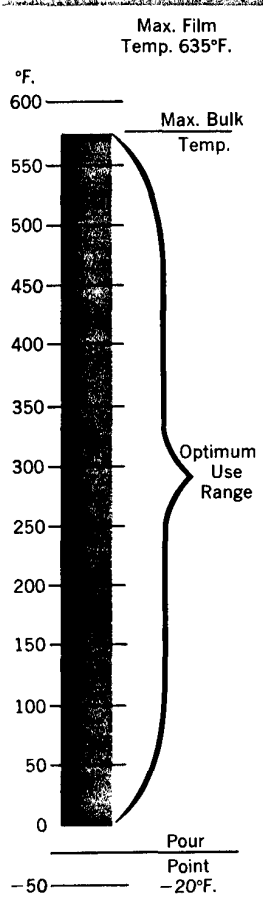
Therminol 55 IC/FF-55



. . . low-cost liquid phase heat transfer fluid for non-pressurized indirect heating to 600°F.

Heat transfer fluids are intended only for *indirect* heating purposes. Under no circumstances should this product contact or in any way contaminate food, animal feed, food products, food packaging materials, pharmaceuticals or *any items which may directly or indirectly be ultimately ingested by humans*. Any contact may contaminate these items to the extent that their destruction may be required. Precautions against ignitions and fires should be taken with this product.

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FUNCTIONAL PRODUCTS / Monsanto Industrial Chemicals Co.
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Therminol 55 ...

is a low-cost synthetic heat transfer fluid offering low-temperature pumpability (0°F.) as well as excellent high temperature (575°F.) performance. Therminol 55 is not classified as a fire-resistant heat transfer fluid. Consequently, the use of protective devices may be required to minimize fire risk. The insurer of your property should be consulted relative to this matter.

This fluid is designed for use in non-pressurized indirect heating systems. It delivers efficient, dependable process heat with no need for high pressures, costly "extra" equipment, or continuous supervision.

Therminol 55 systems should be blanketed with an inert atmosphere to minimize fluid oxidation. This fluid offers excellent thermal stability and long service life, along with its wide operating temperature range.

Typical Properties

Composition	Synthetic Hydrocarbon Mixture
Appearance	Clear brown liquid
Odor	Slight, characteristic
Pour Point	—40°F.
Density @ 75°F.	7.40 lbs./gal.
Flash Point	355°F. min.
Fire Point	410°F.
AIT	675°F.
Coefficient of Expansion	0.00085 cc/cc/°C.
Boiling Range:	
10%	635°F.
90%	734°F.
Average Molecular Weight	340

Variations of Properties With Temperature

Temperature		Density			Specific Heat		Thermal Conductivity		Viscosity		Vapor Pressure	
°F	°C	lbs./gal.	lb./ft.³	Kg./m.³	BTU/lb. °F	Kcal./Kg. °C	BTU/ft. hr. °F	Kcal./m. hr. °C	lb./hr. ft.	cs	mmHg. absolute	Kg./cm.²
0	—18	7.62	57.1	915	0.420	0.420	0.0813	0.1210	3561	1610	—	—
100	38	7.31	54.8	878	0.472	0.472	0.0784	0.1167	61.5	30.1	0.5	0.001
200	93	7.00	52.4	840	0.522	0.522	0.0753	0.1121	10.3	5.0	3.0	0.004
300	149	6.69	50.1	803	0.572	0.572	0.0724	0.1077	4.09	2.10	10	0.014
400	204	6.39	47.8	766	0.620	0.620	0.0692	0.1030	2.18	1.18	40	0.054
500	260	6.07	45.5	729	0.670	0.670	0.0661	0.0984	1.41	0.80	100	0.136
600	316	5.76	43.1	691	0.718	0.718	0.0630	0.0938	1.01	0.60	250	0.330

