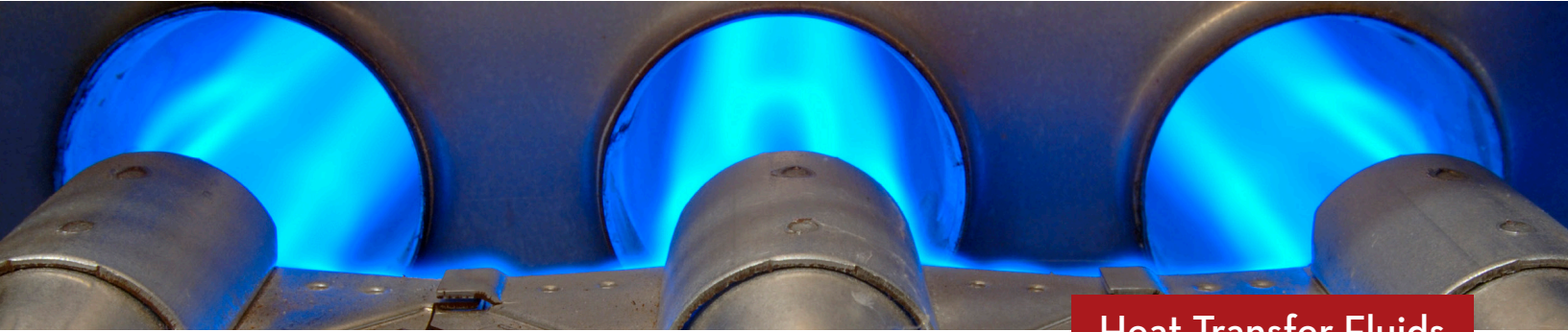


Caldera 11

Multi-Temperature Heat Transfer Fluid



CALDERA®
HEAT TRANSFER FLUIDS



Heat Transfer Fluids

Caldera 11 is an advanced heat transfer fluid designed specifically for systems requiring both heating and cooling cycles. This creates a heat transfer fluid that provides efficiency and longevity throughout a wide variety of temperature ranges. Caldera 11 is rated for applications operating between -26°F (-32°C) to 601°F (316°C).

Applications

- Systems requiring heating and low-temperature cooling
- Systems with a temperature range of -26°F (-32°C) to 601°F (316°C)

Performance Advantages

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

Temperature Range



Typical Properties	Caldera 11
Minimum Temperature, °F (°C)	-26 (-32)
Maximum Film Temperature, °F (°C)	630 (332)
Maximum Bulk Temperature, °F (°C)	601 (316)
Pour Point, °F (°C)	-72 (-58)
Flash Point, °F (°C)	329 (165)
Fire Point, °F (°C)	370 (188)
Autoignition Point, °F (°C)	675 (357)
Thermal Expansion Coefficient, %/°F	0.0564
Thermal Conductivity @ 100°F, BTU/h-ft-F	0.0873
Thermal Conductivity @ 500°F, BTU/h-ft-F	0.0838
Heat Capacity @ 100°F, BTU/lb-F	0.453
Heat Capacity @ 500°F, BTU/lb-F	0.517
Distillation Range (ASTM D2887), 10% °F	615
Distillation Range (ASTM D2887), 90% °F	642
Average Molecular Weight	395

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

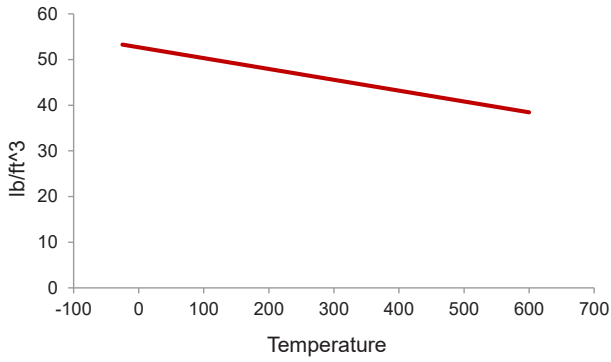
email: sales@iselinc.com
web: www.calderafuids.com

