Overview and applications

APPLICATION

StaticTherm HF-FG satisfies the need for a high flash point thermal fluid while meeting the stringent requirements of the food processing and related industries. With a maximum bulk temperature of 338°C (640°F) and a flash point of 276°C (530°F) StaticTherm HF-FG is ideally suited for the rigorous high temperature applications found in the food industry.

Please consult your equipment manufacturer or StaticTherm to ensure StaticTherm HF-FG is suitable for your system.

THE DIFFERENCE

Not only does StaticTherm HF-FG have one of the highest flash points available it also contains the industry's most effective and resilient blend of additives to ensure long-lasting, trouble free service.

Our exclusive system includes a proprietary, dual-stage anti-oxidant and a special blend of metal deactivators, extenders, and other agents that prolong fluid life and help keep systems clean. That also means longer life for parts like pumps and rotary seals.

LASTS LONGER

Oxidation can cripple your system. Left unchecked, it will ultimately cause catastrophic failure and

costly downtime. That's why StaticTherm HF-FG offers unsurpassed levels of protection against oxidation, and a service life that other fluids simply can't match.

RUNS CLEANER

StaticTherm HF-FG delivers superior resistance to sludging, a problem plaguing most other fluids. That makes it the best defense against extreme oxidation found in many of today's demanding manufacturing environments, including plastics processing, molding, casting, asphalt, paint, chemical and a wide variety of other applications.

ENVIRONMENTAL AND FOOD GRADE

StaticTherm HF-FG is environmentally friendly, nontoxic, non-hazardous and non-reportable. It meets the food grade requirements of FDA 21CFR1783570 and USDA H1.

It poses no ill effect to worker safety and does not require special handling. After its long service life, StaticTherm HF-FG heat transfer oil can easily be disposed of with other waste oils.

Engineered specifically to satisfy the needs of industry and insurance officials who recommend operating systems at temperatures below the heat transfer fluid's flash point. StaticTherm HF-FG has one of the industry's highest flash points at 276°C (530°F) and meets USDA requirements for incidental food contact, is NSF registered HT1, and meets the requirements of 21CFR1783570.

Ratings and physical properties

TEMPERATURE RATINGS

Maximum Bulk/Use Temp.	338°C	640°F
Maximum Film Temp.	360°C	680°F
Pour Point ASTM D97	-9°C	15°F

SAFETY DATA

Flash Point ASTM D92	276°C	530°F
Fire Point ASTM D92	305°C	582°F
Autoignition ASTM E-659-78	393°C	740°F

- Maximum temperature: 338°C / 640°F

- High Flash Point 276°C / 530°F

- Meets industry/insurance recommendations

- Fully additized for long, trouble-free operation

- Non-toxic/non-hazardous

- Includes free fluid analysis and tech support

The values quoted are typical of normal production. They do not constitute a specification.

THERMAL PROPERTIES

Thermal Expansion Coefficient	0.1011 %/°C	0.0562 %/°F
Thermal Conductivity	W/m K	BTU/hr F ft
38°C / 100°F	0.149	0.086
260°C / 500°F	0.145	0.084
316°C / 600°F	0.144	0.083
Heat Capacity	kJ/kg K	BTU/lb F
38°C / 100°F	1.874	0.448
260°C / 500°F	2.266	0.542
316°C / 600°F	2.367	0.565

PHYSICAL PROPERTIES

Appearance: colorless, clear and bright liquid		
Viscosity ASTM D445		
cSt at 40°C / 104°F	104.04	
cSt at 100°C / 212°F	12.45	
cSt at 316°C / 600°F	1.04	
Density ASTM D1298	kg/m3	lb/ft3
38°C / 100°F	858.98	53.63
260°C / 500°F	777.77	48.55
316°C / 600°F	757.28	47.29
Vapor Pressure ASTM D2879	kPa	psi
38°C / 100°F	0.00	0.00
260°C / 500°F	1.47	0.22
316°C / 600°F	12.29	1.74
Distillation Range ASTM D2887	10%	446°C (834°F)
	90%	554°C (1030°F)
Average Molecular Weight	399	

