MANTHERM K2

Synthetic heat transfer oil with excellent thermal stability

Introduction

Mantherm K2 is a fully synthetic high-temperature heat transfer oil used in liquid-phase and gas-phase heat transfer systems, suitable for liquid-phase heating systems at 12 ℃ -400 ℃ or gas-phase heating systems at 257℃ -400℃. Widely used in chemical plants that require high temperature and precise temperature control.

Benefits

- The maximum operating temperature of Manto Mantherm K2 is as high as 400 ℃, which is the highest among all heat transfer oils. Its low viscosity and unique chemical properties determine its high-temperature stability.

- In addition to liquid-phase systems, Manto Mantherm K2 can also be used in gas-phase systems. It evaporates above 257℃, and this characteristic can be fully utilized when used in systems that require precise temperature control.

Typical Properties

NO.	Item	Typical Data
1	Appearance	Clear liquid
2	Maximum film temperature	430℃
3	Normal film temperature	257℃
4	Flash point (O.C)	124℃
5	Flash point (C.C.)	110℃
6	Autoignition temperature	601℃
7	Crystallization point	12℃
8	Coefficient of thermal expansion@200℃	0.000979/℃
9	Kinematic viscosity@-46℃	300cSt
10	Kinematic viscosity@40℃	2.48cSt
11	Kinematic viscosity @100℃	0.99cSt
12	Density@15℃	1068kg/m^3
13	Density @25℃	1060kg/m^3
14	Acid value	<0.2mgKOH/g
15	Average molecular weight	166
16	Copper Corrosion	<<1a
17	Moisture content	≤300ppm
18	Sulfur content	<10ppm
19	Recommended temperature for use	12℃ ~ 400℃

The above experimental data is from standard samples, and there may be slight differences in data for different batches of products. Please consult our technical support for detailed information.

Liquid Properties

Tempe-rature	Densi-ty	Liquid Heat Capacity		Liquid Thermal Conduct		Liquid Viscosity		Liquid Enthalpy		Vapor Pressure
℃	kg/m³	Btu/(lb • ℉) (cal/g • ℃)	kJ/ (kg • K)	Btu/ (ft • hr • ℉)	W/ (m • k)	cSt mm²/s	cP mPa • s	Btu/lb	kJ/kg	Kgf/cm2
12	1071	0.364	1.52	0.0792	0.137	5.12	5.48	0	0	
49	1041	0.39	1.63	0.0772	0.1334	2.08	2.16	25	58.2	0.0018
60	1032	0.397	1.66	0.0765	0.1323	1.707	1.761	32.9	76.4	0.0042
104	995	0.427	1.79	0.0735	0.1271	0.938	0.934	65.9	153.1	0.00613
149	958	0.457	1.91	0.0701	0.1213	0.617	0.591	101.2	235.3	0.0442
204	909	0.492	2.06	0.0654	0.1131	0.421	0.383	148.7	354.6	0.277
249	868	0.521	2.18	0.0611	0.1057	0.333	0.29	189.2	439.8	0.858
304	812	0.556	2.33	0.0552	0.0956	0.267	0.217	243	564.9	2.64
349	762	0.856	2.45	0.0501	0.0867	0.234	0.1781	288.7	671	5.49
382	720	0.612	2.56	0.0460	0.0796	0.217	0.1562	324.6	754.4	8.82
404	687	0.633	2.65	0.0431	0.0746	0.21	0.1441	349.4	812.2	11.7

Vapor Properties

Tempe-rature	Densi-ty	Vapor Heat Capacity		Vapor Thermal Conduct		Vapor Viscosity		Vapor Enthalpy		Heat of Vaporization	
℃	kg/m³	Btu/(lb •℉)	kJ/	Btu/	W/	cSt	cP	Btu/lb	kJ/kg	Btu/lb	kJ/kg
		(cal/g • ℃)	(kg • K)	(ft • hr • ℉)	(m • k)	mm²/s	mPa • s				
12		0.233	0.98	0.0047	0.0081		0.0057	180.3	419	80.3	419
49	0.0011	0.263	1.1	0.0057	0.0099		0.0064	196.8	457.3	171.7	399.2
60	0.00245	0.272	1.14	0.0061	0.0105	2720	0.0067	202.1	469.8	169.2	393.3
104	0.0318	0.306	1.28	0.0074	0.0129	238	0.0076	225.2	523.5	159.4	370.4
149	0.206	0.34	1.42	0.0089	0.0154	41.3	0.0085	251	583.5	149.8	348.2
204	1.15	0.379	1.58	0.0107	0.0186	8.41	0.0097	286.7	666.4	138	320.8
249	3.31	0.408	1.71	0.0123	0.0213	3.2	0.0106	317.6	738.2	128.4	298.5
304	9.57	0.444	1.86	0.0143	0.0248	1.22	0.0117	358.6	833.6	115.6	268.7
349	19.5	0.471	1.97	0.016	0.0277	0.649	0.0126	392.8	913	104.1	242
382	31.4	0.492	2.06	0.0173	0.0299	0.423	0.0133	418.8	973.5	94.2	219.1
404	42.6	0.508	2.12	0.0182	0.0314	0.323	0.0137	436.2	1013.9	86.8	201.7

1	2025/1/14	New version released （B-0）	Jevin Ryu
NO.	**Date**	**Correction items**	**Reviewer**