

Caldera 10

Low-Temperature Heat Transfer Fluid



CALDERA®
HEAT TRANSFER FLUIDS



Heat Transfer Fluids

Caldera 10 is a specialized heat transfer fluid engineered for applications that operate in low temperature conditions or with cyclic temperature needs. Designed to operate from temperatures as low as -40°C (-40°F) to as high as 232°C (450°F), Caldera 10 is ideal for a broad range of industrial processes. The proprietary 2-stage antioxidant package ensures a long-lasting and clean operating fluid. A full suite of corrosion inhibitors and wear protection additives help to extend the life of system componentry as well.

Applications

- Systems requiring cyclical heating and low-temperature cooling
- Systems with a temperature range of -40°C (-40°F) to 232°C (450°F)

Performance Advantages

- Ideal for systems requiring both heating and cooling
- Superior fluidity at low temperatures
- Easy disposal
Can be disposed using mineral oil recycling services

Temperature Range



Typical Properties

Caldera 10

Minimum Temperature, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	-40 (-40)
Maximum Film Temperature, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	254 (489)
Maximum Bulk Temperature, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	232 (450)
Pour Point, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	-45 (-49)
Flash Point, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	150 (302)
Fire Point, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	164 (327)
Autoignition Point, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	329 (624)
Thermal Expansion Coefficient, $\%/^{\circ}\text{C}$	0.1016
Thermal Conductivity @ -40°C , W/m-K	0.148
Thermal Conductivity @ 38°C , W/m-K	0.142
Heat Capacity @ -40°C , kJ/kg-K	1.905
Heat Capacity @ 38°C , kJ/kg-K	2.142
Distillation Range (ASTM D2887), 10% $^{\circ}\text{C}$	263
Distillation Range (ASTM D2887), 90% $^{\circ}\text{C}$	508
Average Molecular Weight	372

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toll-free: 1-800-503-9533
phone: 904-378-3232

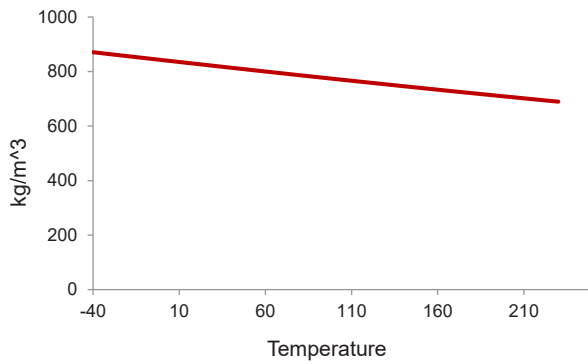
email: sales@iselinc.com
web: www.calderafuids.com

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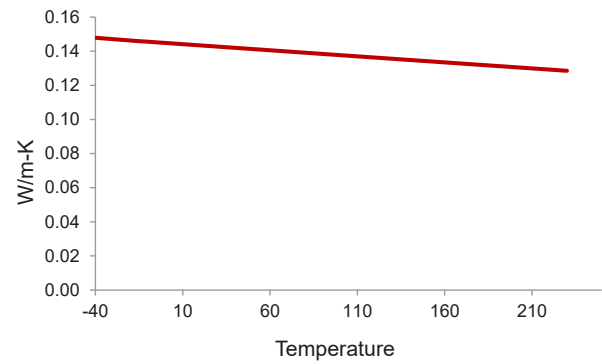
Low-Temperature Heat Transfer Fluid



