Overview and applications

APPLICATION

StaticTherm HTO-FG is engineered for many years of service and is ideal for a wide range of closed to atmosphere (inertly sealed) applications requiring a food grade rated thermal fluid.

StaticTherm HTO-FG meets USDA requirements for incidental food contact (H1) and meets the requirements of 21CFR1783570 and is NSF registered.

THE DIFFERENCE

StaticTherm HTO-FG's use of highly refined base stocks ensures excellent thermal stability. Its low volatility also minimizes vapor pressure at elevated temperatures and unlike most other fluids in its class, StaticTherm HTO-FG contains antioxidants*, metal deactivators and corrosion inhibitors to further enhance the fluid's longevity and help protect your system.

*For critical applications where high levels of oxidation are prevalent please consider StaticTherm FG.

ENVIRONMENTAL

StaticTherm HTO-FG is environmentally friendly, non-toxic, non-hazardous and non-reportable. StaticTherm HTO-FG poses no ill effect to worker safety.

DISPOSAL

After its long service life StaticTherm HTO-FG can easily be disposed of with other waste oils. StaticTherm supports recycling and encourages oil reclamation programs where possible.

SYSTEM CLEANING

If your existing fluid has let you down and left you with a system full of sludge or carbon, we've developed a full line of heat transfer system cleaners to get your system back to like-new condition. Contact us for complete details.

Rated for use up to 315°C (600°F) it's engineered and manufactured to comply with the demands of food grade applications ranging from food processing and packaging to pharmaceutical and more.

Ratings and physical properties

TEMPERATURE RATINGS

Maximum Bulk/Use Temp.	315°C	600°F
Maximum Film Temp.	332°C	630°F
Pour Point ASTM D97	-15°C	5°F

SAFETY DATA

Flash Point ASTM D92	207°C	425°F
Fire Point ASTM D92	223°C	448°F
Autoignition ASTM E-659-78	360°C	680°F

- Maximum temperature: 315°C / 600°F

- High flash point 207°C / 425°F

- Budget fluid for closed systems

- 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	0.0564 %/°F
Thermal Conductivity	W/m K	BTU/hr F ft
38°C / 100°F	0.136	0.079
260°C / 500°F	0.124	0.072
316°C / 600°F	0.121	0.070
Heat Capacity	kJ/kg K	BTU/lb F
38°C / 100°F	1.892	0.452
260°C / 500°F	2.587	0.618
316°C / 600°F	2.763	0.659

PHYSICAL PROPERTIES

Appearance: clear and bright liquid		
Viscosity ASTM D445		
cSt at 40°C / 104°F	39.35	
cSt at 100°C / 212°F	6.34	
cSt at 250°C / 482°F	1.05	
Density ASTM D1298	kg/m3	lb/ft3
38°C / 100°F	810.72	50.62
260°C / 500°F	667.33	41.66
316°C / 600°F	631.15	39.41
Vapor Pressure ASTM D2879	kPa	psi
38°C / 100°F	0.00	0.00
260°C / 500°F	2.33	0.34
316°C / 600°F	9.91	1.43
Distillation Range ASTM D2887	10%	372°C (702°F)
	90%	455°C (852°F)
Average Molecular Weight	371	

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	832.04	286.16	250.63	0.138	1.788	0.00
15	825.58	145.23	126.21	0.138	1.819	0.00
25	819.12	81.26	70.06	0.137	1.851	0.00
35	812.66	49.26	42.14	0.136	1.882	0.00
45	806.20	31.91	27.08	0.136	1.913	0.00
55	799.74	21.83	18.38	0.135	1.945	0.00
65	793.28	15.64	13.06	0.135	1.976	0.00
75	786.82	11.64	9.64	0.134	2.007	0.00
85	780.37	8.95	7.35	0.134	2.039	0.00
95	773.91	7.07	5.76	0.133	2.070	0.00
105	767.45	5.72	4.62	0.133	2.101	0.00
115	760.99	4.72	3.78	0.132	2.133	0.01
125	754.53	3.97	3.15	0.131	2.164	0.01
135	748.07	3.38	2.66	0.131	2.195	0.02
145	741.61	2.92	2.28	0.130	2.227	0.03
155	735.15	2.56	1.98	0.130	2.258	0.05
165	728.69	2.26	1.73	0.129	2.290	0.08
175	722.23	2.01	1.53	0.129	2.321	0.12
185	715.77	1.81	1.36	0.128	2.352	0.18
195	709.31	1.64	1.22	0.128	2.384	0.27
205	702.85	1.49	1.11	0.127	2.415	0.39
215	696.40	1.37	1.01	0.127	2.446	0.55
225	689.94	1.26	0.92	0.126	2.478	0.79
235	683.48	1.17	0.84	0.125	2.509	1.08
245	677.02	1.09	0.78	0.125	2.540	1.48
255	670.56	1.02	0.72	0.124	2.572	2.00
265	664.10	0.96	0.67	0.124	2.603	2.65
275	657.64	0.90	0.63	0.123	2.634	3.51
285	651.18	0.86	0.59	0.123	2.666	4.58
295	644.72	0.81	0.55	0.122	2.697	5.94
305	638.26	0.77	0.52	0.122	2.728	7.62
315	631.80	0.74	0.49	0.121	2.760	9.70

