

# 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°F (-40°C) to as high as 450°F (232°C), 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°F (-40°C) to 450°F (232°C)

## 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, °F (°C)	-40 (-40)
Maximum Film Temperature, °F (°C)	489 (254)
Maximum Bulk Temperature, °F (°C)	450 (232)
Pour Point, °F (°C)	-49 (-45)
Flash Point, °F (°C)	302 (150)
Fire Point, °F (°C)	327 (164)
Autoignition Point, °F (°C)	624 (329)
Thermal Expansion Coefficient, %/°F	0.0564
Thermal Conductivity @ -40°F, BTU/h-ft-F	0.0855
Thermal Conductivity @ 100°F, BTU/h-ft-F	0.0821
Heat Capacity @ -40°F, BTU/lb-F	0.455
Heat Capacity @ 100°F, BTU/lb-F	0.512
Distillation Range (ASTM D2887), 10% °F	505
Distillation Range (ASTM D2887), 90% °F	946
Average Molecular Weight	372

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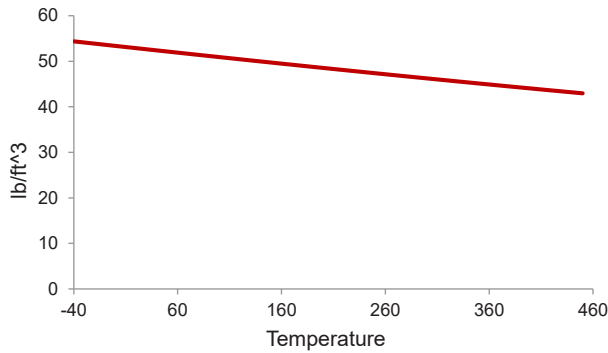
email: [sales@iselinc.com](mailto:sales@iselinc.com)  
web: [www.calderafuids.com](http://www.calderafuids.com)