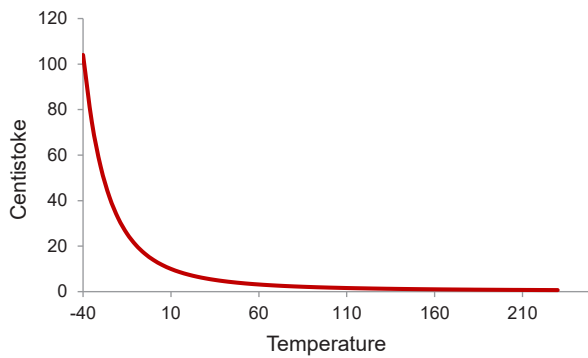
Density



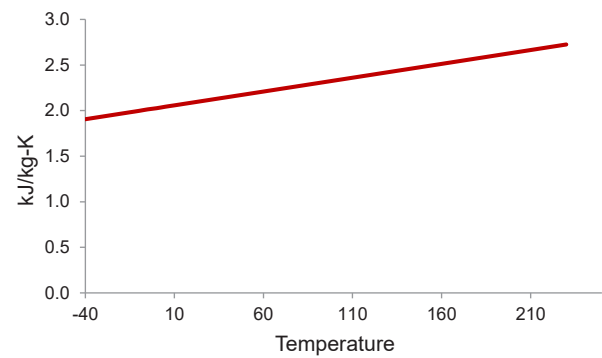
Thermal Conductivity



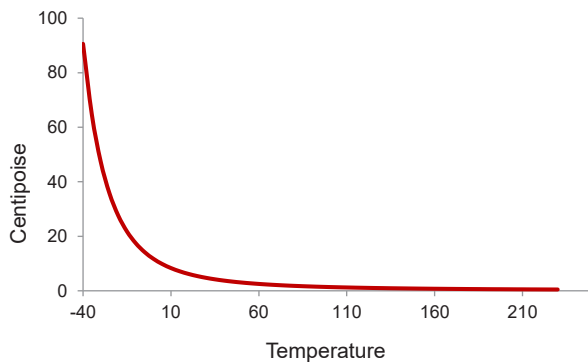
Kinematic Viscosity



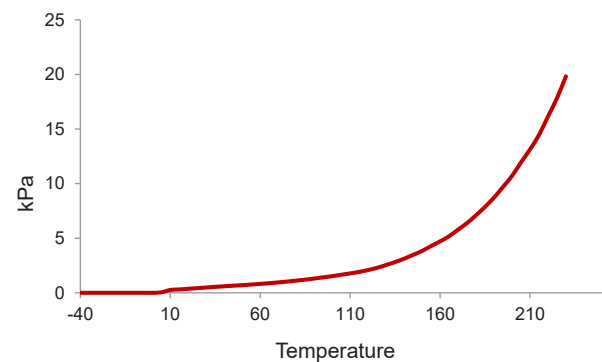
Heat Capacity



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)
-40	905.54	104.00	94.18	0.148	1.905	0.00
-35	902.12	74.54	67.24	0.148	1.921	0.00
-30	898.70	54.99	49.42	0.147	1.936	0.00
-25	895.28	41.63	37.27	0.147	1.951	0.00
-20	891.87	32.24	28.76	0.146	1.966	0.00
-15	888.45	25.49	22.64	0.146	1.981	0.00
-10	885.03	20.52	18.16	0.146	1.997	0.00
-5	881.62	16.79	14.80	0.145	2.013	0.00
0	878.20	13.94	12.24	0.145	2.026	0.00
5	874.78	11.73	10.26	0.145	2.043	0.04
10	871.36	9.98	8.70	0.144	2.057	0.26
15	867.95	8.59	7.46	0.144	2.073	0.31
20	864.53	7.46	6.45	0.143	2.088	0.37
25	861.11	6.54	5.63	0.143	2.103	0.43
30	857.70	5.78	4.96	0.143	2.118	0.49
35	854.28	5.14	4.40	0.142	2.133	0.54
40	850.86	4.61	3.92	0.142	2.148	0.60
45	847.44	4.16	3.52	0.142	2.163	0.65
50	844.03	3.77	3.18	0.141	2.179	0.70
55	840.61	3.43	2.89	0.141	2.194	0.76
60	837.19	3.14	2.63	0.141	2.209	0.82
65	833.78	2.89	2.41	0.140	2.224	0.88
70	830.36	2.67	2.22	0.140	2.239	0.95
75	826.94	2.48	2.05	0.140	2.254	1.03
80	823.53	2.30	1.90	0.139	2.269	1.12
85	820.11	2.15	1.76	0.139	2.285	1.20
90	816.69	2.01	1.64	0.138	2.300	1.30
95	813.27	1.89	1.54	0.138	2.315	1.42
100	809.86	1.78	1.44	0.138	2.330	1.52
105	806.44	1.68	1.36	0.137	2.345	1.65
110	803.02	1.59	1.28	0.137	2.360	1.78
115	799.61	1.51	1.21	0.137	2.376	1.92
120	796.19	1.43	1.14	0.136	2.391	2.09
125	792.77	1.36	1.08	0.136	2.406	2.29
130	789.35	1.30	1.03	0.136	2.421	2.54
135	785.94	1.24	0.98	0.135	2.436	2.82
140	782.52	1.19	0.93	0.135	2.451	3.12
145	779.10	1.14	0.89	0.135	2.467	3.47

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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)
150	775.69	1.10	0.85	0.134	2.482	3.83
155	772.27	1.06	0.82	0.134	2.497	4.28
160	768.85	1.02	0.78	0.133	2.512	4.71
165	765.43	0.98	0.75	0.133	2.527	5.18
170	762.02	0.95	0.72	0.133	2.543	5.78
175	758.60	0.92	0.70	0.132	2.558	6.38
180	755.18	0.89	0.67	0.132	2.573	7.10
185	751.77	0.86	0.65	0.132	2.588	7.87
190	748.35	0.84	0.63	0.131	2.603	8.72
195	744.93	0.81	0.60	0.131	2.619	9.69
200	741.51	0.79	0.59	0.131	2.634	10.70
205	738.10	0.77	0.57	0.130	2.649	11.94
210	734.68	0.75	0.55	0.130	2.664	13.12
215	731.26	0.73	0.53	0.130	2.679	14.45
220	727.85	0.71	0.52	0.129	2.695	16.13
225	724.43	0.70	0.50	0.129	2.710	17.82
230	721.01	0.68	0.49	0.129	2.725	19.82



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All products manufactured in the USA