DURATHERM
Heat Transfer Fluids

DURATHERM 630

A high performance, efficient and environmentally friendly thermal fluid engineered for applications requiring high temperature stability to 332°C (630°F). Offering precise temperature control it's a great alternative to aromatic/synthetic fluids, at a fraction of the cost.

It is ideal for a wide range of applications including, high temperature batch processing, chemical reactions, pharmaceutical and resin manufacturing among others.

APPLICATION

Duratherm 630 is a high performance, efficient and environmentally friendly fluid engineered for applications requiring high temperature stability to 332°C (630°F). Offering precise temperature control it's a great alternative to high temperature aromatic fluids, at a fraction of the cost.

It is ideal for a wide range of applications including, high temperature batch processing, chemical reactions, pharmaceutical and resin manufacturing among others.

THE DIFFERENCE

Our exclusive additive package, including a proprietary dual stage anti-oxidant, ensures long trouble free operation. **Duratherm 630** also incorporates metal deactivators, a seal and gasket extender, de-foaming and particle suspension agents.

LASTS LONGER

Oxidation can cripple your system. Left unchecked, it will ultimately cause catastrophic failure and costly downtime. That's why **Duratherm 630** offers unsurpassed levels of protection against oxidation, and a service life that other fluids simply can't match.

RUNS CLEANER

Duratherm 630 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.

ENVIRONMENTAL

Duratherm 630 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 630** 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.

www.durathermfluids.com.au

DURATHERM 630

- Maximum temperature: 332°C / 630°F
- Flash point 229°C / 444°F
- Alternative to chemical aromatic fluids
- Non-toxic/non-hazardous
- Includes free fluid analysis and tech support

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TEMPERATURE RATINGS

Maximum Bulk/Use Temp.	332°C	630°F
Maximum Film Temp.	354°C	670°F
Pour Point ASTM D97	-18°C	-1°F

SAFETY DATA

Flash Point ASTM D92	229°C	444°F
Fire Point ASTM D92	244°C	472°F
Autoignition ASTM E-659-78	368°C	693°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	0.143	0.083
260°C / 500°F	0.131	0.076
316°C / 600°F	0.128	0.074
332°C / 630°F	0.127	0.073
Heat Capacity	kJ/kg K	BTU/lb F
38°C / 100°F	1.991	0.475
260°C / 500°F	2.724	0.650
316°C / 600°F	2.908	0.694
332°C / 630°F	2.962	0.707

PHYSICAL PROPERTIES

Appearance: colorless, clear and bright liquid		
Viscosity ASTM D445		
cSt at 40°C / 104°F	42.31	
cSt at 100°C / 212°F	6.82	
cSt at 316°C / 600°F	0.79	
cSt at 332°C / 630°F	0.74	
Density ASTM D1298	kg/m3	lb/ft3
38°C / 100°F	853.39	53.29
260°C / 500°F	702.45	43.85
316°C / 600°F	665.74	41.50
332°C / 630°F	652.5	40.79
Vapor Pressure ASTM D2879	kPa	psi
38°C / 100°F	0.00	0.00
260°C / 500°F	2.28	0.33
316°C / 600°F	9.75	1.40
332°C / 630°F	14.2	2.04
Distillation Range ASTM D2887	10%	383°C (721°F)
	90%	494°C (921°F)
Average Molecular Weight	395	

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

DURATHERM 630

PROPERTY VS. TEMPERATURE CHART
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	882.63	683.16	602.98	0.146	1.849	0.00
5	875.83	307.70	269.49	0.145	1.882	0.00
15	869.03	156.16	135.71	0.145	1.915	0.00
25	862.23	87.38	75.34	0.144	1.948	0.00
35	855.43	52.97	45.31	0.144	1.981	0.00
45	848.63	34.31	29.11	0.143	2.014	0.00
55	841.84	23.47	19.76	0.142	2.047	0.00
65	835.04	16.81	14.04	0.142	2.080	0.00
75	828.24	12.51	10.37	0.141	2.113	0.00
85	821.44	9.62	7.90	0.141	2.146	0.00
95	814.64	7.60	6.19	0.140	2.179	0.00
105	807.84	6.15	4.97	0.140	2.212	0.00
115	801.04	5.08	4.07	0.139	2.245	0.01
125	794.24	4.26	3.39	0.138	2.278	0.01
135	787.44	3.64	2.86	0.138	2.311	0.02
145	780.64	3.14	2.45	0.137	2.344	0.03
155	773.84	2.75	2.13	0.137	2.377	0.05
165	767.04	2.43	1.86	0.136	2.410	0.08
175	760.24	2.16	1.65	0.135	2.443	0.12
185	753.45	1.95	1.47	0.135	2.476	0.18
195	746.65	1.76	1.32	0.134	2.509	0.26
205	739.85	1.61	1.19	0.134	2.542	0.38
215	733.05	1.47	1.08	0.133	2.575	0.54
225	726.25	1.36	0.99	0.133	2.608	0.77
235	719.45	1.26	0.91	0.132	2.641	1.06
245	712.65	1.17	0.84	0.132	2.674	1.45
255	705.85	1.10	0.78	0.131	2.707	1.96
265	699.05	1.03	0.72	0.130	2.740	2.60
275	692.25	0.97	0.67	0.130	2.773	3.44
285	685.45	0.92	0.63	0.129	2.806	4.49
295	678.65	0.87	0.59	0.129	2.839	5.82
305	671.86	0.83	0.56	0.128	2.872	7.47
315	665.06	0.79	0.53	0.128	2.905	9.51
325	658.26	0.76	0.50	0.127	2.938	12.00
332	653.39	0.74	0.48	0.126	2.960	15.03