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)
15	52.53	947.59	839.77	0.080	0.416	0.00
25	52.30	577.58	509.67	0.080	0.420	0.00
35	52.08	367.94	323.29	0.080	0.425	0.00
45	51.85	243.80	213.30	0.080	0.429	0.00
55	51.63	167.32	145.75	0.080	0.433	0.00
65	51.41	118.49	102.77	0.079	0.437	0.00
75	51.18	86.31	74.53	0.079	0.441	0.00
85	50.96	64.47	55.43	0.079	0.445	0.00
95	50.73	49.26	42.17	0.079	0.450	0.00
105	50.51	38.41	32.74	0.079	0.454	0.00
115	50.29	30.51	25.89	0.078	0.458	0.00
125	50.06	24.64	20.81	0.078	0.462	0.00
135	49.84	20.20	16.98	0.078	0.466	0.00
145	49.61	16.78	14.05	0.078	0.470	0.00
155	49.39	14.12	11.76	0.078	0.474	0.00
165	49.17	12.01	9.96	0.078	0.479	0.00
175	48.94	10.32	8.52	0.077	0.483	0.00
185	48.72	8.95	7.35	0.077	0.487	0.00
195	48.49	7.83	6.40	0.077	0.491	0.00
205	48.27	6.90	5.62	0.077	0.495	0.00
215	48.05	6.12	4.96	0.077	0.499	0.00
225	47.82	5.47	4.42	0.077	0.504	0.00
235	47.60	4.92	3.95	0.076	0.508	0.00
245	47.37	4.45	3.55	0.076	0.512	0.00
255	47.15	4.04	3.21	0.076	0.516	0.00
265	46.93	3.69	2.92	0.076	0.520	0.00
275	46.70	3.38	2.67	0.076	0.524	0.00
285	46.48	3.11	2.44	0.076	0.529	0.00
295	46.25	2.88	2.25	0.075	0.533	0.01
305	46.03	2.67	2.07	0.075	0.537	0.01
315	45.81	2.48	1.92	0.075	0.541	0.01
325	45.58	2.32	1.78	0.075	0.545	0.01
335	45.36	2.17	1.66	0.075	0.549	0.02
345	45.13	2.04	1.55	0.075	0.553	0.02
355	44.91	1.92	1.45	0.074	0.558	0.02
365	44.69	1.81	1.36	0.074	0.562	0.03
375	44.46	1.71	1.28	0.074	0.566	0.03
385	44.24	1.62	1.21	0.074	0.570	0.04
395	44.01	1.54	1.14	0.074	0.574	0.05
405	43.79	1.47	1.08	0.074	0.578	0.06
415	43.57	1.40	1.03	0.073	0.583	0.08
425	43.34	1.33	0.98	0.073	0.587	0.09
435	43.12	1.28	0.93	0.073	0.591	0.11
445	42.89	1.22	0.88	0.073	0.595	0.13
455	42.67	1.17	0.84	0.073	0.599	0.16
465	42.45	1.13	0.81	0.073	0.603	0.19
475	42.22	1.08	0.77	0.072	0.607	0.23
485	42.00	1.04	0.74	0.072	0.612	0.26
495	41.77	1.01	0.71	0.072	0.616	0.31
505	41.55	0.97	0.68	0.072	0.620	0.36
515	41.33	0.94	0.66	0.072	0.624	0.43
525	41.10	0.91	0.63	0.072	0.628	0.49
535	40.88	0.88	0.61	0.071	0.632	0.57
545	40.65	0.86	0.59	0.071	0.637	0.67
555	40.43	0.83	0.57	0.071	0.641	0.77
565	40.21	0.81	0.55	0.071	0.645	0.89
575	39.98	0.79	0.53	0.071	0.649	1.02
585	39.76	0.76	0.51	0.071	0.653	1.16
595	39.53	0.74	0.50	0.070	0.657	1.34
600	39.44	0.74	0.49	0.070	0.659	1.41

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