

# Caldera 12



## Food-Grade Low-Temperature Heat Transfer Fluid



### Heat Transfer Fluids

Caldera 12 is formulated to meet HT-1 requirements for incidental food contact without comprising performance or fluid life. It utilizes clear base fluids that are free from impurities and aromatic compounds. Caldera 12 is ideal for low-temperature operations and rated for applications up to 232°C (450°F).

## Applications

- Closed and open loop systems with a maximum bulk temperature of 232°C (450°F)
- Low-temperature food-grade systems

## Performance Advantages



Nonfood Compounds  
Category Code HT1  
Registration # 154919

- **NSF HT-1 registered**  
Meets requirements for incidental food contact
- **Low varnishing tendencies**  
Allows for clean operation and greater thermal transfer efficiency
- **Ideal for food-processing applications**
- **Minimal odor**

## Temperature Range



Typical Properties	Caldera 12
Minimum Temperature, °C (°F)	-40 (-40)
Maximum Film Temperature, °C (°F)	254 (489)
Maximum Bulk Temperature, °C (°F)	232 (450)
Pour Point, °C (°F)	-45 (-49)
Flash Point, °C (°F)	150 (302)
Fire Point, °C (°F)	164 (327)
Autoignition Point, °C (°F)	329 (624)
Thermal Expansion Coefficient, %/°C	0.0855
Thermal Conductivity @ 38°C, W/m-K	0.141
Heat Capacity @ 38°C, kJ/kg-K	2.126
Distillation Range (ASTM D2887), 10% °C	263
Distillation Range (ASTM D2887), 90% °C	508
Average Molecular Weight	372

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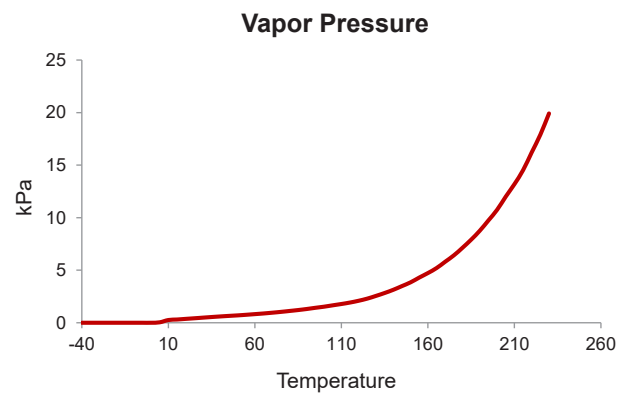
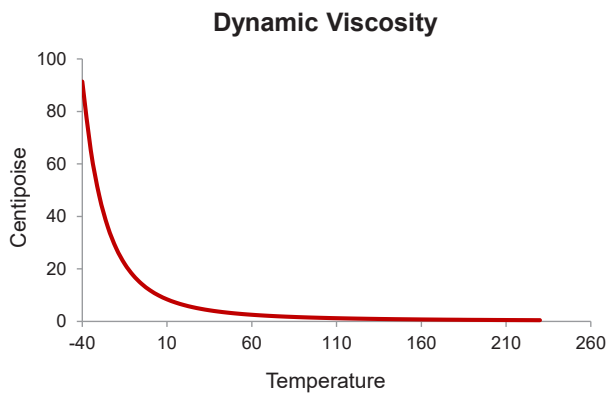
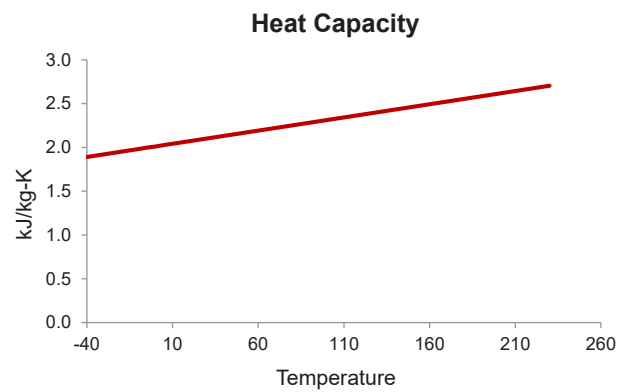
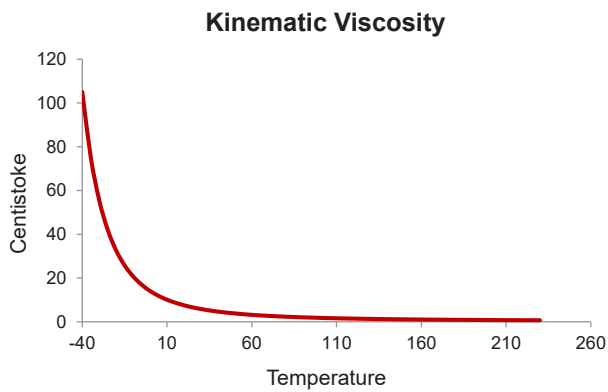
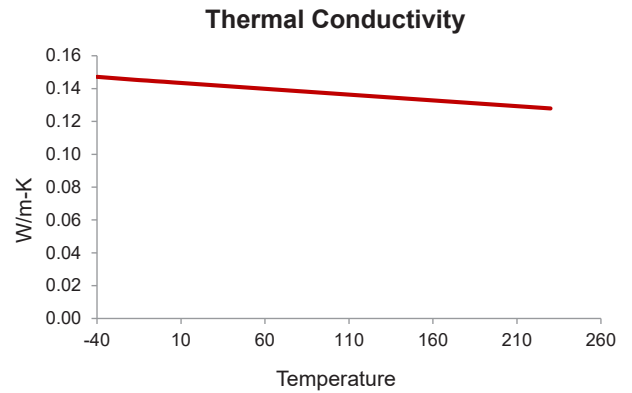
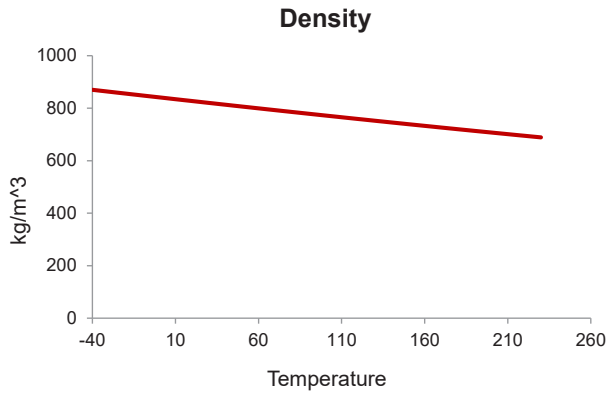
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## Food-Grade Low-Temperature Heat Transfer Fluid