Caldera 11

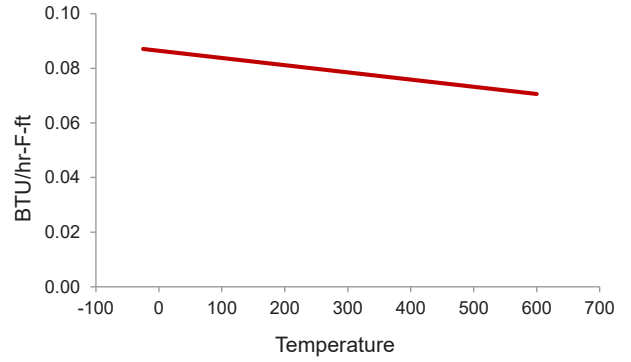
Multi-Temperature Heat Transfer Fluid



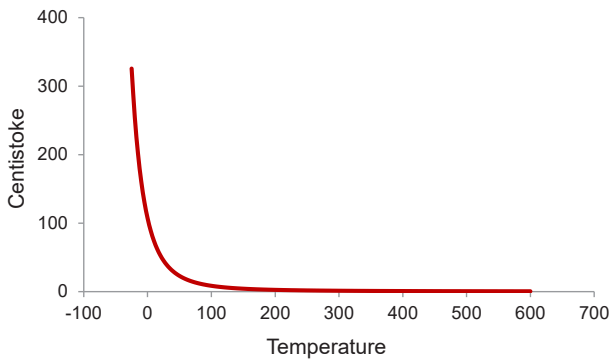
Density



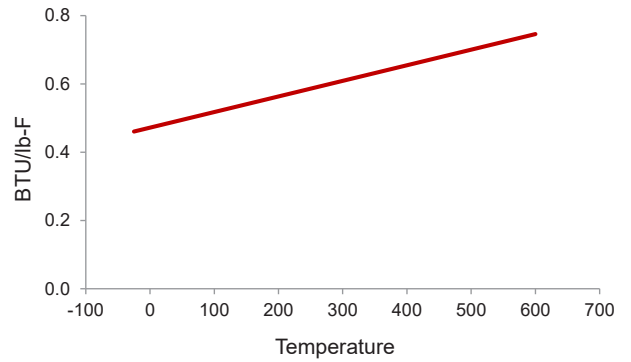
Thermal Conductivity



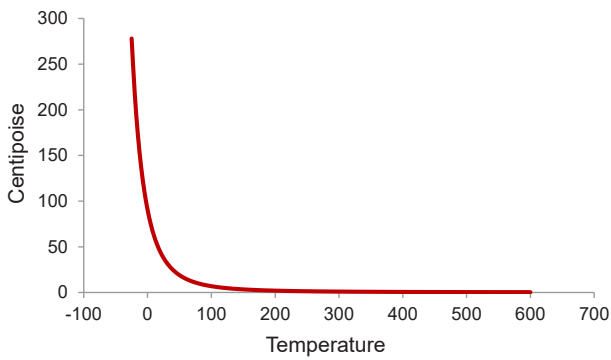
Kinematic Viscosity



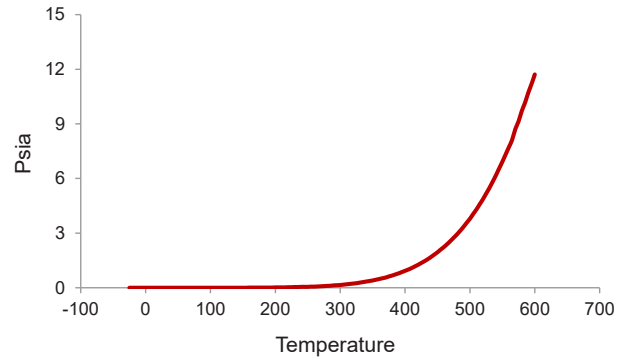
Heat Capacity



Dynamic Viscosity



Vapor Pressure



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Caldera 11



Multi-Temperature 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	53.63	743.42	639.04	0.087	0.454	0.00
-35	53.51	555.92	476.81	0.087	0.456	0.00
-30	53.39	422.35	361.45	0.087	0.458	0.00
-25	53.27	325.65	278.07	0.087	0.460	0.00
-20	53.16	254.59	216.91	0.087	0.463	0.00
-15	53.04	201.61	171.39	0.087	0.465	0.00
-10	52.92	161.60	137.07	0.087	0.467	0.00
-5	52.80	131.00	110.86	0.087	0.470	0.00
0	52.68	107.32	90.62	0.086	0.472	0.00
5	52.56	88.79	74.80	0.086	0.474	0.00
10	52.44	74.15	62.33	0.086	0.476	0.00
15	52.33	62.46	52.38	0.086	0.479	0.00
20	52.21	53.04	44.38	0.086	0.481	0.00
25	52.09	45.39	37.89	0.086	0.483	0.00
30	51.97	39.12	32.59	0.086	0.486	0.00
35	51.85	33.95	28.21	0.085	0.488	0.00
40	51.73	29.64	24.58	0.085	0.490	0.00
45	51.61	26.04	21.54	0.085	0.492	0.00
50	51.49	23.00	18.99	0.085	0.495	0.00
55	51.38	20.43	16.82	0.085	0.497	0.00
60	51.26	18.23	14.98	0.085	0.499	0.00
65	51.14	16.35	13.40	0.085	0.502	0.00
70	51.02	14.72	12.04	0.085	0.504	0.00
75	50.90	13.31	10.86	0.084	0.506	0.00
80	50.78	12.09	9.84	0.084	0.508	0.00
85	50.66	11.02	8.95	0.084	0.511	0.00
90	50.55	10.07	8.16	0.084	0.513	0.00
95	50.43	9.24	7.47	0.084	0.515	0.00
100	50.31	8.51	6.86	0.084	0.518	0.00
105	50.19	7.86	6.32	0.084	0.520	0.00
110	50.07	7.27	5.84	0.084	0.522	0.00
115	49.95	6.75	5.41	0.083	0.524	0.00
