

THERMINOL®
from Eastman

THERMINOL® 62

heat transfer fluid

High-performance, low-pressure fluid

–23° to 325°C
(–9° to 620°F)



THERMINOL[®] 62

heat transfer fluid

Physical and chemical characteristics

Therminol 62 heat transfer fluid is designed for use in nonpressurized/low-pressure, indirect heating systems. It delivers efficient, dependable, uniform process heat with no need for high pressures. The high boiling point of Therminol 62 helps reduce the volatility and fluid leakage problems associated with other fluids.

The recommended bulk (325°C/620°F) and maximum film (355°C/670°F) temperatures for Therminol 62 are based on industry-standard thermal studies. Operation at or below these temperature maximums can provide long service life under most operating conditions.

Actual fluid life is dependent on the total system design and operation and can vary by heat transfer fluid chemistry. As fluid ages, the formation of low- and high-boiling compounds may result. Low-boiling compounds should be vented from the system as necessary to a safe location away from personnel and sources of ignition and in compliance with applicable regulations and laws. The high-boiling compounds can be very soluble in the fluid. Significant overheating or fluid contamination will accelerate decomposition and may result in increased high-boiler and solids concentrations. Excess solids can typically be filtered for removal.

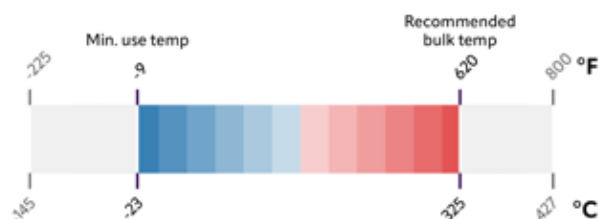
Eastman recommends that systems using Therminol 62 fluid be blanketed with an atmosphere of inert gas to protect against the effects of fluid oxidation on its performance and life expectancy. Pressure relief device(s) should be installed where required.

Therminol 62 is noncorrosive to metals commonly used in the construction of heat transfer systems.

While Therminol 62 has a relatively high flash point, it is not classified as a fire-resistant heat transfer fluid. Consequently, the use of protective devices may be required to minimize fire risk, and users of Therminol 62 should check with their safety and risk management experts for specific instructions.

Eastman Therminol 62 heat transfer fluid offers outstanding performance to 325°C (620°F), including excellent thermal stability and low vapor pressure. These properties result in reliable, consistent performance of heat transfer systems over long periods of time.

The performance of Therminol heat transfer fluids has been proven through many years of industrial experience under a wide range of operating conditions.



Typical properties^a

Appearance	Water-white liquid
Composition	Isopropyl biphenyl mixture
Recommended bulk temperature	325°C (620°F)
Maximum film temperature	355°C (670°F)
Normal boiling point	333°C (631°F)
Pumpability, at 300 mm ² /s (cSt)	-11°C (12°F)
Pumpability, at 2000 mm ² /s (cSt)	-23°C (-9°F)
Flash point, COC (ASTM D92)	171°C (340°F)
Flash point, PMCC (ASTM D93)	160°C (320°F)
Autoignition temperature (ASTM E659)	407°C (765°F)
Autoignition temperature (DIN 51794)	433°C (813°F)
Pour point (ASTM D97)	-42°C (-44°F)
Minimum liquid temperatures for fully developed turbulent flow ($N_{Re} > 10,000$)	
10 ft/s, 1-in. tube (3.048 m/s, 2.54-cm tube)	50°C (122°F)
20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)	31°C (88°F)
Minimum liquid temperatures for transitional region flow ($N_{Re} > 2,000$)	
10 ft/s, 1-in. tube (3.048 m/s, 2.54-cm tube)	11°C (52°F)
20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)	4°C (39°F)
Coefficient of thermal expansion at 200°C	0.00100/°C (0.000556/°F)
Heat of vaporization at maximum use temperature	263.9 kJ/kg (113.6 Btu/lb)
Total acidity (ASTM D664)	<0.2 mg KOH/g
Average molecular weight	252
Pseudocritical temperature	487°C (908°F)
Pseudocritical pressure	15.0 bar (217.5 psia)
Pseudocritical density	269.4 kg/m ³ (16.82 lb/ft ³)
Chlorine content, ppm (DIN 51577)	<10 ppm
Copper corrosion (ASTM D130)	<< 1a
Moisture content, maximum (ASTM E203)	200 ppm
Dielectric constant @ 23°C (ASTM D924)	2.53

^aThese data are based on samples tested in the laboratory and are not guaranteed for all samples. Contact us for complete sales specifications for Therminol 62 fluid. Does not constitute an express warranty. See disclaimer on the back page of this brochure.



