

Armcoltherm® 181

Temperature Range: -75°C ~ 315°C

It is a gas/liquid two-phase synthetic heat transfer oil with excellent low temperature performance, suitable for excellent low temperature performance at -75~315 °C and -70 °C, and can be used as a low-temperature refrigerant. Because it has the characteristics of boiling at 181°C under normal pressure, it can also be used as gas-phase heat transfer oil in the temperature range of 181°C~315°C.

Property	Unit	Result	Vapor
Appearance	Visual	Clear liquid	-
Composition	-	Alkyl-substituted aromatic	
Average molecular weight	-	134	-
Maximum bulk temperature	°C	315	-
Maximum film temperature	°C	345	-
Flash point	°C	61	-
Autoignition temperature	°C	429	-
Normal boiling point	°C	181	-
Pour point	°C	-75	-
Coefficient of thermal expansion CC/CC	°C	0.00108	-
Density @20°C	kg/m ³	866	-
Viscosity, Kinematic @-70°C	mm ² /s	5.94	-
Viscosity, Kinematic @-60°C	mm ² /s	4.17	-
Viscosity, Kinematic @40°C	mm ² /s	0.0812	337
Viscosity, Kinematic @100°C	mm ² /s	0.479	26.4
heat capacity @300°C	kJ/kg.k	2.88	2.27
thermal conductivity @300°C	W/m.k	0.0680	0.0317
Vapor pressured @300°C	Kpa	1220	-
Pseudocritical temperature	°C	377	-
Pseudocritical temperature	bar	34.5	-
Pseudocritical density	kg/m ³	298	-

Temperature		Liquid phase properties								Gas phase properties				
		Liquid density	Specific heat	Thermal conductivity	Dynamic viscosity	Kinematic viscosity	Latent heat of vaporization	Enthalpy	Vapor pressure	Density	Specific heat	Thermal conductivity	Dynamic viscosity	Enthalpy
°F	°C	kg/m ³	kJ/kg•K	W/m•k	mPas	mm ² /s	kJ/kg	kJ/kg	kPa	kg/m ³	kJ/kg•K	W/m•k	mPas	kJ/kg
-103	-75	939	1.43	0.143	11.0	11.7	493.8	-118.5	-	-	0.76	-	-	-68.9
-76	-60	928	1.49	0.140	5.51	5.94	483.7	-96.5	-	-	0.82	-	-	-57.0
-40	-40	913	1.57	0.136	2.84	3.11	470.4	-65.9	-	-	0.91	-	-	-39.7
-4	-20	897	1.65	0.132	1.74	1.95	457.2	-33.7	-	0.0003	0.99	0.008	0.00549	-20.7
32	0	882	1.73	0.129	1.20	1.37	444.1	0	-	0.0016	1.08	0.009	0.00593	0
68	20	866	1.80	0.125	0.88	1.03	431.3	35.3	0.1	0.0062	1.16	0.010	0.00638	22.4
104	40	850	1.88	0.121	0.69	0.81	418.5	72.1	0.4	0.0203	1.24	0.012	0.00682	46.4
140	60	833	1.95	0.117	0.55	0.67	405.9	110.3	1.2	0.0566	1.33	0.013	0.00727	72.0
176	80	817	2.02	0.113	0.45	0.56	393.5	150.0	3.1	0.14	1.41	0.014	0.00772	99.3
212	100	800	2.09	0.109	0.38	0.48	381.1	191.2	7.1	0.31	1.49	0.016	0.00818	128.1
248	120	782	2.16	0.105	0.32	0.42	368.8	233.7	15.3	0.63	1.56	0.017	0.00863	158.4
284	140	764	2.24	0.101	0.28	0.37	356.5	277.7	30.3	1.19	1.64	0.019	0.00908	190.1
320	160	746	2.31	0.097	0.24	0.33	344.1	323.1	56.1	2.13	1.72	0.020	0.00952	223.1
356	180	727	2.38	0.093	0.21	0.30	331.6	369.9	98.4	3.60	1.79	0.022	0.00997	257.3
392	200	707	2.45	0.089	0.19	0.27	318.6	418.1	164	5.84	1.87	0.023	0.0104	292.5
428	220	685	2.52	0.085	0.17	0.25	305.1	467.7	262	9.13	1.95	0.025	0.0108	328.7
464	240	663	2.59	0.081	0.15	0.23	290.9	518.8	404	13.9	2.02	0.026	0.0113	365.5
500	260	639	2.67	0.076	0.14	0.22	275.6	571.5	601	20.6	2.10	0.028	0.0117	402.8
536	280	613	2.77	0.072	0.13	0.21	258.7	625.8	869	30.0	2.18	0.030	0.0122	440.3
572	300	583	2.88	0.069	0.11	0.20	239.4	682.2	1220	43.3	2.27	0.032	0.0126	477.4
608	320	550	3.06	0.064	0.10	0.19	216.2	741.4	1680	62.6	2.39	0.034	0.0130	513.4
644	340	509	3.42	0.060	0.99	0.18	185.3	805.6	2260	92.9	2.59	0.035	0.0134	546.7
653	345	504	3.51	0.059	0.98	0.17	178.2	821.3	2552	100.5	2.64	0.036	0.0135	555.0

The above data is based on laboratory testing and not all product data is the same.

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