



Cost-effectively meets your heat transfer needs.

HTF for Parabolic Trough System

Introduction

Rodutherm DPO is a fully synthetic high-temp HTF for both liquid and vapor phase heat transfer systems. It is widely used as a heat transfer medium in parabolic trough systems in CSP industry as well as chemical plants where high temperature and precise temperature control is needed, i.e. PET, nylon.

Benefits

- Rodutherm DPO has a maximum operation temperature as high as 400°C, which is the highest among all liquid heat transfer mediums. Its low viscosity and special chemical properties bring supreme transfer performance and thermal stability.
- Besides liquid phase systems, Rodutherm DPO can be used in vapor phase systems. It gets vaporized above 257°C and this feature becomes an advantage when it is used in systems where precise temperature control is needed.

Typical Properties

PROPERTY		TYPICAL VALUE
Normal Boiling Temperature		257 °C
Density @25°C		1066 kg/m ³
Heat of Fusion		23.25 kcal/kg
Kinematic Viscosity	cst@40°C	2.48 mm ² /s
	cst@100°C	0.99 mm ² /s
Flash Point		124 °C
Auto-ignition Temperature		621 °C
Volume Expansion Upon Melting		6.66 %
Moisture Content		300 ppm
Pseudocritical Temperature		499 °C
Pseudocritical Pressure		480.3 psia (33.1bar)
Volume Contraction Upon Freezing		6.30 %
Surface Tension in Air @25°C		36.6 dyn/cm
Specific Resistivity @20°C		6.4x10 ¹¹ ohm-cm
Average Molecular Weight		166
Specific Gravity @25°C		1.044-1.066

Liquid Properties

Temperature	Density	Liquid Heat Capacity		Liquid Thermal Conduct		Liquid Viscosity		Liquid Enthalpy		Vapor Pressure
°C	kg/m ³	Btu/(lb • °F) (cal/g • °C)	kJ/ (kg • K)	Btu/ (ft • hr • °F)	W/ (m • K)	cSt mm ² /s	cP mPa • s	Btu/lb	kJ/kg	Kgf/cm ²
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

Temperature	Density	Vapor Heat Capacity		Vapor Thermal Conduct		Vapor Viscosity		Vapor Enthalpy		Heat of Vaporization	
		Btu/(lb · °F)	kJ/	Btu/	W/	cSt	cP	Btu/lb	kJ/kg	Btu/lb	kJ/kg
		(cal/g · °C)	(kg · K)	(ft · hr · °F)	(m · K)	mm ² /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