# Caldera 10

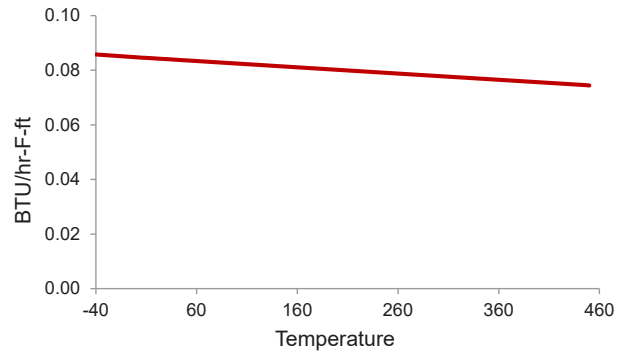
## Low-Temperature Heat Transfer Fluid



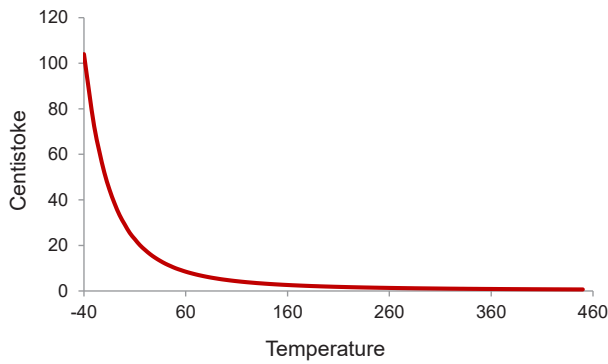
### Density



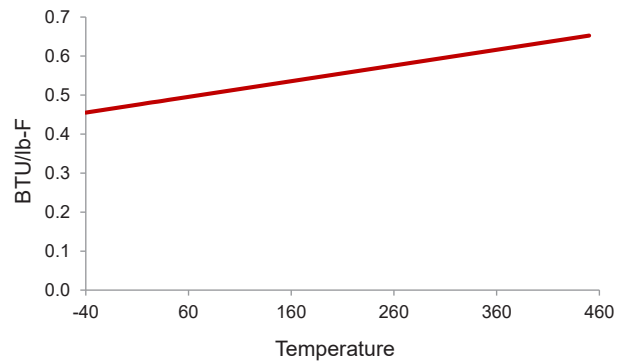
### Thermal Conductivity



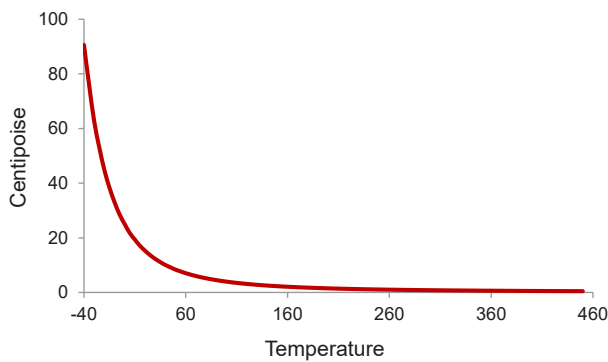
### Kinematic Viscosity



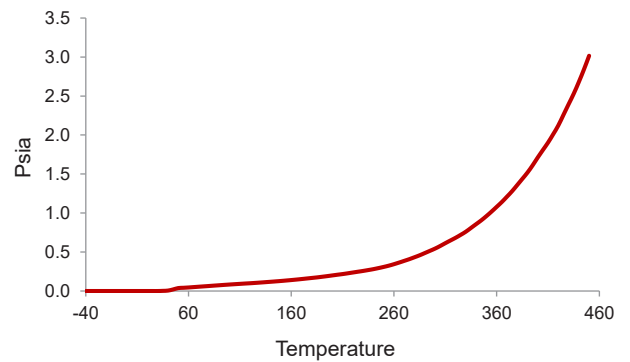
### Heat Capacity



### Dynamic Viscosity



### Vapor Pressure



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## Low-Temperature Heat Transfer Fluid

Temperature (°F)	Density (lb/ft <sup>3</sup> )	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (BTU/hr-F-ft)	Heat Capacity (BTU/lb-F)	Vapor Pressure (Psia)
-40	56.53	104.00	94.23	0.085	0.455	0.00
-35	56.41	86.11	77.86	0.085	0.457	0.00
-30	56.29	71.97	64.93	0.085	0.459	0.00
-25	56.18	60.68	54.63	0.085	0.461	0.00
-20	56.06	51.59	46.35	0.085	0.463	0.00
-15	55.94	44.20	39.63	0.085	0.465	0.00
-10	55.82	38.14	34.12	0.085	0.467	0.00
-5	55.70	33.14	29.59	0.085	0.470	0.00
0	55.58	28.98	25.81	0.085	0.472	0.00
5	55.46	25.49	22.66	0.084	0.474	0.00
10	55.35	22.55	20.00	0.084	0.476	0.00
15	55.23	20.05	17.75	0.084	0.478	0.00
20	55.11	17.92	15.83	0.084	0.480	0.00
25	54.99	16.09	14.18	0.084	0.482	0.00
30	54.87	14.51	12.76	0.084	0.484	0.00
35	54.75	13.14	11.53	0.084	0.486	0.00
40	54.63	11.95	10.46	0.084	0.488	0.00
45	54.52	10.90	9.53	0.084	0.490	0.02
50	54.40	9.98	8.70	0.083	0.492	0.04
55	54.28	9.17	7.98	0.083	0.494	0.04
60	54.16	8.45	7.34	0.083	0.496	0.05
65	54.04	7.81	6.77	0.083	0.498	0.05
70	53.92	7.24	6.26	0.083	0.500	0.06
75	53.81	6.73	5.81	0.083	0.502	0.06
80	53.69	6.27	5.40	0.083	0.504	0.07
85	53.57	5.86	5.03	0.083	0.506	0.07
90	53.45	5.48	4.70	0.082	0.508	0.07
95	53.33	5.14	4.40	0.082	0.510	0.08
100	53.21	4.84	4.13	0.082	0.512	0.08
105	53.09	4.56	3.88	0.082	0.514	0.09
110	52.98	4.30	3.65	0.082	0.516	0.09
115	52.86	4.06	3.44	0.082	0.518	0.10
120	52.74	3.85	3.25	0.082	0.520	0.10
125	52.62	3.65	3.08	0.082	0.522	0.11
130	52.50	3.47	2.92	0.082	0.524	0.11
135	52.38	3.30	2.77	0.081	0.526	0.12
140	52.26	3.14	2.63	0.081	0.528	0.12
145	52.15	3.00	2.51	0.081	0.530	0.13

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## Low-Temperature Heat Transfer Fluid

