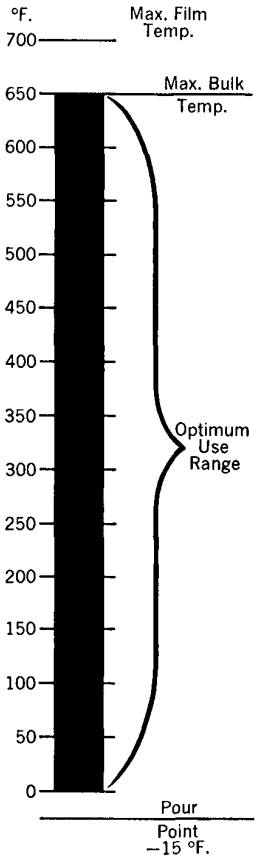
Therminol 66

IC/FF-66



. . . wide-range liquid phase heat transfer fluid for non-pressurized indirect heating to 650°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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"Nothing contained herein is to be construed as a recommendation to use any product in conflict with any patent. MONSANTO MAKES NO WARRANTIES AS TO THE FITNESS OR MERCHANTABILITY OF ANY PRODUCT REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations, and disclaims all liability for any resulting loss or damage."

FUNCTIONAL PRODUCTS / Monsanto Industrial Chemicals Co.
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Therminol 66 . . .

is a high-performance synthetic heat transfer fluid offering low-temperature pumpability (0°F.) along with outstanding high-temperature performance — up to 650°F. Therminol 66 is ideally suited to replace organic fluids which have lower boiling points and must operate under pressure at 650°F.

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 66 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.

To minimize fluid oxidation, Therminol 66 systems should be blanketed with an inert atmosphere. A system relief valve should also be provided.

Therminol 66 offers long service life within its recommended operating temperature range, and is non-corrosive to metals commonly used in the design of heat transfer systems.

Typical Properties

Composition	Modified Terphenyl
Appearance	Oily liquid, practically colorless
Odor	Faint, characteristic
Pour Point	—18°F.
Density @ 75°F.	8.35 lbs./gal.
Flash Point	355°F.
Fire Point	382°F.
AIT	705°F.
Coefficient of Expansion	0.00070 cc/cc/°C.
Boiling Range:	
10%	644°F.
90%	745°F.
Average Molecular Weight	240

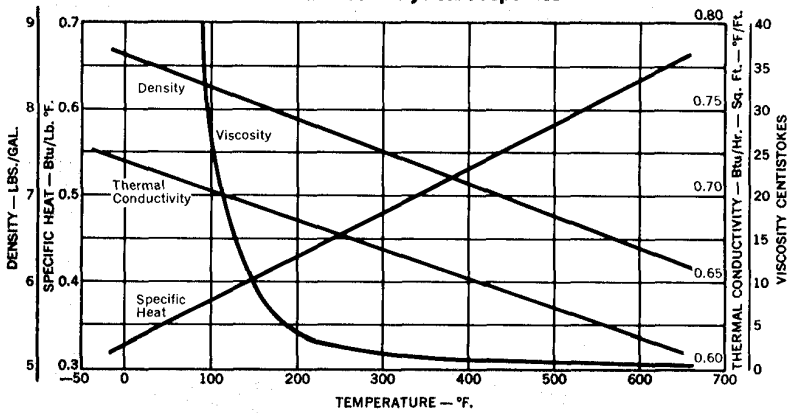
Variations of Properties With Temperature