To create your own customized table
with preferred properties, units of measure
and temperature intervals, visit
therminol.com/resources
and download the Therminol heat transfer fluid calculator.

Liquid properties of Therminol 62 heat transfer fluid by temperature^a (SI units)

Temperature		Liquid density	Liquid heat capacity	Heat of vaporization	Liquid enthalpy ^b	Liquid thermal conductivity	Liquid viscosity ^c		Vapor pressure ^d
°C	°F	kg/m ³	kJ/(kg·K)	kJ/kg	kJ/kg	W/(m·K)	cP (mPa·s)	cSt (mm ² /s)	kPa
-23	-9	985	1.82	488.8	30.8	0.1265	1,980	2,000	—
-20	-4	983	1.83	486.1	36.1	0.1263	1,80	1,210	—
-10	14	976	1.86	476.8	54.5	0.1254	284	291	—
0	32	969	1.89	467.7	73.3	0.1246	99.5	103	—
10	50	962	1.92	458.8	92.3	0.1238	45.2	470	—
20	68	955	1.94	450.1	111.6	0.1229	24.5	25.6	—
30	86	948	1.97	441.5	131.2	0.1221	15.0	15.8	—
40	104	940	2.00	433.1	151.0	0.1212	10.1	10.7	—
50	122	933	2.02	424.8	171.1	0.1203	718	769	0.003
60	140	926	2.05	416.8	191.5	0.1195	5.38	5.81	0.005
70	158	919	2.07	408.9	212.1	0.1186	4.17	4.54	0.010
80	176	912	2.10	401.2	232.9	0.1177	3.33	3.66	0.018
90	194	904	2.12	393.7	254.0	0.1168	2.72	3.01	0.032
100	212	897	2.14	386.4	275.3	0.1158	2.26	2.52	0.056
110	230	890	2.17	379.3	296.9	0.1149	1.90	2.14	0.093
120	248	882	2.19	372.3	318.7	0.1140	1.62	1.84	0.151
130	266	875	2.21	365.5	340.7	0.1130	1.39	1.59	0.240
140	284	867	2.23	358.9	362.9	0.1120	1.21	1.39	0.372
150	302	859	2.26	352.4	385.4	0.1111	1.06	1.23	0.564
160	320	852	2.28	346.2	408.0	0.1101	0.931	1.09	0.841
170	338	844	2.30	340.1	430.9	0.1091	0.824	0.976	1.23
180	356	836	2.32	334.2	453.9	0.1080	0.733	0.877	1.77
190	374	828	2.34	328.4	477.2	0.1070	0.655	0.791	2.50
200	392	820	2.36	322.8	500.7	0.1059	0.588	0.718	3.49
210	410	812	2.37	317.4	524.3	0.1048	0.530	0.653	4.80
220	428	803	2.39	312.1	548.2	0.1037	0.480	0.597	6.51
230	446	795	2.41	307.0	572.2	0.1026	0.435	0.548	8.73
240	464	786	2.43	302.0	596.4	0.1014	0.396	0.504	11.6
250	482	777	2.45	297.2	620.8	0.1002	0.362	0.466	15.2
260	500	768	2.46	292.5	645.3	0.0990	0.332	0.432	19.7
270	518	759	2.48	287.9	670.1	0.0978	0.304	0.401	25.3
280	536	750	2.50	283.5	695.0	0.0965	0.280	0.374	32.2
290	554	740	2.52	279.1	720.0	0.0951	0.258	0.349	40.7
300	572	730	2.53	274.9	745.3	0.0937	0.239	0.327	50.9
310	590	720	2.55	270.7	770.7	0.0922	0.221	0.307	63.3
320	608	710	2.57	266.6	796.3	0.0907	0.206	0.289	78.0
330	626	699	2.59	262.6	822.1	0.0890	0.191	0.273	95.5
340	644	688	2.61	258.6	848.1	0.0873	0.178	0.259	116

^aRecommended bulk temperature 325°C (620°F). These data are based on samples tested in the laboratory and are not guaranteed for all samples.
Contact us for complete sales specifications for Therminol 62. ^bLiquid enthalpy basis is -40°C (-40°F). ^c1 cSt = 1 mm²/s and 1 mPa·s = 1 cP. ^d100 kPa = 1 bar.

