

# Caldera 1

## High-Flash Heat Transfer Fluid



CALDERA  
HEAT TRANSFER FLUIDS



Caldera 1 is a high-flash point heat transfer fluid designed for applications where the operating temperature must be below the flash point of the fluid. Caldera 1 utilizes pure base fluids and a proprietary blend of advanced additives. This unique formulation increases fluid performance and lifespan by preventing fluid degradation. Caldera 1 has excellent oxidative resistance, making it ideal for both open and closed systems, with and without inert gas blanketing.

### Applications

- Systems required to operate below flash point
- Closed and open loop systems with a maximum bulk temperature of 644°F (340°C)

### Performance Advantages

- **High flash point for added safety**  
Ideal for systems that need to operate below flash point
- **Resistant against fluid degradation**  
Contributes to extended fluid life
- **Low varnishing tendencies**  
Allows for clean operation and greater thermal transfer efficiency
- **Easy disposal**  
Can be disposed using standard oil recycling services
- **Low volatility**  
Improves safety and decreases possibility of pump cavitations
- **Minimal odor**

### Temperature Range



Typical Properties	Caldera 1
Minimum Temperature, °F (°C)	59 (15)
Maximum Film Temperature, °F (°C)	680 (360)
Maximum Bulk Temperature, °F (°C)	644 (340)
Pour Point, °F (°C)	16 (-9)
Flash Point, °F (°C)	531 (277)
Fire Point, °F (°C)	583 (306)
Autoignition Point, °F (°C)	740 (393)
Thermal Expansion Coefficient, %/°C	0.1011
Thermal Conductivity @ 38°C, W/m-K	0.149
Thermal Conductivity @ 260°C, W/m-K	0.145
Heat Capacity @ 38°C, kJ/kg-K	1.874
Heat Capacity @ 260°C, kJ/kg-K	2.266
Distillation Range (ASTM D2887), 10% °C	446
Distillation Range, 90%	554
Average Molecular Weight	399

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toll-free: 1-800-503-9533  
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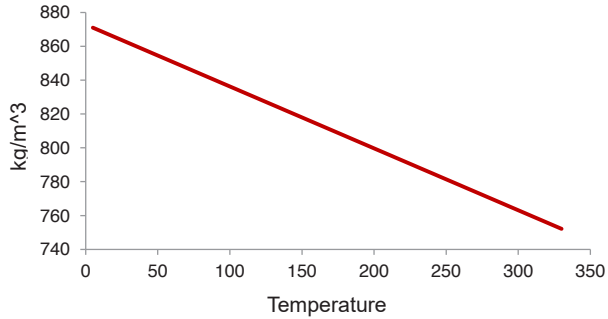
email: [sales@iselinc.com](mailto:sales@iselinc.com)  
web: [www.calderafluids.com](http://www.calderafluids.com)

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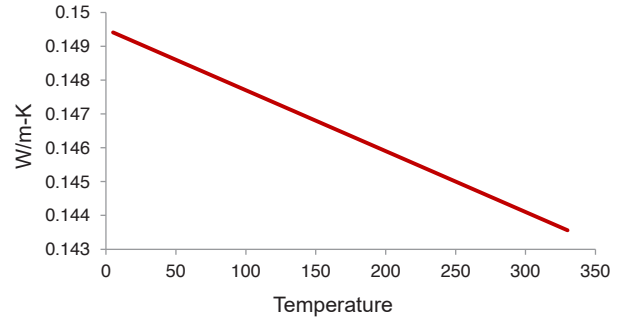
## High-Flash Heat Transfer Fluid



