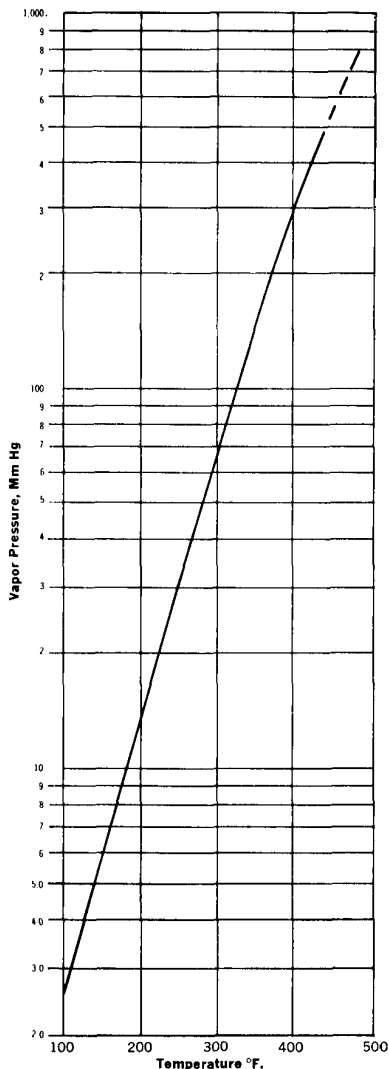


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THERMINOL® FR Lo-Temp
Vapor Pressure



Introducing Therminol® FR Lo-Temp

Therminol FR Lo-Temp is our newest fire-resistant heat transfer fluid formulated specifically for practical pumpability at -40°F .

This low-temperature fluid permits installation of a non-pressurized system operating with a liquid which has no fire point and will not support combustion.

The recommended operating range of Therminol FR Lo-Temp is -40°F to 400°F . It will not show measurable change after years of exposure at such temperatures.

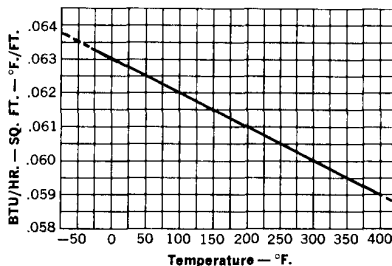
The fluid is a chemically inert, noncorrosive compound with a pour point of -60°F and a vapor pressure of only 300 mm of mercury at 400°F .

Listed as a fire resistant heat transfer media by Underwriters Laboratories, it can be installed for a wide range of uses in both space heating and cooling, gas processing and distribution, and industrial heating and cooling under conditions of low ambient temperatures.

TYPICAL PROPERTIES

Composition	Chlorinated biphenyls and hydrocarbons
Appearance	Oily, clear, nearly colorless liquid
Pour Point	-60°F .
Flash Point	280°F .
Flame Point	None to boiling
Autoignition Temperature	Over 1100°F .
Boiling Range	432°F . — 627°F .

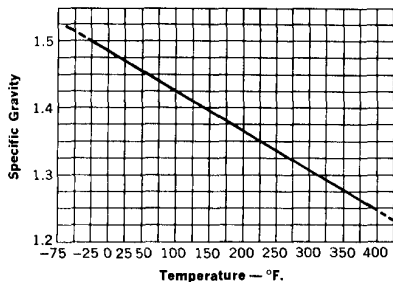
THERMINOL® FR Lo-Temp
Thermal Conductivity



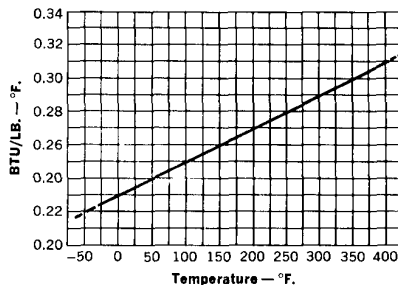
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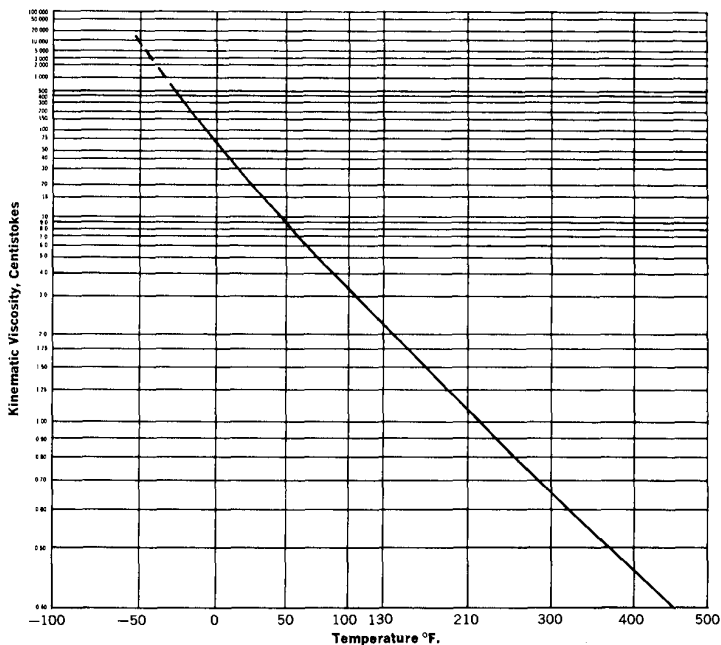
THERMINOL® FR Lo-Temp
Specific Gravity