120	49.83	6.28	5.02	0.083	0.527	0.00
125	49.71	5.86	4.67	0.083	0.529	0.00
130	49.60	5.48	4.36	0.083	0.531	0.00
135	49.48	5.14	4.07	0.083	0.534	0.00
140	49.36	4.82	3.82	0.083	0.536	0.00
145	49.24	4.54	3.58	0.083	0.538	0.00

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Multi-Temperature 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)
150	49.12	4.28	3.37	0.082	0.540	0.00
155	49.00	4.04	3.17	0.082	0.543	0.00
160	48.88	3.82	3.00	0.082	0.545	0.01
165	48.77	3.62	2.83	0.082	0.547	0.01
170	48.65	3.44	2.68	0.082	0.550	0.01
175	48.53	3.27	2.54	0.082	0.552	0.01
180	48.41	3.11	2.41	0.082	0.554	0.01
185	48.29	2.97	2.30	0.082	0.556	0.01
190	48.17	2.83	2.19	0.081	0.559	0.01
195	48.05	2.71	2.08	0.081	0.561	0.01
200	47.93	2.59	1.99	0.081	0.563	0.02
205	47.82	2.48	1.90	0.081	0.566	0.02
210	47.70	2.38	1.82	0.081	0.568	0.02
215	47.58	2.28	1.74	0.081	0.570	0.02
220	47.46	2.20	1.67	0.081	0.572	0.03
225	47.34	2.11	1.60	0.080	0.575	0.03
230	47.22	2.03	1.54	0.080	0.577	0.04
235	47.10	1.96	1.48	0.080	0.579	0.04
240	46.99	1.89	1.42	0.080	0.582	0.05
245	46.87	1.83	1.37	0.080	0.584	0.05
250	46.75	1.77	1.32	0.080	0.586	0.05
255	46.63	1.71	1.28	0.080	0.588	0.06
260	46.51	1.65	1.23	0.080	0.591	0.06
265	46.39	1.60	1.19	0.079	0.593	0.07
270	46.27	1.55	1.15	0.079	0.595	0.08
275	46.15	1.51	1.11	0.079	0.597	0.09
280	46.04	1.46	1.08	0.079	0.600	0.10
285	45.92	1.42	1.05	0.079	0.602	0.11
290	45.80	1.38	1.01	0.079	0.604	0.13
295	45.68	1.34	0.98	0.079	0.607	0.14
300	45.56	1.31	0.96	0.079	0.609	0.15
305	45.44	1.27	0.93	0.078	0.611	0.17
310	45.32	1.24	0.90	0.078	0.613	0.19
315	45.21	1.21	0.88	0.078	0.616	0.21
320	45.09	1.18	0.85	0.078	0.618	0.23
325	44.97	1.15	0.83	0.078	0.620	0.25
330	44.85	1.13	0.81	0.078	0.623	0.28
335	44.73	1.10	0.79	0.078	0.625	0.31