Temperature (°F)	Density (lb/ft <sup>3</sup> )	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (BTU/hr-F-ft)	Heat Capacity (BTU/lb-F)	Vapor Pressure (Psia)
150	52.03	2.87	2.39	0.081	0.532	0.13
155	51.91	2.74	2.28	0.081	0.534	0.13
160	51.79	2.63	2.18	0.081	0.536	0.14
165	51.67	2.52	2.08	0.081	0.538	0.15
170	51.55	2.42	2.00	0.081	0.540	0.16
175	51.43	2.32	1.91	0.081	0.542	0.16
180	51.32	2.23	1.84	0.080	0.544	0.17
185	51.20	2.15	1.76	0.080	0.546	0.18
190	51.08	2.07	1.70	0.080	0.548	0.19
195	50.96	2.00	1.63	0.080	0.550	0.19
200	50.84	1.93	1.57	0.080	0.552	0.20
205	50.72	1.86	1.52	0.080	0.554	0.20
210	50.61	1.80	1.46	0.080	0.556	0.21
215	50.49	1.75	1.41	0.080	0.558	0.22
220	50.37	1.69	1.37	0.079	0.560	0.23
225	50.25	1.64	1.32	0.079	0.562	0.25
230	50.13	1.59	1.28	0.079	0.564	0.26
235	50.01	1.54	1.24	0.079	0.566	0.27
240	49.89	1.50	1.20	0.079	0.568	0.28
245	49.78	1.46	1.16	0.079	0.570	0.29
250	49.66	1.42	1.13	0.079	0.572	0.31
255	49.54	1.38	1.10	0.079	0.574	0.33
260	49.42	1.34	1.06	0.079	0.576	0.34
265	49.30	1.31	1.03	0.078	0.578	0.36
270	49.18	1.28	1.01	0.078	0.580	0.38
275	49.06	1.24	0.98	0.078	0.582	0.40
280	48.95	1.22	0.95	0.078	0.584	0.43
285	48.83	1.19	0.93	0.078	0.586	0.46
290	48.71	1.16	0.91	0.078	0.588	0.48
295	48.59	1.13	0.88	0.078	0.590	0.51
300	48.47	1.11	0.86	0.078	0.592	0.54
305	48.35	1.08	0.84	0.078	0.594	0.57
310	48.23	1.06	0.82	0.077	0.596	0.60
315	48.12	1.04	0.80	0.077	0.598	0.64
320	48.00	1.02	0.78	0.077	0.600	0.68
325	47.88	1.00	0.77	0.077	0.603	0.72
330	47.76	0.98	0.75	0.077	0.605	0.76
335	47.64	0.96	0.73	0.077	0.607	0.81

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Temperature (°F)	Density (lb/ft <sup>3</sup> )	Kinematic Viscosity (Centistoke)	Dynamic Viscosity (Centipoise)	Thermal Conductivity (BTU/hr-F-ft)	Heat Capacity (BTU/lb-F)	Vapor Pressure (Psia)
340	47.52	0.94	0.72	0.077	0.609	0.86
345	47.41	0.92	0.70	0.077	0.611	0.91
350	47.29	0.91	0.69	0.076	0.613	0.96
355	47.17	0.89	0.67	0.076	0.615	1.02
360	47.05	0.88	0.66	0.076	0.617	1.08
365	46.93	0.86	0.65	0.076	0.619	1.14
370	46.81	0.85	0.64	0.076	0.621	1.21
375	46.69	0.83	0.62	0.076	0.623	1.28
380	46.58	0.82	0.61	0.076	0.625	1.35
385	46.46	0.81	0.60	0.076	0.627	1.43
390	46.34	0.79	0.59	0.076	0.629	1.52
395	46.22	0.78	0.58	0.075	0.631	1.61
400	46.10	0.77	0.57	0.075	0.633	1.70
405	45.98	0.76	0.56	0.075	0.635	1.80
410	45.86	0.75	0.55	0.075	0.637	1.91
415	45.75	0.74	0.54	0.075	0.639	2.02
420	45.63	0.73	0.53	0.075	0.641	2.13
425	45.51	0.72	0.52	0.075	0.643	2.26
430	45.39	0.71	0.52	0.075	0.645	2.39
435	45.27	0.70	0.51	0.075	0.647	2.53
440	45.15	0.69	0.50	0.074	0.649	2.68
445	45.03	0.68	0.49	0.074	0.651	2.84
450	44.92	0.67	0.48	0.074	0.653	3.00



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All products manufactured in the USA