THERMINOL® FR Lo-Temp
Specific Heat



THERMINOL® FR Lo-Temp
Viscosity



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You can choose from seven **Therminol®** fluids with a combined operating range from -40°F. to more than 700°F. No pressurization needed!



All Therminol fluids work without pressure over the entire operating range. You save on construction, expensive monitoring and safety devices needed in high-pressure systems. With Therminol, you're assured of uniform, safe and economical flows to single or multi-users.

You can get two big jobs done at once by delivering high heat for processing or

moderate heat for space heating lines.

Because these fluids are noncorrosive, nonvolatile, thermally stable and chemically inert, properly maintained equipment can operate for years with no make-up.

Therminol fire resistant (FR) fluids are the only heat transfer fluids listed by Underwriters' Laboratories and recognized by the FIA and FMA.

Call on our engineers for prompt, complete advice and technical support. If you have a heat transfer problem, ask the reader service card for more information. *Detach this chart and keep it as a permanent reference.*

(See our exhibit 4336 at the 1974 position of Chemical Industries Exposition Coliseum, November 27-December 1, 1974.)

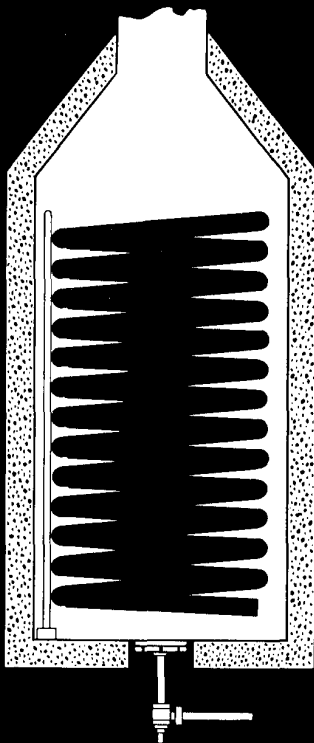
Fluid	Recommended Use Range									Pour Point	Vapor Pressure at Max. Recom. Temp.	Fire Resistance U.L. Listed
	-80	100	200	300	400	500	600	700				
Therminol® FR Lo-Temp										-60°F	300 mm Hg	yes
Therminol FR-0										-15°F	315 mm Hg	yes
Therminol FR-1										2°F	550 mm Hg	yes
Therminol FR-2										19°F	340 mm Hg	yes
Therminol FR-3										50°F	225 mm Hg	yes
Therminol 66										-15° to -18°F	525 mm Hg	no—C.O.C. flash point 350°F
Therminol 77										45°F	168 mm Hg	no—C.O.C. flash point 460°F

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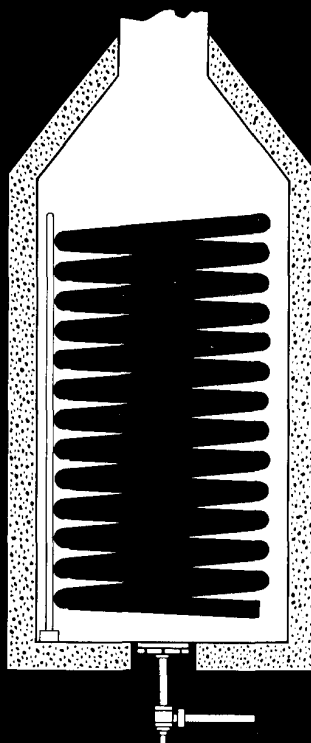
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Introducing two new heat transfer fluids from Monsanto:

Therminol® 66



Therminol FR Lo-Temp



Now you get even greater high and low range capabilities!

Therminol FR Lo-Temp. Our newest fire resistant fluid. Gives you a low-cost, liquid phase indirect heat transfer system with extremely good low-temperature pumpability and sub-zero mobility to -40°F. Yet it can be operated up to 400°F, is ideal for space heating and cooling.

Therminol 66. Our most versatile and efficient fluid

meets your needs for higher processing temperatures at low cost. Operating between 15°F and 650°F without pressure, its heat transfer properties are 10% better than other fluids in this range. Its -15°F to -18°F pour point permits start-up at fluid temperatures as low as 15°F.

For properties of all seven Therminol fluids, turn the page.



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