Liquid properties of Therminol 62 heat transfer fluid by temperature^a (English units)

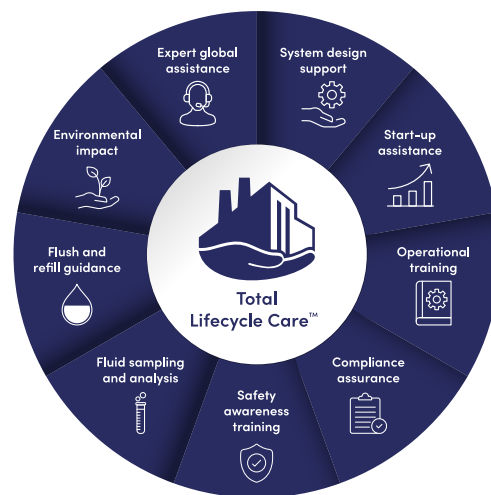
Temperature		Liquid density		Liquid heat capacity	Heat of vaporization	Liquid enthalpy ^b	Liquid thermal conductivity	Liquid viscosity ^c		Vapor pressure ^d
°F	°C	lb/gal	lb/ft ³	Btu/(lb·°F)	Btu/lb	Btu/lb	Btu/(ft·h·°F)	lb/(ft·h)	cSt (mm ² /s)	psia
-9	-23	8.22	61.5	0.436	210.3	13.2	0.0731	4,770	2,000	—
0	-18	8.19	61.3	0.439	208.2	17.3	0.0729	2,000	843	—
20	-7	8.12	60.8	0.447	203.8	26.1	0.0724	467	198	—
40	4	8.06	60.3	0.454	199.5	35.1	0.0718	165	70.7	—
60	16	7.99	59.8	0.462	195.3	44.3	0.0713	76.3	33.0	—
80	27	7.93	59.3	0.469	191.1	53.6	0.0707	42.2	18.4	—
100	38	7.86	58.8	0.476	187.1	63.1	0.0702	26.4	11.6	—
120	49	7.80	58.3	0.483	183.2	72.6	0.0696	18.0	7.96	0.0004
140	60	7.73	57.8	0.489	179.3	82.4	0.0691	13.0	5.81	0.0008
160	71	7.66	57.3	0.496	175.6	92.2	0.0685	9.84	4.43	0.0015
180	82	7.59	56.8	0.502	171.9	102.2	0.0679	7.69	3.49	0.0030
200	93	7.53	56.3	0.509	168.3	112.3	0.0673	6.17	2.83	0.0056
220	104	7.46	55.8	0.515	164.9	122.6	0.0667	5.05	2.34	0.010
240	116	7.39	55.3	0.521	161.5	132.9	0.0661	4.20	1.96	0.018
260	127	7.32	54.8	0.527	158.2	143.4	0.0655	3.54	1.67	0.030
280	138	7.25	54.2	0.533	155.0	154.0	0.0649	3.02	1.44	0.049
300	149	7.18	53.7	0.538	151.9	164.7	0.0643	2.60	1.25	0.078
320	160	7.11	53.2	0.544	148.9	175.5	0.0636	2.25	1.09	0.122
340	171	7.03	52.6	0.549	146.0	186.5	0.0630	1.97	0.964	0.186
360	182	6.96	52.1	0.555	143.2	197.5	0.0623	1.73	0.857	0.277
380	193	6.89	51.5	0.560	140.5	208.7	0.0617	1.53	0.766	0.406
400	204	6.81	50.9	0.565	137.8	219.9	0.0610	1.36	0.688	0.584
420	216	6.73	50.4	0.570	135.3	231.3	0.0603	1.21	0.621	0.826
440	227	6.66	49.8	0.575	132.8	242.7	0.0595	1.09	0.564	1.15
460	238	6.58	49.2	0.580	130.4	254.2	0.0588	0.979	0.514	1.58
480	249	6.49	48.6	0.584	128.1	265.9	0.0580	0.885	0.470	2.14
500	260	6.41	48.0	0.589	125.8	277.6	0.0572	0.802	0.432	2.86
520	271	6.33	47.3	0.594	123.6	289.5	0.0564	0.730	0.398	3.77
540	282	6.24	46.7	0.598	121.5	301.4	0.0556	0.666	0.368	4.92
560	293	6.15	46.0	0.603	119.5	313.4	0.0547	0.609	0.342	6.36
580	304	6.06	45.3	0.608	117.5	325.5	0.0538	0.559	0.318	8.14
600	316	5.96	44.6	0.612	115.5	337.7	0.0528	0.514	0.297	10.3
620	327	5.87	43.9	0.617	113.6	350.0	0.0518	0.474	0.279	13.0
640	338	5.76	43.1	0.622	111.6	362.4	0.0507	0.438	0.262	16.1