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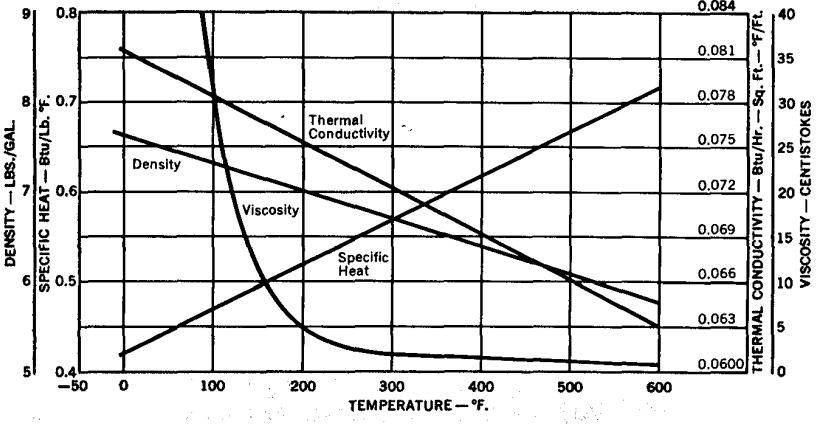
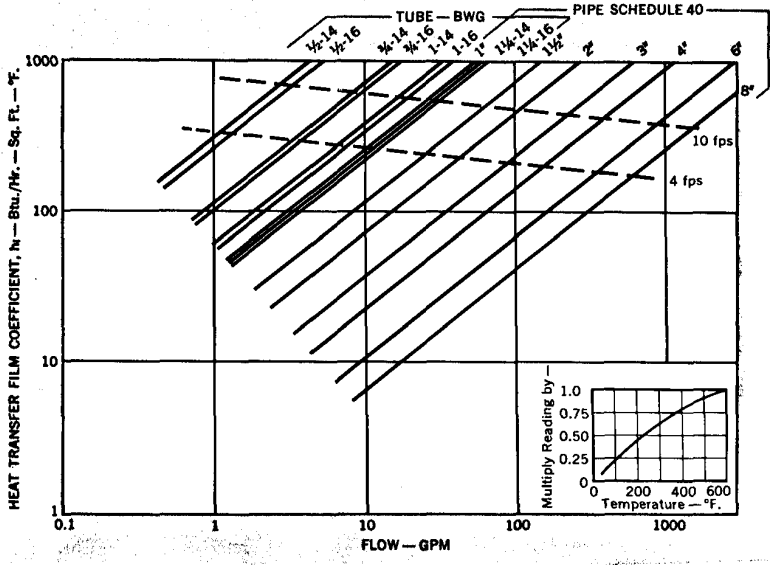
Therminol 55—Physical Properties



Therminol 55—Heat Transfer Coefficients



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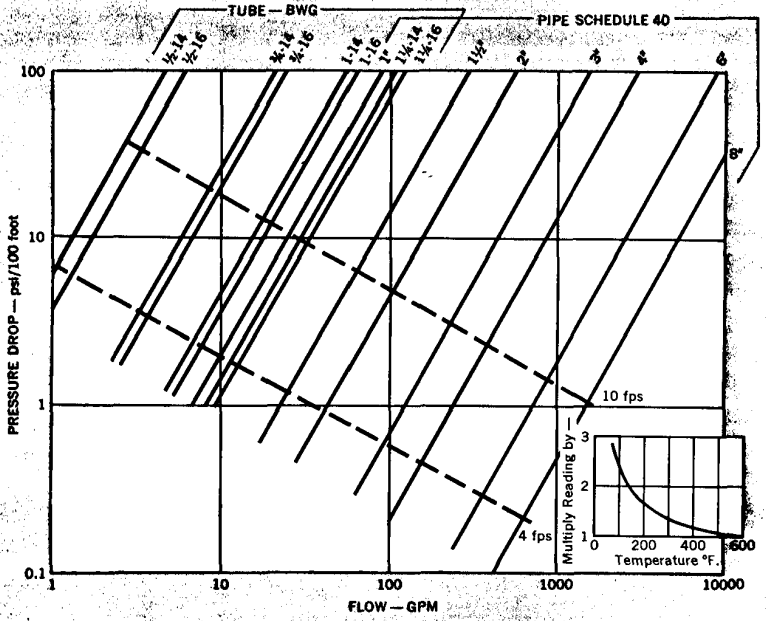
Therminol 55—Pressure Drop



Therminol 55—Safety of Handling

Therminol 55 is virtually non-toxic and non-irritating, posing no special handling problems. It is not absorbed through the unbroken skin in significant quantities, is non-irritating to the skin and only mildly irritating if eye contact occurs. Immediate flushing of the eye with copious amounts of water will avoid irritation or after-effects. It is suggested that Therminol 55 be washed off the skin with soap and water as soon as possible after contact, but no serious irritation should be observed. Handled like any other industrial chemical, Therminol 55 is quite safe to store and use.

Therminol 55 vapors are not toxic, but may cause discomfort if coming off of heated fluid. There is no vapor exposure problem when transferring the fluid from its shipping container to the heat transfer system. On the other hand, vapors emitted by Therminol 55 heated to elevated temperatures may be mildly irritating upon prolonged exposure. In heat transfer installations, the fluid is used in a closed, unpressurized system free from leaks and with the expansion tank vent trapped so as to condense any vapors. Consequently, there should be little or no opportunity for workers to come in contact with vapors.

While Therminol 55 poses no serious problems with respect to the environment, as a concerned supplier to industry, Monsanto urges the user to maintain a tight system, to correct leakage promptly, and to exercise care in the handling and disposal of this and all other such products. A tight maintenance program not only protects the environment, but keeps employes comfortable, the working area clean, and the system running smoothly.

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