

RENOLIN THERM

Heat Transfer oil

Description

RENOLIN THERM oils are paraffinic heat transfer fluids for use in closed un-pressurized heat transfer systems operating at bulk oil temperatures up to 315 °C (ISO 22 to 150). For ISO 5 & 10 the maximum bulk operating temperature is 200 °C. They provide excellent resistance to thermal cracking and chemical oxidation and are non-toxic, have a very low odour level and have no detrimental effect on select seals. They provide high specific heat and thermal conductivity at all temperatures and therefore give rapid heating and efficient operation of the heat transfer system.

Application

RENOLIN THERM grades have high specific heat and thermal conductivity at all temperatures and, therefore, will give rapid heating and flexibility in a system. The characteristics of these products make them ideal where high heat transfer rates combined with high flow rates are desired. RENOLIN THERM 22 is especially suited for

systems where heating and cooling cycles are required since it functions effectively at both high and low temperatures and repeated thermal cycles.

The application limits of heat transfer oils depend first on circulating speed, and second on temperature in closed circuit systems. In general, the minimum velocities vs. temperatures are as follows:

- Velocity of 1.5 m/s (5 ft/s) for operating temperatures below 200 °C (400 °F).
- Velocity of 2.0 m/s (10 ft/s) for operating temperatures between 200 and 260 °C (400 and 500 °F).
- Velocity of 3.0 m/s (10 ft/s) for operating temperatures between 260 and 300 °C (400 and 575 °F).
- Velocity of 3.5 m/s (12 ft/s) for operating temperatures above 300 °C (575 °F).

CHARACTERISTICS

Properties	Unit	Value								Test Method
ISO Viscosity Grade		5	10	22	32	46	68	100	150	
Viscosity @ 40 °C	mm ² /s	4.7	9.5	21.45	32	46.5	69	100	150	ASTM D 445
@ 100 °C	mm ² /s	1.7	2.6	4.23	5.4	6.8	8.7	11.21	15	ASTM D 445
Viscosity Index	-	-	105	100	102	100	97	97	100	ASTM D 2270
Density @ 15 °C	kg/m ³	839	849	866	873	878	880	887	890	ASTM D 4052
Flash Point	°C	140	198	206	222	234	246	250	254	ASTM D 92
Pour Point	°C	-9	-9	-9	-9	-6	-6	-6	-6	ASTM D 97
Neutralization Number	mgKOH/g	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	ASTM D 664
Thermal Expansion Coefficient, 0-300 °C	1/K	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-
		877	877	813	788	779	771	763	758	
Thermal Conductivity @ 38 °C	W/m/K	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	-
Specific Heat @ 25 °C	J/Kg/K	1990	1950	1930	1910	1910	1900	1900	1890	-

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