^aRecommended bulk temperature 325°C (620°F). These data are based on samples tested in the laboratory and are not guaranteed for all samples. Contact us for complete sales specifications for Therminol 62. ^bLiquid enthalpy basis is -40°C (-40°F). ^c1 cSt = 1 mm²/s and 1 mPa·s = 1 cP. ^d100 kPa = 1 bar.

Total Lifecycle Care™

Total Lifecycle Care is a comprehensive service that uses analytics, sampling, and training to prevent heat transfer system failures, ensuring safe, efficient, and uninterrupted operations.

- Offers industry-leading technical support
- Provides data through Fluid Genius™ for informed decision-making
- Helps minimize unexpected downtime and maintenance costs
- Assists in maximizing fluid life
- Enables safe working environments through tailored safety training
- Helps keep systems running smoothly



Comprehensive support services

- **In-service heat transfer fluid sample analysis**

Eastman provides comprehensive testing services to extend heat transfer fluid life and ensure system performance by detecting contamination, moisture and degradation through key tests like acid number, viscosity, insoluble solids and moisture content.



- **Fluid Genius™**

Fluid Genius is a web-based portal and sampling service that simplifies fluid sample management by providing expert analysis, fluid condition monitoring, lifespan prediction, early maintenance alerts, technical support and access to a comprehensive knowledge base. Learn more at fluidgenius.net.



Operational efficiency

- **System design support**

Eastman collaborates with leading manufacturers to provide expert support in heat transfer system design, performance, fluid selection, and compliance, offering seminars, technical visits, and on-site audits to improve system reliability and efficiency.



- **Start-up assistance**

Eastman offers start-up assistance by reviewing procedures and recommending improvements to streamline systems and reduce common issues, with support available from local technical specialists or on-site visits.



- **Flush and refill guidance**

Therminol FF is specially formulated to clean liquid-phase heat transfer systems. After flushing with Therminol FF, refill the system with the appropriate Eastman heat transfer fluid to ensure optimal performance. Contact your local Eastman technical specialist to learn more and get expert guidance.



- **Compliance support**

Our team provides guidance to help you achieve and maintain regulatory compliance related to safety, health and environmental standards, ensuring your operations meet the necessary requirements.



- **Environmental impact**

Eastman supports your sustainability goals by advising on waste heat recovery and water-lean utility deployments using Therminol products to reduce CO₂ emissions and water consumption.



Operational and safety awareness training

- **Operational training**

Eastman's customized training programs improve expertise in fluid selection and heat transfer system operation for technicians, supervisors, maintenance staff and engineers through core and specialized sessions to enhance design, improve safety and reduce costs.



- **Safety awareness training**

At Eastman, we approach safety with a zero-incident mindset. We offer our customers safety awareness training that focuses on the design start-up, operation and maintenance of heat transfer fluid systems to help ensure safe, efficient operations.



- **Expert global assistance**

Get direct access to experienced technical service specialists who can help answer questions regarding heat transfer fluid selection, system start-ups, system design and operational issues.



For more information, visit therminol.com.

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