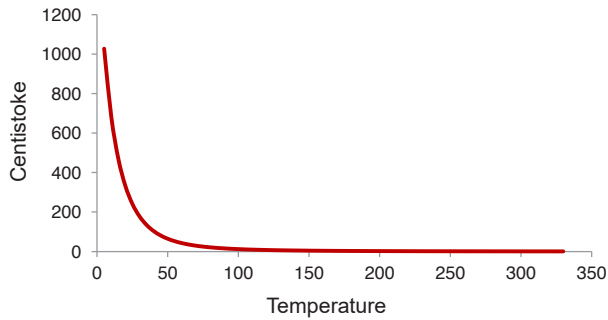
### Density



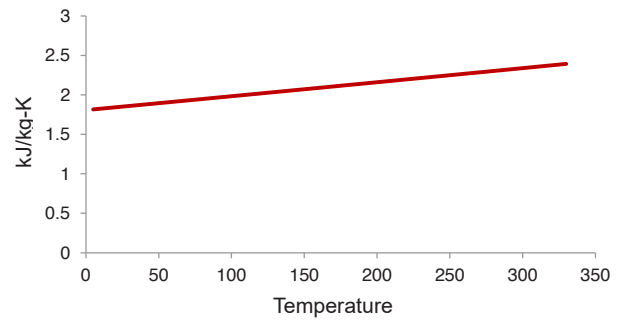
### Thermal Conductivity



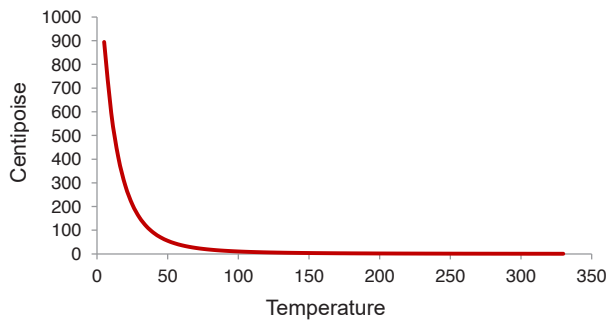
### Kinematic Viscosity



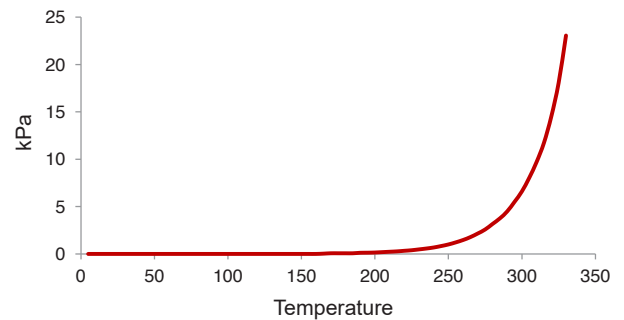
### Heat Capacity



### Dynamic Viscosity



### Vapor Pressure



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Temperature (°C)	Density (kg/m <sup>3</sup> )	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (W/m-K)	Heat Capacity (kJ/kg-K)	Vapor Pressure (kPa)
5	871.05	1027.33	894.86	0.149	1.816	0.00
10	869.22	685.54	595.89	0.149	1.825	0.00
15	867.39	471.34	408.84	0.149	1.834	0.00
20	865.56	333.00	288.23	0.149	1.843	0.00
25	863.74	241.15	208.29	0.149	1.851	0.00
30	861.91	178.62	153.95	0.149	1.860	0.00
35	860.08	135.05	116.15	0.149	1.869	0.00
40	858.25	104.04	89.30	0.149	1.878	0.00
45	856.42	81.55	69.84	0.149	1.886	0.00
50	854.59	64.92	55.48	0.149	1.895	0.00
55	852.76	52.44	44.72	0.149	1.904	0.00
60	850.93	42.92	36.52	0.148	1.913	0.00
65	849.10	35.56	30.19	0.148	1.921	0.00
70	847.27	29.79	25.24	0.148	1.930	0.00
75	845.45	25.21	21.32	0.148	1.939	0.00
80	843.62	21.54	18.17	0.148	1.948	0.00
85	841.79	18.57	15.63	0.148	1.956	0.00
90	839.96	16.13	13.55	0.148	1.965	0.00
95	838.13	14.12	11.84	0.148	1.974	0.00
100	836.30	12.45	10.41	0.148	1.983	0.00
105	834.47	11.04	9.22	0.148	1.992	0.00
110	832.64	9.86	8.21	0.148	2.000	0.00
115	830.81	8.84	7.35	0.147	2.009	0.00
120	828.98	7.98	6.61	0.147	2.018	0.00
125	827.16	7.23	5.98	0.147	2.027	0.00
130	825.33	6.58	5.43	0.147	2.036	0.00
135	823.50	6.02	4.95	0.147	2.045	0.00
140	821.67	5.52	4.54	0.147	2.053	0.00
145	819.84	5.09	4.17	0.147	2.062	0.00
150	818.01	4.70	3.84	0.147	2.071	0.00
155	816.18	4.36	3.56	0.147	2.080	0.00
160	814.35	4.05	3.30	0.147	2.089	0.00
165	812.52	3.78	3.07	0.147	2.098	0.03
170	810.69	3.53	2.87	0.146	2.106	0.07
175	808.87	3.31	2.68	0.146	2.115	0.07
180	807.04	3.11	2.51	0.146	2.124	0.07
185	805.21	2.93	2.36	0.146	2.133	0.07
190	803.38	2.77	2.22	0.146	2.142	0.12

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Temperature (°C)	Density (kg/m <sup>3</sup> )	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (W/m-K)	Heat Capacity (kJ/kg-K)	Vapor Pressure (kPa)
195	801.55	2.62	2.10	0.146	2.151	0.13
200	799.72	2.48	1.98	0.146	2.160	0.15
205	797.89	2.36	1.88	0.146	2.168	0.19
210	796.06	2.24	1.78	0.146	2.177	0.23
215	794.23	2.13	1.70	0.146	2.186	0.27
220	792.40	2.04	1.61	0.146	2.195	0.33
225	790.58	1.95	1.54	0.145	2.204	0.39
230	788.75	1.86	1.47	0.145	2.213	0.48
235	786.92	1.78	1.40	0.145	2.222	0.57
240	785.09	1.71	1.34	0.145	2.231	0.68
245	783.26	1.64	1.29	0.145	2.240	0.83
250	781.43	1.58	1.24	0.145	2.248	1.00
255	779.60	1.52	1.19	0.145	2.257	1.22
260	777.77	1.47	1.14	0.145	2.266	1.47
265	775.94	1.42	1.10	0.145	2.275	1.78
270	774.11	1.37	1.06	0.145	2.284	2.16
275	772.29	1.32	1.02	0.145	2.293	2.58
280	770.46	1.28	0.99	0.144	2.302	3.16
285	768.63	1.24	0.95	0.144	2.311	3.75
290	766.80	1.20	0.92	0.144	2.320	4.49
295	764.97	1.17	0.89	0.144	2.329	5.50
300	763.14	1.13	0.87	0.144	2.338	6.60
305	761.31	1.10	0.84	0.144	2.347	8.04
310	759.48	1.07	0.81	0.144	2.356	9.71
315	757.65	1.04	0.79	0.144	2.365	11.73
320	755.82	1.02	0.77	0.144	2.374	14.51
325	754.00	0.99	0.75	0.144	2.383	18.07
330	752.17	0.97	0.73	0.144	2.392	23.06



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All products manufactured in the USA