

Caldera 13

Heat Transfer Oil



CALDERA®
HEAT TRANSFER FLUIDS



Heat Transfer Fluids

Caldera 13 Heat Transfer Oil is designed for closed loop systems with inert gas blanketing. It is an economical, non-toxic, non-hazardous and environmentally friendly fluid that offers precise temperature control up to 315°C (599°F).

Applications

- Closed loop systems with inert gas blanketing
- Industrial plants including commercial laundromats, asphalt plants, pulp and paper mills, textiles etc
- Not to be used in open systems or other heat transfer systems prone to rapid oxidative degradation

Performance Advantages

- Meets requirements for fluids with incidental food contact and Ideal for food-processing applications
- Excellent varnish control keeps system clean for more efficient heat transfer
- High flash point for added safety
- Antioxidants mitigates oxidation and enhances fluid life
- High quality base stocks offer thermal stability over an extended temperature range
- Can be disposed using standard oil recycling services
- Low volatility improves safety and decreases possibility of pump cavitation
- Minimal odor

Temperature Range



Typical Properties	Caldera 13
Minimum Temperature, °C (°F)	0 (32)
Maximum Film Temperature, °C (°F)	332 (630)
Maximum Bulk Temperature, °C (°F)	315 (599)
Pour Point, °C (°F)	-20 (-4)
Flash Point, °C (°F)	208 (406)
Fire Point, °C (°F)	224 (435)
Autoignition Point, °C (°F)	360 (680)
Thermal Expansion Coefficient, %/°C	0.1012
Thermal Conductivity @ 38°C, W/m-K	0.136
Thermal Conductivity @ 260°C, W/m-K	0.124
Heat Capacity @ 38°C, kJ/kg-K	1.892
Heat Capacity @ 260°C, kJ/kg-K	2.589
Distillation Range (ASTM D2887), 10% °C	372
Distillation Range (ASTM D2887), 90% °C	455
Average Molecular Weight	394

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toll-free: 1-800-503-9533
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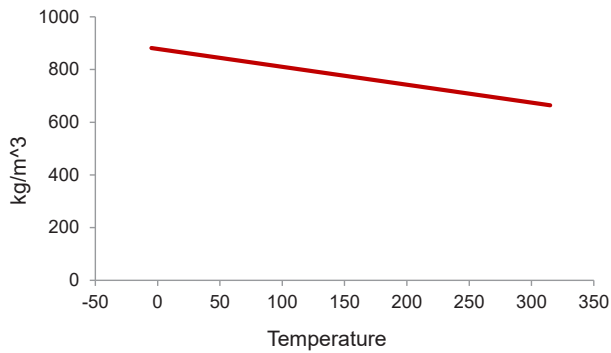
email: sales@iselinc.com
web: www.calderafluids.com

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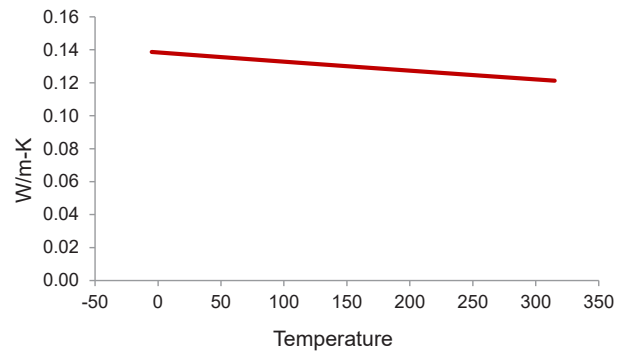
Heat Transfer Oil



