

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

Fluid properties are typical results and should not serve as a sole resource for determining the correct fluid for a particular application. Please consult an Isel representative to ensure that the product is the correct choice for the application. Revised 11/2017 - S

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

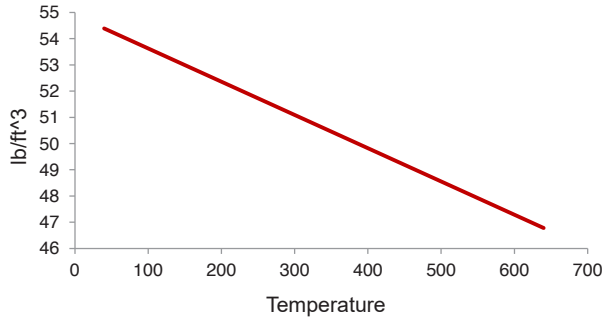
email: sales@iselinc.com
web: www.calderafluids.com

Caldera 1

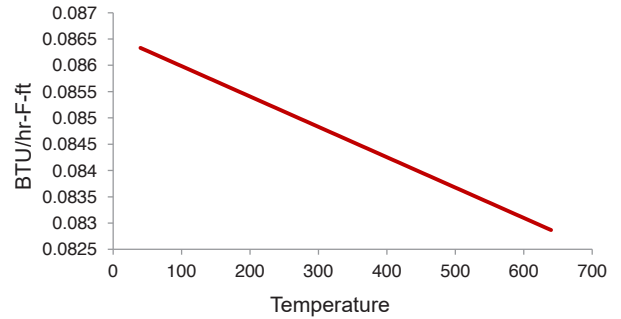
High-Flash Heat Transfer Fluid



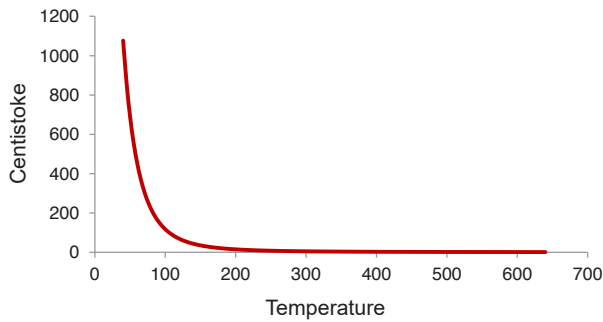
Density



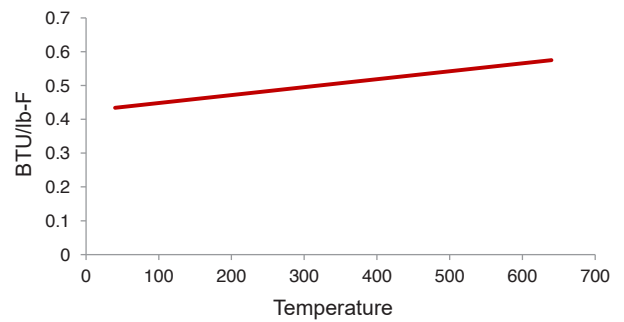
Thermal Conductivity



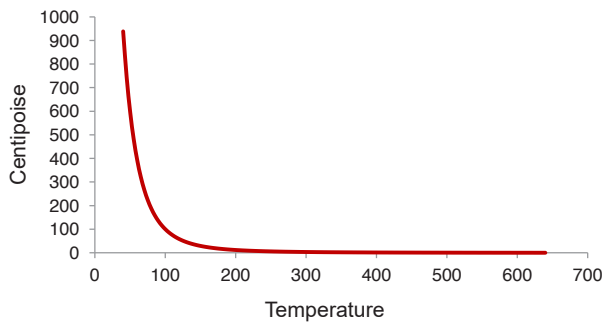
Kinematic Viscosity



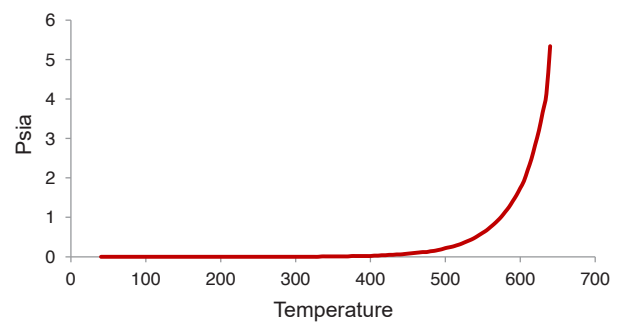
Heat Capacity



Dynamic Viscosity



Vapor Pressure



Fluid properties are typical results and should not serve as a sole resource for determining the correct fluid for a particular application. Please consult an Isel representative to ensure that the product is the correct choice for the application. Revised 11/2017 - S

