



Relatherm
Heat Transfer Fluids

RELATHERM FG-1

Food Grade Heat Transfer Fluid



☎ 1-800-387-0406
✉ hello@relatherm.com
🌐 www.relatherm.com

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A premium engineered thermal fluid rated for use in food processing, food packaging and pharmaceutical applications where a high flash point has technical and commercial benefits. It is rated for use up to 344°C/644°F. Infused with the Relatherm Dual Stage Anti-Oxidation technology, this fluid is robustly resistant to oxidation and sludge formation. A non-toxic/non-hazardous, it provides a safer alternative in sanitary production environments.

PRODUCT SUMMARY

- Meets USDA and FDA requirements for incidental food contact (H1) as set out in 21CFR178.3570.
- Highest Flash Point in the industry: 277°C / 531°F.
- Maximum use temperature: 340°C / 644°F.
- Non-toxic and non-hazardous heat transfer fluid.
- Ultra-pure base chemistry.

WHY RELATHERM FG-1?

Relatherm FG-1 is manufactured from ultra-pure food-grade base fluids and the most advanced life-extending additive technology. In comparison with other industry fluids, it provides for a safer, cleaner, and thermally stable equipment operation. More specifically, Relatherm FG-1 features industry-leading two-stage anti-oxidation additive package and a complimentary mix of metal deactivators, rust inhibitors, defoamers, seal/gasket extenders and other proprietary agents. This superior formulation provides precise temperature control and efficient heat transfer much longer than many industry fluids.

LONGER FLUID LIFE

Relatherm FG-1 exhibits extended service life even in oxidation-prone systems. Its superior additive technology extends its usability under operating conditions at which other industry fluids would typically degrade.

MAXIMUM OXIDATION PROTECTION

By virtue of its Extended Life Additive Technology, Relatherm FG-1 greatly resists sludge formation in heat transfer systems and carbon deposition on heat transfer surfaces. It contains highly effective oxidation mitigants, making it the best choice for applications in food processing, food packaging and pharmaceutical processing. For these systems, Relatherm FG-1 may provide applicable discounts on facility insurance premiums. It also lowers maintenance costs, while offering longer uptime and less frequent fluid changeouts.

HEALTH, SAFETY & THE ENVIRONMENT

Relatherm FG-1 is non-toxic and non-hazardous. It is environmentally friendly and poses no adverse effect to personnel safety. There are no special handling procedures or disposal. After its long-service life, it can be disposed with other waste oils/lubricants in accordance with applicable statutes.

COMPREHENSIVE PRODUCT PORTFOLIO

If Relatherm FG-1 does not meet your application requirements, there is a very good chance that we will be able to offer a better suited solution from our comprehensive portfolio of thermal fluids and system cleaners. Contact us to discuss your application with a Thermal Fluids Expert.

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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

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

SAFETY DATA

Flash Point ASTM D92	277°C	531°F
Fire Point ASTM D92	305°C	582°F
Autoignition ASTM E-659-78	393°C	740°F

PHYSICAL PROPERTIES

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	



**Our ThermoFluid Care Program offers
Free Heat Transfer Fluid Testing & Analysis**

Contact us today

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Physical Properties - Metric Units

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	1027.33	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	823.5	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	2.1	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	2.24	0.83
255	779.60	1.52	1.19	0.145	2.257	1.22
265	775.94	1.42	1.1	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	1.1	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

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Physical Properties - Standard Units

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	53.5	88.28	75.66	0.086	0.45	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	0.46	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	12.8	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	7.8	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	0.49	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	1.1	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	0.4
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	2.2
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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