Temperature-dependent properties - metric

TEMPERATURE (Celsius)	DENSITY (kg/m^3)	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
15	867.39	471.34	408.84	0.149	1.834	0.00
25	863.74	241.15	208.29	0.149	1.851	0.00
35	860.08	135.05	116.15	0.149	1.869	0.00
45	856.42	81.55	69.84	0.149	1.886	0.00
55	852.76	52.44	44.72	0.149	1.904	0.00
65	849.10	35.56	30.19	0.148	1.921	0.00
75	845.44	25.21	21.32	0.148	1.939	0.00
85	841.79	18.57	15.63	0.148	1.956	0.00
95	838.13	14.12	11.84	0.148	1.974	0.00
105	834.47	11.04	9.22	0.148	1.992	0.00
115	830.81	8.84	7.35	0.147	2.009	0.00
125	827.16	7.23	5.98	0.147	2.027	0.00
135	823.50	6.02	4.95	0.147	2.045	0.00
145	819.84	5.09	4.17	0.147	2.062	0.00
155	816.18	4.36	3.56	0.147	2.080	0.00
165	812.52	3.78	3.07	0.147	2.098	0.03
175	808.86	3.31	2.68	0.146	2.115	0.07
185	805.21	2.93	2.36	0.146	2.133	0.07
195	801.55	2.62	2.10	0.146	2.151	0.13
205	797.89	2.36	1.88	0.146	2.168	0.19
215	794.23	2.13	1.70	0.146	2.186	0.27
225	790.58	1.95	1.54	0.145	2.204	0.39
235	786.92	1.78	1.40	0.145	2.222	0.57
245	783.26	1.64	1.29	0.145	2.240	0.83
255	779.60	1.52	1.19	0.145	2.257	1.22
265	775.94	1.42	1.10	0.145	2.275	1.78
275	772.28	1.32	1.02	0.145	2.293	2.58
285	768.63	1.24	0.95	0.144	2.311	3.75
295	764.97	1.17	0.89	0.144	2.329	5.50
305	761.31	1.10	0.84	0.144	2.347	8.04
315	757.65	1.04	0.79	0.144	2.365	11.73
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
338	749.44	0.93	0.70	0.144	2.407	36.82

The values quoted are typical of normal production. They do not constitute a specification.

Temperature-dependent properties - imperial

TEMPERATURE (Fahrenheit)	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
50	54.26	685.54	595.89	0.086	0.436	0.00
60	54.14	452.91	392.76	0.086	0.439	0.00
70	54.01	309.32	267.61	0.086	0.441	0.00
80	53.88	217.67	187.88	0.086	0.443	0.00
90	53.76	157.36	135.50	0.086	0.446	0.00
100	53.63	116.57	100.14	0.086	0.448	0.00
110	53.50	88.28	75.66	0.086	0.450	0.00
120	53.38	68.21	58.32	0.086	0.453	0.00
130	53.25	53.66	45.77	0.086	0.455	0.00
140	53.12	42.92	36.52	0.086	0.457	0.00
150	52.99	34.85	29.58	0.086	0.460	0.00
160	52.87	28.68	24.29	0.086	0.462	0.00
170	52.74	23.90	20.19	0.086	0.464	0.00
180	52.61	20.15	16.98	0.086	0.467	0.00
190	52.49	17.16	14.43	0.085	0.469	0.00
200	52.36	14.75	12.37	0.085	0.471	0.00
210	52.23	12.80	10.71	0.085	0.474	0.00
220	52.11	11.19	9.34	0.085	0.476	0.00
230	51.98	9.86	8.21	0.085	0.479	0.00
240	51.85	8.74	7.26	0.085	0.481	0.00
250	51.73	7.80	6.46	0.085	0.483	0.00
260	51.60	7.00	5.79	0.085	0.486	0.00
270	51.47	6.32	5.21	0.085	0.488	0.00
280	51.35	5.73	4.72	0.085	0.490	0.00
290	51.22	5.22	4.29	0.085	0.493	0.00
300	51.09	4.78	3.91	0.085	0.495	0.00
310	50.97	4.39	3.59	0.085	0.497	0.00
320	50.84	4.05	3.30	0.085	0.500	0.00
330	50.71	3.75	3.05	0.085	0.502	0.00
340	50.58	3.48	2.82	0.085	0.504	0.01
350	50.46	3.25	2.62	0.085	0.507	0.01
360	50.33	3.03	2.44	0.084	0.509	0.01
370	50.20	2.84	2.28	0.084	0.511	0.01
380	50.08	2.67	2.14	0.084	0.514	0.02
390	49.95	2.51	2.01	0.084	0.516	0.02
400	49.82	2.37	1.89	0.084	0.518	0.02
410	49.70	2.24	1.78	0.084	0.521	0.03
420	49.57	2.12	1.69	0.084	0.523	0.04
430	49.44	2.02	1.60	0.084	0.525	0.05
440	49.32	1.92	1.51	0.084	0.528	0.06
450	49.19	1.83	1.44	0.084	0.530	0.08
460	49.06	1.74	1.37	0.084	0.533	0.10
470	48.94	1.67	1.31	0.084	0.535	0.12
480	48.81	1.60	1.25	0.084	0.537	0.14
490	48.68	1.53	1.19	0.084	0.540	0.17
500	48.55	1.47	1.14	0.084	0.542	0.22
510	48.43	1.41	1.10	0.084	0.544	0.26
520	48.30	1.36	1.05	0.084	0.547	0.32
530	48.17	1.31	1.01	0.084	0.549	0.40
540	48.05	1.26	0.97	0.083	0.551	0.49
550	47.92	1.22	0.94	0.083	0.554	0.61
560	47.79	1.18	0.90	0.083	0.556	0.75
570	47.67	1.14	0.87	0.083	0.558	0.92
580	47.54	1.11	0.84	0.083	0.561	1.14
590	47.41	1.07	0.81	0.083	0.563	1.41
600	47.29	1.04	0.79	0.083	0.565	1.74
610	47.16	1.01	0.76	0.083	0.568	2.20
620	47.03	0.98	0.74	0.083	0.570	2.84
630	46.91	0.96	0.72	0.083	0.572	3.66
640	46.78	0.93	0.70	0.083	0.575	5.34

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