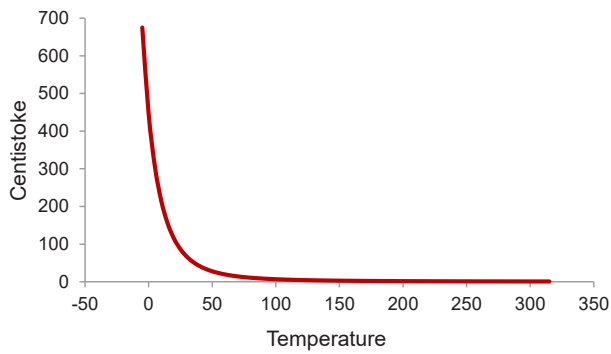
Density



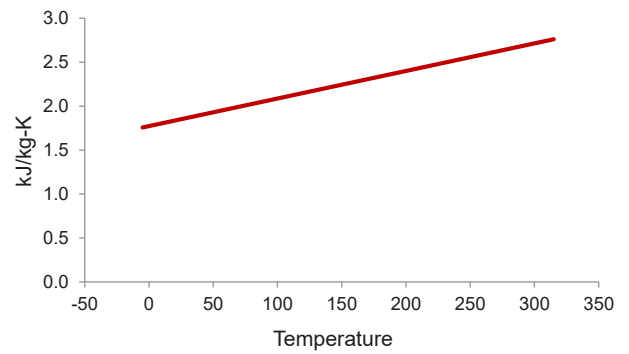
Thermal Conductivity



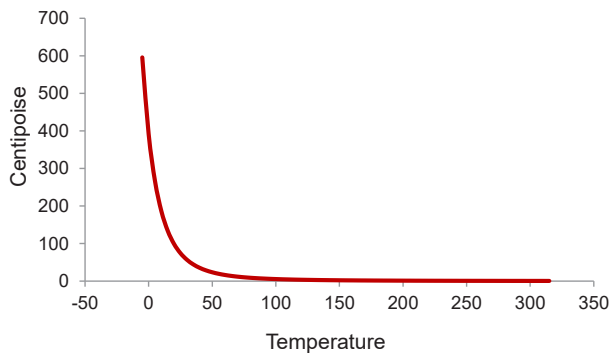
Kinematic Viscosity



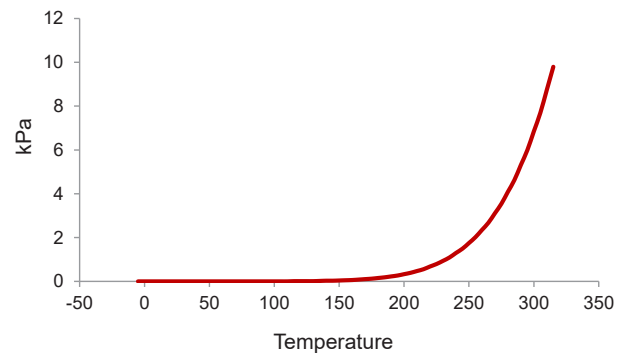
Heat Capacity



Dynamic Viscosity



Vapor Pressure



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Temperature (°C)	Density (kg/m ³)	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (W/m-K)	Heat Capacity (kJ/kg-K)	Vapor Pressure (kPa)
-5	881.66	674.96	595.74	0.139	1.757	0.00
0	878.26	445.57	391.76	0.138	1.773	0.00
5	874.87	304.00	266.26	0.138	1.789	0.00
10	871.47	213.68	186.42	0.138	1.805	0.00
15	868.08	154.29	134.08	0.138	1.820	0.00
20	864.68	114.14	98.81	0.137	1.836	0.00
25	861.28	86.33	74.43	0.137	1.852	0.00
30	857.89	66.61	57.20	0.137	1.867	0.00
35	854.49	52.33	44.77	0.136	1.883	0.00
40	851.10	41.80	35.62	0.136	1.899	0.00
45	847.70	33.90	28.76	0.136	1.914	0.00
50	844.31	27.86	23.55	0.136	1.930	0.00
55	840.91	23.19	19.52	0.135	1.946	0.00
60	837.51	19.53	16.37	0.135	1.961	0.00
65	834.12	16.61	13.87	0.135	1.977	0.00
70	830.72	14.27	11.87	0.134	1.993	0.00
75	827.33	12.36	10.24	0.134	2.008	0.00
80	823.93	10.80	8.91	0.134	2.024	0.00
85	820.53	9.51	7.81	0.134	2.040	0.00
90	817.14	8.42	6.89	0.133	2.055	0.00
95	813.74	7.51	6.12	0.133	2.071	0.00
100	810.35	6.74	5.47	0.133	2.087	0.00
105	806.95	6.08	4.91	0.133	2.103	0.00
110	803.55	5.51	4.43	0.132	2.118	0.00
115	800.16	5.02	4.02	0.132	2.134	0.01
120	796.76	4.59	3.66	0.132	2.150	0.01
125	793.37	4.21	3.35	0.131	2.165	0.01
130	789.97	3.88	3.07	0.131	2.181	0.01
135	786.58	3.59	2.83	0.131	2.197	0.02
140	783.18	3.34	2.61	0.131	2.212	0.03
145	779.78	3.11	2.42	0.130	2.228	0.03
150	776.39	2.90	2.25	0.130	2.244	0.04
155	772.99	2.71	2.10	0.130	2.259	0.05
160	769.60	2.55	1.96	0.130	2.275	0.06
165	766.20	2.40	1.84	0.129	2.291	0.08
170	762.80	2.26	1.73	0.129	2.306	0.10
175	759.41	2.14	1.63	0.129	2.322	0.12
180	756.01	2.03	1.53	0.128	2.338	0.15

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Temperature (°C)	Density (kg/m ³)	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (W/m-K)	Heat Capacity (kJ/kg-K)	Vapor Pressure (kPa)
185	752.62	1.92	1.45	0.128	2.353	0.19
190	749.22	1.83	1.37	0.128	2.369	0.23
195	745.83	1.74	1.30	0.128	2.385	0.27
200	742.43	1.66	1.23	0.127	2.400	0.33
205	739.03	1.59	1.17	0.127	2.416	0.39
210	735.64	1.52	1.12	0.127	2.432	0.47
215	732.24	1.46	1.07	0.127	2.448	0.56
220	728.85	1.40	1.02	0.126	2.463	0.68
225	725.45	1.34	0.98	0.126	2.479	0.79
230	722.05	1.29	0.93	0.126	2.495	0.94
235	718.66	1.25	0.90	0.125	2.510	1.09
240	715.26	1.20	0.86	0.125	2.526	1.30
245	711.87	1.16	0.83	0.125	2.542	1.49
250	708.47	1.12	0.80	0.125	2.557	1.75
255	705.07	1.09	0.77	0.124	2.573	2.02
260	701.68	1.05	0.74	0.124	2.589	2.35
265	698.28	1.02	0.71	0.124	2.604	2.68
270	694.89	0.99	0.69	0.124	2.620	3.11
275	691.49	0.96	0.67	0.123	2.636	3.54
280	688.10	0.93	0.64	0.123	2.651	4.09
285	684.70	0.91	0.62	0.123	2.667	4.62
290	681.30	0.89	0.60	0.123	2.683	5.31
295	677.91	0.86	0.59	0.122	2.698	5.99
300	674.51	0.84	0.57	0.122	2.714	6.85
305	671.12	0.82	0.55	0.122	2.730	7.69
310	667.72	0.80	0.54	0.122	2.746	8.74
315	664.32	0.78	0.52	0.121	2.761	9.80



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All products manufactured in the USA