

Armcoltherm® 680

Temperature: from -7°C to 350°C

Armcoltherm 680 heat transfer oil is the most widely used liquid phase high performance organic synthetic heat transfer oil in the world. It has excellent thermal stability, is non-corrosive to metals, resists coking, and is not easy to produce polymers. It is widely used in 300~350°C liquid phase heating systems. It is suitable for polyester industry, petroleum refining, silicone, engineering plastics and other fields.

Property	Unit	Result
Appearance	Visual	Clear liquid
Composition	-	Modified terphenyl
Average molecular weight	-	252
Maximum bulk temperature	°C	350
Maximum film temperature	°C	375
Flash point	°C	184
Autoignition temperature	°C	399
Normal boiling point	°C	359
Pour point	°C	-32
Coefficient of thermal expansion CC/CC	°C	0.000819
Density @20°C	kg/m ³	1008
Viscosity, Kinematic @40°C	mm ² /s	29.6
Viscosity, Kinematic @100°C	mm ² /s	3.77
Liquid heat capacity @300°C	kJ/kg.k	2.57
Liquid thermal conductivity @300°C	W/m.k	0.095
Vapor pressured @300°C	Kpa	30.7
Pseudocritical temperature	°C	569
Pseudocritical pressure	bar	24.3
Pseudocritical density	kg/m ³	317

Temperature		Density	Specific heat		Thermal conductivity		Viscosity	Vapor pressure			Enthalpy
F	°C	kg/m ³	kcal/ kg•°C	kJ/kg·K	Kcal/ m ³ ·hr·°C	W/m ² ·K	mm ² /s	kgf/cm	kPa	psi	kJ/kg
20	-7	1026	0.352	1.47	0.1020	0.1185	4060	—	—	—	16.2
27	-3	1023	0.356	1.49	0.1019	0.1184	2000	—			22.0
32	0	1021	0.356	1.49	0.1018	0.1183	1300		—		26.0
68	20	1008	0.373	1.56	0.1014	0.1176	122	—			56.6
104	40	995	0.390	1.63	0.1006	0.1167	29.6	—			88.5
140	60	982	0.407	1.70	0.0996	0.1158	11.7	—			121.8
176	80	969	0.423	1.77	0.0989	0.1147	6.12	0.0002	0.018	0.0026	156.5
212	100	955	0.440	1.84	0.0978	0.1135	3.77	0.0005	0.048	0.0070	192.6
248	120	941	0.457	1.91	0.0966	0.1121	2.57	0.0012	0.119	0.0173	230.0
284	140	928	0.474	1.98	0.0954	0.1107	1.89	0.0028	0.271	0.0393	268.9
320	160	914	0.490	2.05	0.0939	0.1091	1.46	0.0059	0.579	0.0840	309.2
356	180	899	0.507	2.12	0.0926	0.1074	1.17	0.0119	1.17	0.170	350.9
392	200	885	0.524	2.19	0.0910	0.1056	0.972	0.0227	2.23	0.323	394.0
428	220	870	0.543	2.27	0.0893	0.1036	0.825	0.0414	4.06	0.589	438.6
464	240	856	0.560	2.34	0.0875	0.1015	0.714	0.0724	7.10	1.03	484.7
500	260	840	0.579	2.42	0.0855	0.0993	0.629	0.122	12.0	1.74	532.3
536	280	825	0.596	2.49	0.0836	0.0970	0.563	0.199	19.5	2.83	581.4
572	300	809	0.615	2.57	0.0816	0.0946	0.510	0.313	30.7	4.45	632.0
608	320	792	0.634	2.65	0.0793	0.0920	0.468	0.481	47.2	6.84	684.2
644	340	775	0.653	2.73	0.0770	0.0893	0.434	0.721	70.7	10.3	737.9
680	360	757	0.672	2.81	0.0746	0.0865	0.406	1.05	103	14.9	793.2
716	380	739	0.691	2.89	0.0721	0.0836	0.381	1.51	148	21.5	849.9

*The above data are based on laboratory testing and not all product data are the same

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