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DURATHERM 630

PROPERTY VS. TEMPERATURE CHART
STANDARD

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	55.29	1018.91	902.98	0.084	0.438	0.00
25	55.06	621.05	548.04	0.084	0.443	0.00
35	54.82	395.64	347.63	0.084	0.447	0.00
45	54.58	262.15	229.35	0.084	0.451	0.00
55	54.35	179.91	156.72	0.084	0.456	0.00
65	54.11	127.41	110.51	0.084	0.460	0.00
75	53.88	92.80	80.14	0.083	0.464	0.00
85	53.64	69.32	59.60	0.083	0.469	0.00
95	53.40	52.97	45.34	0.083	0.473	0.00
105	53.17	41.31	35.20	0.083	0.478	0.00
115	52.93	32.81	27.83	0.083	0.482	0.00
125	52.70	26.49	22.38	0.082	0.486	0.00
135	52.46	21.72	18.26	0.082	0.491	0.00
145	52.23	18.04	15.10	0.082	0.495	0.00
155	51.99	15.18	12.65	0.082	0.499	0.00
165	51.75	12.91	10.71	0.082	0.504	0.00
175	51.52	11.09	9.16	0.082	0.508	0.00
185	51.28	9.62	7.91	0.081	0.513	0.00
195	51.05	8.42	6.89	0.081	0.517	0.00
205	50.81	7.42	6.04	0.081	0.521	0.00
215	50.57	6.59	5.34	0.081	0.526	0.00
225	50.34	5.88	4.75	0.081	0.530	0.00
235	50.10	5.29	4.25	0.080	0.534	0.00
245	49.87	4.78	3.82	0.080	0.539	0.00
255	49.63	4.34	3.46	0.080	0.543	0.00
265	49.40	3.97	3.14	0.080	0.548	0.00
275	49.16	3.64	2.87	0.080	0.552	0.00
285	48.92	3.35	2.63	0.080	0.556	0.00
295	48.69	3.09	2.42	0.079	0.561	0.01
305	48.45	2.87	2.23	0.079	0.565	0.01
315	48.22	2.67	2.06	0.079	0.569	0.01
325	47.98	2.49	1.92	0.079	0.574	0.01
335	47.75	2.33	1.79	0.079	0.578	0.02
345	47.51	2.19	1.67	0.079	0.583	0.02
355	47.27	2.06	1.56	0.078	0.587	0.02
365	47.04	1.95	1.47	0.078	0.591	0.03
375	46.80	1.84	1.38	0.078	0.596	0.03
385	46.57	1.74	1.30	0.078	0.600	0.04
395	46.33	1.66	1.23	0.078	0.604	0.05
405	46.09	1.58	1.16	0.077	0.609	0.06
415	45.86	1.50	1.10	0.077	0.613	0.08
425	45.62	1.43	1.05	0.077	0.618	0.08
435	45.39	1.37	1.00	0.077	0.622	0.11
445	45.15	1.31	0.95	0.077	0.626	0.13
455	44.92	1.26	0.91	0.077	0.631	0.15
465	44.68	1.21	0.87	0.076	0.635	0.19
475	44.44	1.17	0.83	0.076	0.639	0.22
485	44.21	1.12	0.80	0.076	0.644	0.26
495	43.97	1.08	0.76	0.076	0.648	0.31
505	43.74	1.05	0.73	0.076	0.653	0.36
515	43.50	1.01	0.71	0.076	0.657	0.42
525	43.26	0.98	0.68	0.075	0.661	0.48
535	43.03	0.95	0.65	0.075	0.666	0.56
545	42.79	0.92	0.63	0.075	0.670	0.66
555	42.56	0.89	0.61	0.075	0.674	0.76
565	42.32	0.87	0.59	0.075	0.679	0.87
575	42.09	0.84	0.57	0.074	0.683	1.00
585	41.85	0.82	0.55	0.074	0.688	1.14
595	41.61	0.80	0.53	0.074	0.692	1.31
605	41.38	0.78	0.52	0.074	0.696	1.49
615	41.14	0.76	0.50	0.074	0.701	1.69
625	40.91	0.74	0.49	0.074	0.705	1.92
630	40.79	0.74	0.48	0.073	0.707	2.04

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