THERMINOL® 55 HEAT TRANSFER FLUID

A low cost synthetic fluid for use in liquid phase up to 600 °F. without system pressurization.

TECHNICAL BULLETIN T-55

ALKYL BENZENE



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Monsanto

FUNCTIONAL FLUIDS | Monsanto Company, 800 North Lindbergh Blvd., St. Louis, Missouri 63166

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Therminol® 55 is a low-cost synthetic heat transfer fluid developed for use in non-pressurized, indirect heating systems. Added to the extensive Monsanto line of heat transfer fluids to meet exacting needs, Therminol 55 demonstrates thermal stability superior to that of hydrocarbon oils of comparative cost.

System start-up at temperatures as low as 0°F. is possible, due to the low temperature viscosity characteristics of Therminol 55. It can be used at temperatures up to 600°F. At 550°F. and below, the fluid has extremely long life.

Therminol 55 systems should be blanketed with an inert atmosphere to minimize fluid oxidation. A system relief valve should also be provided.

Unlike the Therminol FR (fire-resistant) fluids, Therminol 55 can support combustion.

For detailed system information, contact your local Monsanto sales office, or write to: Monsanto Company, Functional Fluids, 800 N. Lindbergh Blvd., St. Louis, Mo. 63166.

TYPICAL PROPERTIES OF THERMINOL® 55

Composition	Alkylated Aromatics
Appearance	Clear Brown Liquid
Odor	Odorless
Pour Point	—20°F.
Flash Point	355°F.
Flame Point	410°F.
Autoignition Temperature	670°F.
Refractive Index	n_{25}^{D} 1.5035
API Gravity 60 60	26.6
Specific Gravity g cc	0.895
Lb./gallon	7.5
Average Molecular Weight	340

FLUID PROPERTIES OF THERMINOL 55

Temp. °F.	Density gm cc	Kinematic Viscosity cs	Specific Heat BTU Lb.-°F.	Thermal Conductivity BTU hr.-ft.-°F.	Vapor Pressure mm Hg
0	0.9148	1610.0	0.420*	0.0813*	—
100	0.8775	30.1	0.472	0.0784	0.5*
200	0.8403	5.0	0.522	0.0753	3.0
300	0.8031	2.10*	0.572	0.0724	10
400	0.7658	1.18	0.620	0.0692	40
500	0.7286*	0.80*	0.670	0.0661*	100*
600	0.6913*	0.60*	0.718*	0.0630*	250*

*Extrapolated Data

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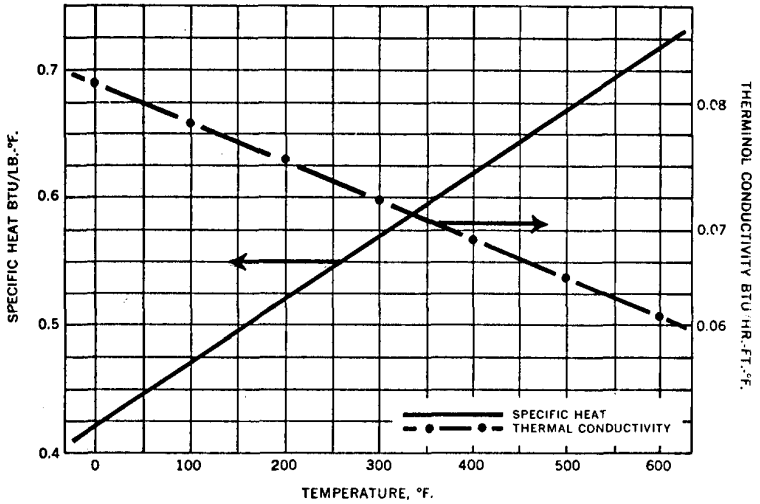
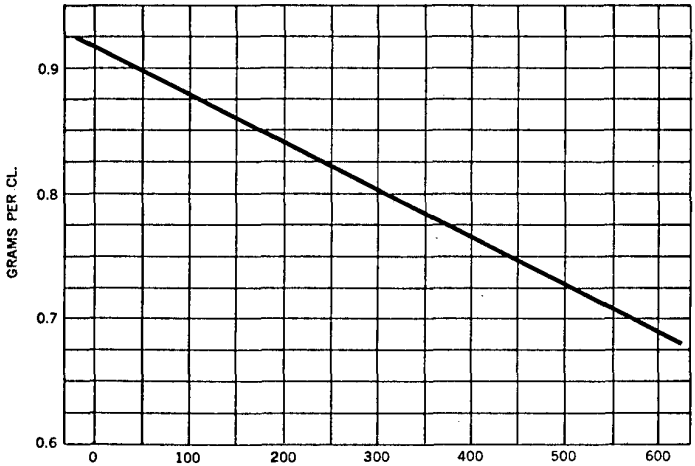
SPECIFIC HEAT AND THERMAL CONDUCTIVITY



