ULTRATHERM LT

734-855-4890
www.USALAB.com

Engineered for long-term operation in heat transfer applications requiring precise temperature control ranging from **-84°C (-120°F)** up to **177°C (350°F)**. Ideal for near-cryogenic and wide-range heating/cooling across food processing, pharmaceutical, chemical, and botanical extraction industries.

APPLICATION

Ultratherm LT is a liquid phase heat transfer fluid with outstanding heating and cooling capabilities throughout a wide temperature range. Working range as low as -84°C with most efficient heat transfer between -60°C and 177°C. Can also be used as a secondary coolant in refrigeration loops where a wide-ranging fluid is required.

TROUBLE-FREE OPERATION

Ultratherm LT does not require monitoring of concentration or additive levels.

ENVIRONMENTAL

Ultratherm LT is plant and user friendly. Low odors, high flash point and no SARA reportable substances makes it the wise choice for worker health and safety.

DISPOSAL

After its extensive service life, **Ultratherm LT** can typically be disposed of through local waste oil recycling programs. Check your local regulations.

KEY FEATURES

- Maximum temperature: 177°C / 350°F
- Minimum temperature: -84°C / -120°F
- Flash point: 63°C / 145°F
- Extreme low-temperature capabilities
- Stable and non-corrosive
- Properties remain consistent over temperature range
- Includes free fluid analysis and tech support

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TEMPERATURE RATINGS

Parameter	°C	°F
Maximum Bulk/Use Temp.	177°C	350°F
Minimum Bulk/Use Temp.	-84°C	-120°F
Maximum Film Temp.	204°C	400°F
Pour Point (ASTM D97)	-90°C	-130°F

SAFETY DATA

Parameter	°C	°F
Flash Point (ASTM D93)	63°C	145°F
Fire Point (ASTM D92)	70°C	158°F
Autoignition (ASTM E-659-78)	275°C	527°F

THERMAL PROPERTIES

Property	Temperature	Metric	Imperial
Thermal Conductivity (W/m K)	-84°C / -120°F	0.124	0.072
	-40°C / -40°F	0.119	0.069
	0°C / 32°F	0.116	0.067
	65°C / 150°F	0.102	0.059
Heat Capacity (kJ/kg K)	-84°C / -120°F	1.695	0.405
	-40°C / -40°F	1.863	0.445
	0°C / 32°F	1.946	0.465
	65°C / 150°F	2.277	0.544

PHYSICAL PROPERTIES

Appearance: clear liquid, slight yellow tint

Property	Temperature	Metric	Imperial
Viscosity (ASTM D445, cSt)	-84°C / -120°F	392	—
	-40°C / -40°F	8.68	—
	-18°C / 0°F	3.78	—

Property	Temperature	Metric	Imperial
	0°C / 32°F	2.41	—
	65°C / 150°F	0.90	—
Density (ASTM D1298)	-84°C / -120°F	842.09 kg/m³	52.57 lb/ft³
	-40°C / -40°F	811.01 kg/m³	50.63 lb/ft³
	0°C / 32°F	796.75 kg/m³	49.74 lb/ft³
	65°C / 150°F	744.21 kg/m³	46.46 lb/ft³
Vapor Pressure (ASTM D2879)	-84°C / -120°F	0.00 kPa	0.000 psi
	15°C / 60°F	0.00 kPa	0.000 psi
	38°C / 100°F	0.22 kPa	0.032 psi
	65°C / 150°F	1.19 kPa	0.173 psi
	176°C / 350°F	69.22 kPa	10.04 psi
Normal Boiling Point	—	195°C	383°F

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

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PROPERTY VS. TEMPERATURE — METRIC

Temp (°C)	Density (kg/m³)	Viscosity (cSt)	Therm. Cond. (W/m-K)	Heat Cap. (kJ/kg-K)	Vapor Press. (kPa)
-94	848.57	2059.20	0.126	1.662	—
-90	846.55	967.23	0.125	1.682	—
-80	839.49	210.87	0.124	1.712	—
-70	832.43	67.62	0.123	1.752	—
-60	825.36	28.61	0.121	1.792	—
-50	818.30	14.65	0.120	1.822	—
-40	812.25	8.68	0.119	1.862	—
-30	805.18	5.70	0.117	1.902	—
-20	798.12	4.05	0.116	1.942	0.001
-10	791.06	3.05	0.115	1.982	0.004
0	783.99	2.41	0.113	2.022	0.011
10	776.93	1.96	0.112	2.052	0.027
20	768.86	1.63	0.110	2.092	0.061
30	761.80	1.40	0.109	2.132	0.130
40	754.73	1.22	0.107	2.172	0.256
50	747.67	1.07	0.105	2.212	0.479
60	739.60	0.95	0.104	2.252	0.850
70	732.53	0.85	0.102	2.292	1.445
80	724.46	0.77	0.100	2.332	2.366
90	716.39	0.70	0.098	2.372	3.732
100	709.33	0.64	0.097	2.412	5.702
110	701.25	0.59	0.095	2.452	8.484
120	693.18	0.54	0.093	2.503	12.276
130	684.10	0.50	0.091	2.543	17.424
140	676.03	0.47	0.089	2.583	24.156
150	666.95	0.43	0.087	2.623	32.868
160	658.88	0.40	0.085	2.673	43.857
170	649.80	0.38	0.083	2.713	57.717

Temp (°C)	Density (kg/m³)	Viscosity (cSt)	Therm. Cond. (W/m-K)	Heat Cap. (kJ/kg-K)	Vapor Press. (kPa)
180	640.72	0.35	0.081	2.753	74.745

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PROPERTY VS. TEMPERATURE — STANDARD (IMPERIAL)

Temp (°F)	Density (lb/ft³)	Viscosity (cSt)	Therm. Cond. (BTU/ft·h·°F)	Heat Cap. (BTU/lb·°F)	Vapor Press. (psia)
-137	52.97	2059.20	0.073	0.397	—
-120	52.57	392.04	0.072	0.405	—
-100	52.06	95.34	0.071	0.415	—
-80	51.66	33.96	0.070	0.425	—
-60	51.16	15.64	0.070	0.435	—
-40	50.65	8.68	0.069	0.445	—
-20	50.15	5.47	0.068	0.455	—
0	49.74	3.78	0.067	0.465	0.000
20	49.24	2.80	0.066	0.475	0.001
40	48.73	2.19	0.065	0.486	0.002
60	48.23	1.76	0.064	0.496	0.006
80	47.73	1.48	0.063	0.507	0.015
100	47.22	1.25	0.062	0.518	0.032
120	46.72	1.09	0.061	0.528	0.065
140	46.21	0.95	0.060	0.539	0.124
160	45.71	0.84	0.059	0.550	0.222
180	45.10	0.76	0.058	0.560	0.380
200	44.60	0.68	0.057	0.571	0.626
220	43.99	0.62	0.055	0.582	0.990
240	43.49	0.56	0.054	0.593	1.515
260	42.88	0.52	0.053	0.604	2.257
280	42.28	0.48	0.052	0.615	3.257
300	41.77	0.44	0.051	0.627	4.604
320	41.07	0.40	0.049	0.638	6.366
340	40.46	0.38	0.048	0.650	8.613
360	39.86	0.35	0.047	0.661	11.484

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