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Multi-Temperature 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)
340	44.61	1.08	0.77	0.077	0.627	0.34
345	44.49	1.05	0.75	0.077	0.629	0.37
350	44.37	1.03	0.73	0.077	0.632	0.40
355	44.26	1.01	0.71	0.077	0.634	0.44
360	44.14	0.99	0.70	0.077	0.636	0.48
365	44.02	0.97	0.68	0.077	0.639	0.52
370	43.90	0.95	0.67	0.077	0.641	0.56
375	43.78	0.93	0.65	0.077	0.643	0.62
380	43.66	0.91	0.64	0.076	0.645	0.67
385	43.54	0.89	0.62	0.076	0.648	0.73
390	43.43	0.88	0.61	0.076	0.650	0.79
395	43.31	0.86	0.60	0.076	0.652	0.86
400	43.19	0.85	0.59	0.076	0.655	0.93
405	43.07	0.83	0.57	0.076	0.657	1.00
410	42.95	0.82	0.56	0.076	0.659	1.08
415	42.83	0.80	0.55	0.075	0.661	1.17
420	42.71	0.79	0.54	0.075	0.664	1.26
425	42.59	0.78	0.53	0.075	0.666	1.36
430	42.48	0.77	0.52	0.075	0.668	1.46
435	42.36	0.76	0.51	0.075	0.671	1.57
440	42.24	0.74	0.50	0.075	0.673	1.69
445	42.12	0.73	0.49	0.075	0.675	1.82
450	42.00	0.72	0.49	0.075	0.677	1.95
455	41.88	0.71	0.48	0.074	0.680	2.10
460	41.76	0.70	0.47	0.074	0.682	2.24
465	41.65	0.69	0.46	0.074	0.684	2.40
470	41.53	0.68	0.45	0.074	0.687	2.57
475	41.41	0.67	0.45	0.074	0.689	2.75
480	41.29	0.67	0.44	0.074	0.691	2.93
485	41.17	0.66	0.43	0.074	0.693	3.13
490	41.05	0.65	0.43	0.073	0.696	3.34
495	40.93	0.64	0.42	0.073	0.698	3.57
500	40.81	0.63	0.41	0.073	0.700	3.79
505	40.70	0.63	0.41	0.073	0.703	4.05
510	40.58	0.62	0.40	0.073	0.705	4.30
515	40.46	0.61	0.40	0.073	0.707	4.58
520	40.34	0.60	0.39	0.073	0.709	4.86
525	40.22	0.60	0.39	0.073	0.712	5.17

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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)
530	40.10	0.59	0.38	0.072	0.714	5.48
535	39.98	0.59	0.38	0.072	0.716	5.82
540	39.87	0.58	0.37	0.072	0.719	6.17
545	39.75	0.57	0.37	0.072	0.721	6.55
550	39.63	0.57	0.36	0.072	0.723	6.92
555	39.51	0.56	0.36	0.072	0.725	7.32
560	39.39	0.56	0.35	0.072	0.728	7.72
565	39.27	0.55	0.35	0.072	0.730	8.12
570	39.15	0.55	0.34	0.071	0.732	8.72
575	39.03	0.54	0.34	0.071	0.735	9.14
580	38.92	0.54	0.33	0.071	0.737	9.72
585	38.80	0.53	0.33	0.071	0.739	10.17
590	38.68	0.53	0.33	0.071	0.741	10.72
595	38.56	0.52	0.32	0.071	0.744	11.19
600	38.44	0.52	0.32	0.071	0.746	11.72



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

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All products manufactured in the USA