Caldera 1



High-Flash Heat Transfer Fluid

Temperature (°F)	Density (lb/ft ³)	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (BTU/hr-F-ft)	Heat Capacity (BTU/lb-F)	Vapor Pressure (Psia)
40	54.39	1076.69	938.07	0.086	0.434	0.00
45	54.33	854.96	744.02	0.086	0.435	0.00
50	54.26	685.54	595.89	0.086	0.436	0.00
55	54.20	554.78	481.66	0.086	0.437	0.00
60	54.14	452.91	392.76	0.086	0.439	0.00
65	54.07	372.82	322.93	0.086	0.440	0.00
70	54.01	309.32	267.61	0.086	0.441	0.00
75	53.95	258.56	223.43	0.086	0.442	0.00
80	53.88	217.67	187.88	0.086	0.443	0.00
85	53.82	184.48	159.05	0.086	0.444	0.00
90	53.76	157.36	135.50	0.086	0.446	0.00
95	53.69	135.05	116.15	0.086	0.447	0.00
100	53.63	116.57	100.14	0.086	0.448	0.00
105	53.57	101.18	86.82	0.086	0.449	0.00
110	53.50	88.28	75.66	0.086	0.450	0.00
115	53.44	77.42	66.27	0.086	0.451	0.00
120	53.38	68.21	58.32	0.086	0.453	0.00
125	53.31	60.37	51.56	0.086	0.454	0.00
130	53.25	53.66	45.77	0.086	0.455	0.00
135	53.19	47.90	40.81	0.086	0.456	0.00
140	53.12	42.92	36.52	0.086	0.457	0.00
145	53.06	38.60	32.81	0.086	0.459	0.00
150	52.99	34.85	29.58	0.086	0.460	0.00
155	52.93	31.56	26.76	0.086	0.461	0.00
160	52.87	28.68	24.29	0.086	0.462	0.00
165	52.80	26.14	22.11	0.086	0.463	0.00
170	52.74	23.90	20.19	0.086	0.464	0.00
175	52.68	21.91	18.49	0.086	0.466	0.00
180	52.61	20.15	16.98	0.086	0.467	0.00
185	52.55	18.57	15.63	0.085	0.468	0.00
190	52.49	17.16	14.43	0.085	0.469	0.00
195	52.42	15.89	13.35	0.085	0.470	0.00
200	52.36	14.75	12.37	0.085	0.471	0.00
205	52.30	13.73	11.50	0.085	0.473	0.00
210	52.23	12.80	10.71	0.085	0.474	0.00
215	52.17	11.95	9.99	0.085	0.475	0.00
220	52.11	11.19	9.34	0.085	0.476	0.00
225	52.04	10.49	8.75	0.085	0.477	0.00

Fluid properties are typical results and should not serve as a sole resource for determining the correct fluid for a particular application. Please consult an Isel representative to ensure that the product is the correct choice for the application. Revised 11/2017 - S

Caldera 1



High-Flash Heat Transfer Fluid

Temperature (°F)	Density (lb/ft ³)	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (BTU/hr-F-ft)	Heat Capacity (BTU/lb-F)	Vapor Pressure (Psia)
230	51.98	9.86	8.21	0.085	0.479	0.00
235	51.92	9.27	7.71	0.085	0.480	0.00
240	51.85	8.74	7.26	0.085	0.481	0.00
245	51.79	8.25	6.85	0.085	0.482	0.00
250	51.73	7.80	6.46	0.085	0.483	0.00
255	51.66	7.39	6.11	0.085	0.484	0.00
260	51.60	7.00	5.79	0.085	0.486	0.00
265	51.54	6.65	5.49	0.085	0.487	0.00
270	51.47	6.32	5.21	0.085	0.488	0.00
275	51.41	6.02	4.95	0.085	0.489	0.00
280	51.35	5.73	4.72	0.085	0.490	0.00
285	51.28	5.47	4.49	0.085	0.491	0.00
290	51.22	5.22	4.29	0.085	0.493	0.00
295	51.16	5.00	4.09	0.085	0.494	0.00
300	51.09	4.78	3.91	0.085	0.495	0.00
305	51.03	4.58	3.74	0.085	0.496	0.00
310	50.97	4.39	3.59	0.085	0.497	0.00
315	50.90	4.22	3.44	0.085	0.498	0.00
320	50.84	4.05	3.30	0.085	0.500	0.00
325	50.77	3.90	3.17	0.085	0.501	0.00
330	50.71	3.75	3.05	0.085	0.502	0.00
335	50.65	3.61	2.93	0.085	0.503	0.01
340	50.58	3.48	2.82	0.085	0.504	0.01
345	50.52	3.36	2.72	0.085	0.506	0.01
350	50.46	3.25	2.62	0.085	0.507	0.01
355	50.39	3.14	2.53	0.085	0.508	0.01
360	50.33	3.03	2.44	0.084	0.509	0.01
365	50.27	2.93	2.36	0.084	0.510	0.01
370	50.20	2.84	2.28	0.084	0.511	0.01
375	50.14	2.75	2.21	0.084	0.513	0.02
380	50.08	2.67	2.14	0.084	0.514	0.02
385	50.01	2.59	2.07	0.084	0.515	0.02
390	49.95	2.51	2.01	0.084	0.516	0.02
395	49.89	2.44	1.95	0.084	0.517	0.02
390	49.95	2.51	2.01	0.084	0.516	0.02
395	49.89	2.44	1.95	0.084	0.517	0.02
390	49.95	2.51	2.01	0.084	0.516	0.02
395	49.89	2.44	1.95	0.084	0.517	0.02