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.³
0	—18	8.67	64.9	1040	0.320	0.320	0.0720	0.1072	150000	50000		
50	10	8.51	63.6	1020	0.350	0.350	0.0711	0.1058	617	250		
100	38	8.34	62.4	1000	0.380	0.380	0.0703	0.1046	67.8	28.0		
150	66	8.14	60.9	975	0.405	0.405	0.0695	0.1034	23.6	10.0		
200	93	7.91	59.3	950	0.430	0.430	0.0687	0.1022	10.1	4.40	0.1	—
250	121	7.77	58.0	930	0.455	0.455	0.0678	0.1008	5.86	2.60	—	—
300	149	7.59	56.8	910	0.480	0.480	0.0670	0.0997	3.75	1.70	2.0	0.003
350	177	7.39	55.2	885	0.505	0.505	0.0662	0.0985	2.57	1.20	—	—
400	204	7.17	53.6	860	0.530	0.530	0.0653	0.0972	1.88	0.90	20.0	0.027
450	232	7.04	52.5	840	0.555	0.555	0.0645	0.0959	1.40	0.69	50.0	0.068
500	260	6.75	50.5	810	0.580	0.580	0.0637	0.0948	1.08	0.55	100.0	0.136
550	288	6.62	49.5	793	0.605	0.605	0.0628	0.0935	0.87	0.46	200.0	0.272
600	316	6.42	48.1	770	0.630	0.630	0.0620	0.0923	0.82	0.44	350.0	0.476
650	343	6.24	46.8	750	0.655	0.655	0.0613	0.0912	0.65	0.36	760.0	1.034
700	371	6.09	45.6	730	0.680	0.680	0.0605	0.0900	0.49	0.28	1000	1.360

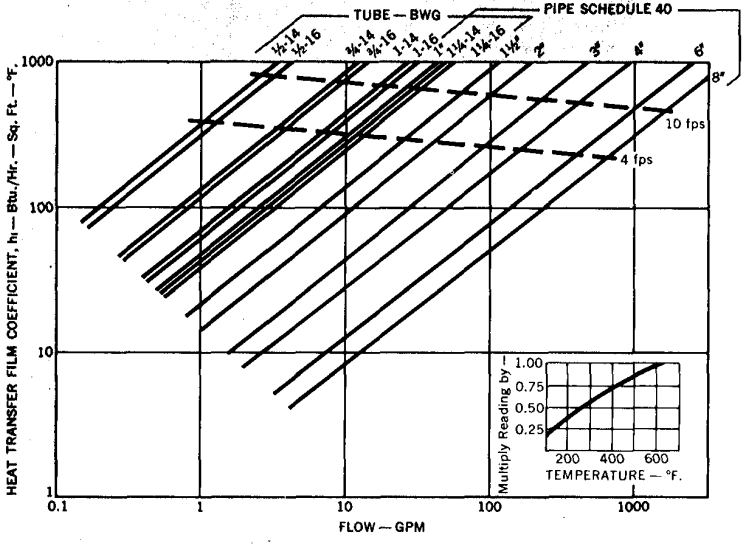
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Therminol 66 – Physical Properties



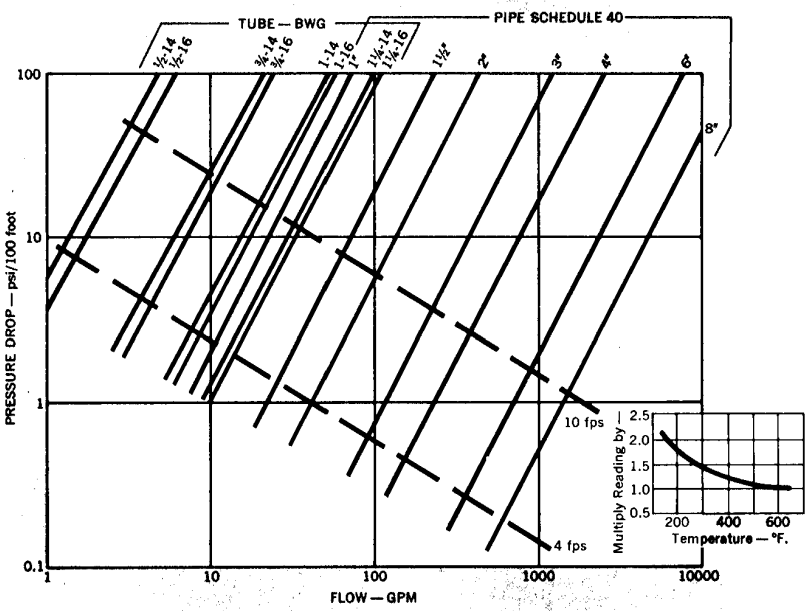
Therminol 66 – Heat Transfer Coefficients



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Therminol 66 – Pressure Drop



Therminol 66 – Safety of Handling

Therminol 66 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 66 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 66 is quite safe to store and use.

Therminol 66 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 66 heated to elevated temperatures may be mildly irritating upon prolonged exposure. In heat transfer installations, the fluid is used in a closed, non-pressurized 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 66 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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