

Introduction

Rodutherm 59 is a high performance heat transfer oil specially developed for closed liquid phase systems operating across an exceptionally wide temperature range. Designed for use in liquid heat transfer systems from -49°C to 330°C, it offers outstanding versatility for applications requiring both low-temperature pumpability and high-temperature stability within a single fluid.

Its strict thermal stability test proves that Rodutherm 59 can be applied to long-term stable operation across the full range of -49°C to 330°C, eliminating the need for separate heating and cooling fluids in dual-temperature systems.

Rodutherm 59 demonstrates superior thermal stability and antioxidant properties compared to other competitive brands, resulting in significantly extended fluid life and reduced operating costs. Its advanced formulation minimises oxidation and carbon deposit formation, helping to maintain system efficiency and reduce the frequency and cost of fluid replacement and system maintenance.

Typical Properties

Property		Typical Value
Color		Clear to light yellow
Temperature Range		-49° to 330°C
Atmospheric Reflux Boiling Point		289°C
Flash Point (Closed cup)		132°C
Flash Point (Open cup)		145°C
Autoignition Temperature		412°C
Film Coefficient	W/m^2K	295
Upper Flammability Limit	5.5 Vol.% in Air	190°C
Lower Flammability Limit	0.55 Vol.% in Air	135°C
Estimated Critical Temperature		489°C
Estimated Critical Pressure		24 bar
Estimated Critical Volume		3.258 L/kg
Molecular Weight (average)		199

Liquid Properties

Temp. (°C)	Density (kg/m ³)	Heat Cap. kJ/(kg·K)	Therm. Cond. W/(m·K)	Viscosity cSt	Viscosity cP	Vapor Press. kPa (abs)	
-49	1024	1.46	0.1256	2000	2050	—	
-46	1022	1.47	0.1254	1150	1180	—	
-40	1018	1.49	0.1251	446	454	—	
-30	1011	1.52	0.1245	131	133	—	
-20	1003	1.55	0.1239	53.1	53.3	—	
-10	996	1.58	0.1233	26.6	26.5	—	
0	989	1.62	0.1227	15.5	15.3	—	
10	982	1.65	0.1220	10.1	9.87	—	
20	974	1.68	0.1213	7.04	6.86	—	
30	967	1.71	0.1206	5.22	5.05	—	
40	960	1.75	0.1199	4.04	3.88	0.010	
50	953	1.78	0.1191	3.23	3.08	0.021	
60	945	1.81	0.1183	2.65	2.51	0.040	
70	938	1.84	0.1175	2.23	2.09	0.072	
80	931	1.88	0.1166	1.90	1.77	0.126	
90	923	1.91	0.1157	1.64	1.52	0.212	
100	916	1.94	0.1148	1.44	1.32	0.346	
110	908	1.97	0.1139	1.27	1.16	0.549	
120	901	2.01	0.1129	1.14	1.02	0.847	
130	893	2.04	0.1120	1.02	0.912	1.28	
140	886	2.07	0.1109	0.924	0.819	1.88	
150	878	2.11	0.1099	0.842	0.740	2.71	
160	871	2.14	0.1088	0.771	0.671	3.84	
170	863	2.17	0.1077	0.710	0.613	5.34	
180	855	2.21	0.1066	0.656	0.561	7.30	
190	847	2.24	0.1055	0.609	0.516	9.84	
200	839	2.27	0.1043	0.568	0.477	13.1	
210	832	2.31	0.1031	0.531	0.442	17.2	
220	823	2.34	0.1018	0.499	0.411	22.2	
230	815	2.38	0.1006	0.470	0.383	28.5	
240	807	2.41	0.0993	0.443	0.358	36.1	

250	799	2.44	0.0980	0.420	0.335	45.3	
260	790	2.48	0.0966	0.399	0.315	56.3	
270	782	2.51	0.0953	0.380	0.297	69.4	
280	773	2.55	0.0939	0.362	0.280	84.8	
290	764	2.58	0.0924	0.347	0.265	103	
300	755	2.62	0.0910	0.332	0.251	124	
310	745	2.66	0.0895	0.319	0.238	148	
320	736	2.69	0.0880	0.307	0.226	176	
330	726	2.73	0.0865	0.297	0.215	207	

Rodutherm 59 — Technical Data Sheet

The data presented is typical and subject to normal manufacturing variation. For product safety information, please refer to the Safety Data Sheet.