



# DURATHERM 600

An oxidative and thermally stable heat transfer fluid (thermal oil) rated to 315°C (600°F). Long lasting and environmentally friendly it offers precise temperature control at an economical cost.

## APPLICATION

Duratherm 600 is engineered for precise and efficient temperature control up to 315°C (600°F). With a high flash point, low vapor pressure and an initial boiling point above the maximum operating temperature Duratherm 600 offers safety and performance for many diverse applications.

## THE DIFFERENCE

Duratherm 600 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

In the heat transfer fluid industry cost is always a concern, however fluid longevity and resistance to harmful fouling are of equal importance. Air contact is normally detrimental to a fluid. Oxidation can cripple your system and if left unchecked will ultimately cause catastrophic failure. Unscheduled downtime due to oil failure has a high cost and negative effect on production.

Most other fluids fall short in their protection from oxidation and can quickly foul a system. Duratherm 600 is engineered to give unsurpassed levels of protection and service life.

## RUNS CLEANER

Duratherm 600 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

Duratherm 600 is environmentally friendly, non-toxic, non-hazardous and non-reportable. It poses no ill effect to worker safety and does not require special handling. After its long service life, Duratherm 600 thermal oil can easily be disposed of with other waste oils.

## 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.

# DURATHERM 600

- Maximum temperature: 315°C / 600°F
- Flash point 224°C / 435°F
- Non-toxic/non-hazardous
- Runs longer, keeps systems cleaner
- Extreme oxidation resistance
- Ideal for systems open to atmosphere
- Includes free fluid analysis and tech support



[www.DurathermCanada.ca](http://www.DurathermCanada.ca)

## TEMPERATURE RATINGS

Maximum Bulk/Use Temp.	315°C	600°F
Maximum Film Temp.	343°C	650°F
Pour Point ASTM D97	-10°C	14°F

## SAFETY DATA

Flash Point ASTM D92	224°C	435°F
Fire Point ASTM D92	240°C	464°F
Autoignition ASTM E-659-78	360°C	680°F

## 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	0.080
260°C / 500°F	0.124	0.074
316°C / 600°F	0.121	0.072
Heat Capacity	kJ/kg K	BTU/lb F
38°C / 100°F	1.892	0.461
260°C / 500°F	2.587	0.631
316°C / 600°F	2.763	0.673

## PHYSICAL PROPERTIES

Appearance: colorless, 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 316°C / 600°F	0.75	
Density ASTM D1298	kg/m <sup>3</sup>	lb/ft <sup>3</sup>
38°C / 100°F	827.79	51.69
260°C / 500°F	681.38	42.54
316°C / 600°F	644.44	40.25
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	9.71	1.43
Distillation Range ASTM D2887	10%	373°C (705°F)
	90%	481°C (898°F)
Average Molecular Weight	372	

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

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## PROPERTY VS. TEMPERATURE CHART METRIC

TEMPERATURE (Celsius)	DENSITY (kg/m <sup>3</sup> )	KINEMATIC VISCOSITY (Centistoke)	DYNAMIC VISCOSITY (Centipoise)	THERMAL CONDUCTIVITY (W/m-K)	HEAT CAPACITY (kJ/kg-K)	VAPOR PRESSURE (kPa)
-5	856.15	635.34	560.77	0.139	1.757	0.00
5	849.56	286.16	250.63	0.138	1.788	0.00
15	842.96	145.23	126.21	0.138	1.819	0.00
25	836.37	81.26	70.06	0.137	1.851	0.00
35	829.77	49.26	42.14	0.136	1.882	0.00
45	823.18	31.91	27.08	0.136	1.913	0.00
55	816.58	21.83	18.38	0.135	1.945	0.00
65	809.98	15.64	13.06	0.135	1.976	0.00
75	803.39	11.64	9.64	0.134	2.007	0.00
85	796.79	8.95	7.35	0.134	2.039	0.00
95	790.20	7.07	5.76	0.133	2.070	0.00
105	783.60	5.72	4.62	0.133	2.101	0.00
115	777.01	4.72	3.78	0.132	2.133	0.01
125	770.41	3.97	3.15	0.131	2.164	0.01
135	763.82	3.38	2.66	0.131	2.195	0.02
145	757.22	2.92	2.28	0.130	2.227	0.03
155	750.63	2.56	1.98	0.130	2.258	0.05
165	744.03	2.26	1.73	0.129	2.290	0.08
175	737.44	2.01	1.53	0.129	2.321	0.12
185	730.84	1.81	1.36	0.128	2.352	0.18
195	724.25	1.64	1.22	0.128	2.384	0.27
205	717.65	1.49	1.11	0.127	2.415	0.39
215	711.06	1.37	1.01	0.127	2.446	0.55
225	704.46	1.26	0.92	0.126	2.478	0.79
235	697.87	1.17	0.84	0.125	2.509	1.08
245	691.27	1.09	0.78	0.125	2.540	1.48
255	684.68	1.02	0.72	0.124	2.572	2.00
265	678.08	0.96	0.67	0.124	2.603	2.65
275	671.49	0.90	0.63	0.123	2.634	3.51
285	664.89	0.86	0.59	0.123	2.666	4.58
295	658.29	0.81	0.55	0.122	2.697	5.94
305	651.70	0.77	0.52	0.122	2.728	7.62
315	645.10	0.74	0.49	0.121	2.760	9.70

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They do not constitute a specification.