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)
-40	870.03	105.04	91.39	0.147	1.891	0.00
-35	866.42	75.29	65.23	0.147	1.906	0.00
-30	862.82	55.54	47.93	0.146	1.921	0.00
-25	859.23	42.05	36.13	0.146	1.936	0.00
-20	855.64	32.57	27.87	0.146	1.951	0.00
-15	852.06	25.74	21.93	0.145	1.967	0.00
-10	848.49	20.72	17.58	0.145	1.982	0.00
-5	844.93	16.96	14.33	0.144	1.998	0.00
0	841.37	14.08	11.85	0.144	2.011	0.00
5	837.82	11.84	9.92	0.144	2.027	0.04
10	834.28	10.08	8.41	0.143	2.042	0.26
15	830.75	8.68	7.21	0.143	2.057	0.31
20	827.23	7.54	6.24	0.143	2.072	0.37
25	823.72	6.61	5.44	0.142	2.087	0.43
30	820.22	5.84	4.79	0.142	2.102	0.49
35	816.72	5.20	4.24	0.142	2.117	0.55
40	813.24	4.66	3.79	0.141	2.132	0.60
45	809.76	4.20	3.40	0.141	2.147	0.65
50	806.29	3.81	3.07	0.141	2.162	0.70
55	802.84	3.47	2.78	0.140	2.177	0.76
60	799.39	3.18	2.54	0.140	2.192	0.82
65	795.95	2.92	2.32	0.140	2.207	0.88
70	792.53	2.70	2.14	0.139	2.222	0.96
75	789.11	2.50	1.97	0.139	2.237	1.03
80	785.70	2.33	1.83	0.138	2.252	1.12
85	782.31	2.17	1.70	0.138	2.267	1.21
90	778.92	2.03	1.58	0.138	2.283	1.31
95	775.55	1.91	1.48	0.137	2.298	1.42
100	772.19	1.80	1.39	0.137	2.313	1.53
105	768.83	1.70	1.30	0.137	2.328	1.66
110	765.49	1.61	1.23	0.136	2.343	1.78
115	762.16	1.52	1.16	0.136	2.358	1.93
120	758.84	1.45	1.10	0.136	2.373	2.10
125	755.53	1.38	1.04	0.135	2.388	2.30
130	752.24	1.32	0.99	0.135	2.403	2.56
135	748.95	1.26	0.94	0.135	2.418	2.83
140	745.68	1.20	0.90	0.134	2.433	3.14
145	742.42	1.15	0.86	0.134	2.448	3.49

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150	739.16	1.11	0.82	0.134	2.463	3.85
155	735.93	1.07	0.79	0.133	2.478	4.30
160	732.70	1.03	0.75	0.133	2.493	4.73
165	729.48	0.99	0.72	0.132	2.508	5.20
170	726.28	0.96	0.70	0.132	2.524	5.81
175	723.09	0.93	0.67	0.132	2.539	6.41
180	719.91	0.90	0.65	0.131	2.554	7.14
185	716.74	0.87	0.62	0.131	2.569	7.91
190	713.58	0.84	0.60	0.131	2.584	8.76
195	710.44	0.82	0.58	0.130	2.599	9.74
200	707.31	0.80	0.56	0.130	2.614	10.75
205	704.19	0.78	0.55	0.130	2.629	12.00
210	701.08	0.76	0.53	0.129	2.644	13.19
215	697.99	0.74	0.51	0.129	2.659	14.52
220	694.91	0.72	0.50	0.129	2.674	16.21
225	691.84	0.70	0.49	0.128	2.690	17.91
230	688.78	0.69	0.47	0.128	2.705	19.92



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All products manufactured in the USA