SPECIFIC GRAVITY



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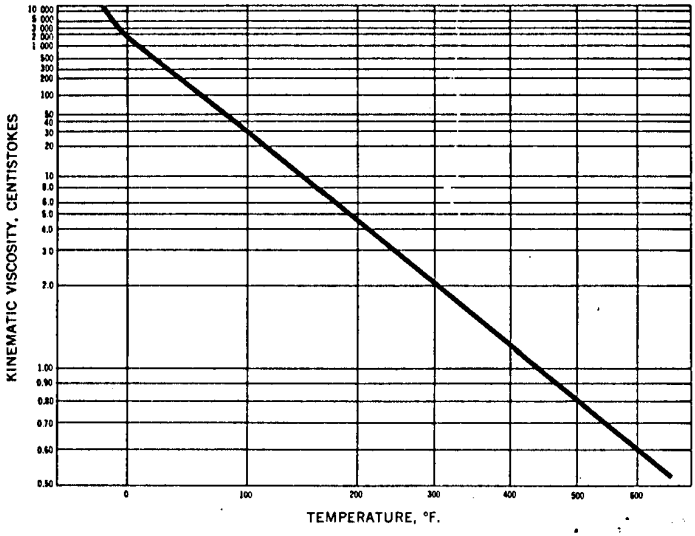
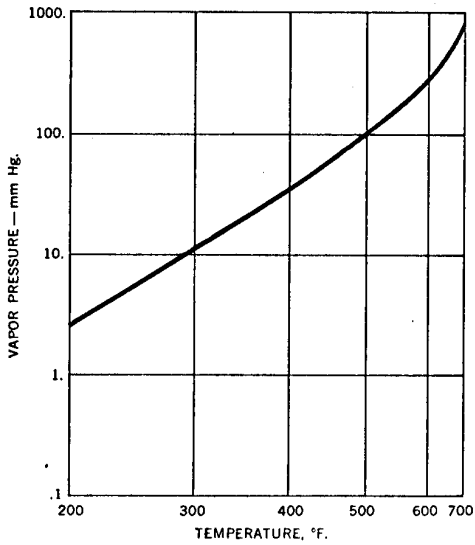
KINEMATIC VISCOSITY



VAPOR PRESSURE



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VARIATIONS OF PROPERTIES WITH TEMPERATURE

Temperature		Density		Specific Heat		Thermal Conductivity		Viscosity		Vapor Pressure	
°F	°C	lb/gal	Kg/m^3	BTU/lb °F	Kcal/Kg °C	BTU/ft hr °F	Kcal/m hr °C	Cp	Cs	mmHg absolute	Kg/cm^2
0	-18	7.62	915	0.420	0.420	0.0813	0.1210	1472	1610	-	-
100	38	7.31	878	0.472	0.472	0.0784	0.1167	25.4	30.1	0.5	0.001
200	93	7.00	840	0.522	0.522	0.0753	0.1121	4.20	5.0	3.0	0.004
300	149	6.69	803	0.572	0.572	0.0724	0.1077	1.69	2.10	10	0.014
400	204	6.39	766	0.620	0.620	0.0692	0.1030	0.904	1.18	40	0.054
500	260	6.07	729	0.670	0.670	0.0661	0.0984	0.583	0.80	100	0.136
600	316	5.76	691	0.718	0.718	0.0630	0.0938	0.415	0.60	250	0.330

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THERMINOL 55

TYPICAL PHYSICAL, CHEMICAL AND THERMAL PROPERTIES

Composition	Alkylated aromatic
Appearance	Clear, brown liquid
Odor	Odorless
Coefficient of Expansion cc/cc/°C cc/cc/°F	 0.00085 0.00047
Density at 25°C(77°F) kg/m^3 lb/gal	 885 7.4
Boiling Range °C °F	 335 - 390 635 - 734
Pour Point °C °F	 -40 -40
Flash Point, Pensky-Marten (ASTM-D93-46) °C °F	 180 355
Fire Point (Pensky-Marten) °C °F	 210 410
Autoignition Temperature °C °F	 354 670
Viscosity (cs) 100°F	 30.1

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