Fluid properties are typical results and should not serve as a sole resource for determining the correct fluid for a particular application. Please consult an Isel representative to ensure that the product is the correct choice for the application. Revised 11/2017 - S

Caldera 1



High-Flash Heat Transfer Fluid

Temperature (°F)	Density (lb/ft ³)	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (BTU/hr-F-ft)	Heat Capacity (BTU/lb-F)	Vapor Pressure (Psia)
400	49.82	2.37	1.89	0.084	0.518	0.02
405	49.76	2.30	1.84	0.084	0.520	0.03
410	49.70	2.24	1.78	0.084	0.521	0.03
415	49.63	2.18	1.73	0.084	0.522	0.04
420	49.57	2.12	1.69	0.084	0.523	0.04
425	49.51	2.07	1.64	0.084	0.524	0.05
430	49.44	2.02	1.60	0.084	0.525	0.05
435	49.38	1.97	1.55	0.084	0.527	0.06
440	49.32	1.92	1.51	0.084	0.528	0.06
445	49.25	1.87	1.48	0.084	0.529	0.07
450	49.19	1.83	1.44	0.084	0.530	0.08
455	49.13	1.78	1.40	0.084	0.531	0.09
460	49.06	1.74	1.37	0.084	0.533	0.10
465	49.00	1.70	1.34	0.084	0.534	0.11
470	48.94	1.67	1.31	0.084	0.535	0.12
475	48.87	1.63	1.28	0.084	0.536	0.12
480	48.81	1.60	1.25	0.084	0.537	0.14
485	48.74	1.56	1.22	0.084	0.538	0.15
490	48.68	1.53	1.19	0.084	0.540	0.17
495	48.62	1.50	1.17	0.084	0.541	0.19
500	48.55	1.47	1.14	0.084	0.542	0.22
505	48.49	1.44	1.12	0.084	0.543	0.24
510	48.43	1.41	1.10	0.084	0.544	0.26
515	48.36	1.38	1.07	0.084	0.545	0.29
520	48.30	1.36	1.05	0.084	0.547	0.32
525	48.24	1.33	1.03	0.084	0.548	0.36
530	48.17	1.31	1.01	0.084	0.549	0.40
535	48.11	1.29	0.99	0.083	0.550	0.44
540	48.05	1.26	0.97	0.083	0.551	0.49
545	47.98	1.24	0.95	0.083	0.552	0.55
550	47.92	1.22	0.94	0.083	0.554	0.61
555	47.86	1.20	0.92	0.083	0.555	0.67
560	47.79	1.18	0.90	0.083	0.556	0.75
565	47.73	1.16	0.89	0.083	0.557	0.83
570	47.67	1.14	0.87	0.083	0.558	0.92
575	47.60	1.12	0.86	0.083	0.560	1.02
580	47.54	1.11	0.84	0.083	0.561	1.14
585	47.48	1.09	0.83	0.083	0.562	1.26

Fluid properties are typical results and should not serve as a sole resource for determining the correct fluid for a particular application. Please consult an Isel representative to ensure that the product is the correct choice for the application. Revised 11/2017 - S

Caldera 1



High-Flash Heat Transfer Fluid

Temperature (°F)	Density (lb/ft ³)	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (BTU/hr-F-ft)	Heat Capacity (BTU/lb-F)	Vapor Pressure (Psia)
590	47.41	1.07	0.81	0.083	0.563	1.41
595	47.35	1.06	0.80	0.083	0.564	1.56
600	47.29	1.04	0.79	0.083	0.565	1.74
605	47.22	1.03	0.78	0.083	0.567	1.92
610	47.16	1.01	0.76	0.083	0.568	2.20
615	47.10	1.00	0.75	0.083	0.569	2.48
620	47.03	0.98	0.74	0.083	0.570	2.84
625	46.97	0.97	0.73	0.083	0.571	3.20
630	46.91	0.96	0.72	0.083	0.572	3.66
635	46.84	0.94	0.71	0.083	0.574	4.13
640	46.78	0.93	0.70	0.083	0.575	5.34



5266 Highway Avenue
Jacksonville, FL 32254
USA

toll-free: 1-800-503-9533
phone: 904-378-3232
fax: 904-378-9696

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

Fluid properties are typical results and should not serve as a sole resource for determining the correct fluid for a particular application. Please consult an Isel representative to ensure that the product is the correct choice for the application. Revised 11/2017 - S

All products manufactured in the USA