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## PROPERTY VS. TEMPERATURE CHART STANDARD

TEMPERATURE (Fahrenheit)	DENSITY (lb/ft <sup>3</sup> )	KINEMATIC VISCOSITY (Centistoke)	DYNAMIC VISCOSITY (Centipoise)	THERMAL CONDUCTIVITY (BTU/hr-F-ft)	HEAT CAPACITY (BTU/lb-F)	VAPOR PRESSURE (Psia)
15	53.63	967.96	857.83	0.082	0.425	0.00
25	53.40	590.00	520.64	0.082	0.429	0.00
35	53.17	375.85	330.25	0.082	0.434	0.00
45	52.95	249.04	217.88	0.081	0.438	0.00
55	52.72	170.92	148.89	0.081	0.442	0.00
65	52.49	121.04	104.98	0.081	0.446	0.00
75	52.26	88.16	76.13	0.081	0.450	0.00
85	52.03	65.86	56.62	0.081	0.455	0.00
95	51.80	50.32	43.07	0.080	0.459	0.00
105	51.57	39.24	33.44	0.080	0.463	0.00
115	51.35	31.17	26.44	0.080	0.467	0.00
125	51.12	25.17	21.26	0.080	0.472	0.00
135	50.89	20.63	17.35	0.080	0.476	0.00
145	50.66	17.14	14.35	0.080	0.480	0.00
155	50.43	14.42	12.02	0.079	0.484	0.00
165	50.20	12.26	10.17	0.079	0.489	0.00
175	49.97	10.54	8.70	0.079	0.493	0.00
185	49.74	9.14	7.51	0.079	0.497	0.00
195	49.52	7.99	6.54	0.079	0.501	0.00
205	49.29	7.05	5.74	0.079	0.506	0.00
215	49.06	6.26	5.07	0.078	0.510	0.00
225	48.83	5.59	4.51	0.078	0.514	0.00
235	48.60	5.03	4.04	0.078	0.518	0.00
245	48.37	4.54	3.63	0.078	0.523	0.00
255	48.14	4.13	3.28	0.078	0.527	0.00
265	47.91	3.77	2.98	0.078	0.531	0.00
275	47.69	3.45	2.72	0.077	0.535	0.00
285	47.46	3.18	2.49	0.077	0.540	0.00
295	47.23	2.94	2.29	0.077	0.544	0.01
305	47.00	2.73	2.12	0.077	0.548	0.01
315	46.77	2.54	1.96	0.077	0.552	0.01
325	46.54	2.37	1.82	0.077	0.557	0.01
335	46.31	2.22	1.70	0.076	0.561	0.02
345	46.08	2.08	1.59	0.076	0.565	0.02
355	45.86	1.96	1.48	0.076	0.569	0.02
365	45.63	1.85	1.39	0.076	0.574	0.03
375	45.40	1.75	1.31	0.076	0.578	0.03
385	45.17	1.66	1.24	0.075	0.582	0.04
395	44.94	1.57	1.17	0.075	0.586	0.05
405	44.71	1.50	1.11	0.075	0.591	0.06
415	44.48	1.43	1.05	0.075	0.595	0.08
425	44.25	1.36	1.00	0.075	0.599	0.09
435	44.03	1.30	0.95	0.075	0.603	0.11
445	43.80	1.25	0.90	0.074	0.608	0.13
455	43.57	1.20	0.86	0.074	0.612	0.16
465	43.34	1.15	0.82	0.074	0.616	0.19
475	43.11	1.11	0.79	0.074	0.620	0.23
485	42.88	1.07	0.76	0.074	0.625	0.26
495	42.65	1.03	0.73	0.074	0.629	0.31
505	42.42	0.99	0.70	0.073	0.633	0.36
515	42.20	0.96	0.67	0.073	0.637	0.43
525	41.97	0.93	0.64	0.073	0.641	0.49
535	41.74	0.90	0.62	0.073	0.646	0.57
545	41.51	0.87	0.60	0.073	0.650	0.67
555	41.28	0.85	0.58	0.073	0.654	0.77
565	41.05	0.82	0.56	0.072	0.658	0.89
575	40.82	0.80	0.54	0.072	0.663	1.02
585	40.59	0.78	0.52	0.072	0.667	1.16
595	40.37	0.76	0.51	0.072	0.671	1.34
600	40.25	0.75	0.50	0.072	0.673	1.43

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