FRAGOLTHERM® F-LT

Heat Transfer Fluid
-73 °C to 315 °C

Application

FRAGOLTHERM® F-LT is ideal for heating-/cooling processes that also require operating points in the low temperature range.

FRAGOLTHERM® F-LT can be used in the vapor phase as well as in the liquid phase up to 315 °C. In the liquid phase the product can be used pressureless at a temperature range between -73 °C and 181 °C and pressurised up to 315 °C. The film temperature at the heater must not exceed 340 °C.

Also with use in pressureless ranges in the liquid phase a nitrogen blanket is recommended in the expansion tank, in order to prevent premature ageing.

Quality

FRAGOLTHERM® F-LT is a synthetic heat transfer fluid based on diethylbenzene.

FRAGOLTHERM® F-LT is characterized by its high thermal stability and very good pumping characteristics, due to its particularly low viscosity in the low temperature range. The application of **FRAGOLTHERM® F-LT** in the vapor phase allows an exact temperature control in sensitive plant equipment.

FRAGOLTHERM® F-LT is non-corrosive and is compatible with materials conventionally used in heat transfer technology.

Packaging

FRAGOLTHERM® F-LT is available as standard in steel drums and pails.

Notes

Please note that thermal or oxidative decomposition may cause an increase in low and high boiling substances when using heat transfer fluids even below the maximum specified bulk temperature.

When handling the product it is essential to observe the safety data sheet.

Please get in touch with us if you require further information or general technical advice.

Properties

FRAGOLTHERM® F-LT			Method
Density @ 20 °C	[kg/m³]	866	
Viscosity @ 40 °C	[mm²/s]	0.81	
Viscosity @ 100 °C	[mm²/s]	0.48	
Pourpoint	[°C]	-75	ISO 3016
Flash point	[°C]	>58	DIN 51758
Boiling point @ 1013 mbar	[°C]	181	
Max. film temperatur	[°C]	340	
Max. bulk temperatur	[°C]	315	
Dangerous goods according to IATA/IMDG/ADR	[-]	yes	

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Temp. °C	Vapor Press. kPa (abs)	Density kg/m³	Heat Capacity kJ/kgK	Thermal Cond. W/mK	Visc. (kin) mm²/s	Visc. (dyn) mPas	Prandtl-Number	Liquid Enthalpy. kJ/kg
-75		939	1.43	0.143	11.7	11.0	110	-118.5
-70		936	1.45	0.142	9.12	8.54	87.3	-111.3
-60		928	1.49	0.140	5.94	5.51	58.7	-96.5
-50		920	1.53	0.138	4.17	3.84	42.5	-81.4
-40		913	1.57	0.136	3.11	2.84	32.8	-65.9
-30		905	1.61	0.134	2.42	2.19	26.3	-50.0
-20		897	1.65	0.132	1.95	1.75	21.8	-33.7
-10		889	1.69	0.131	1.61	1.43	18.5	-17.0
0		882	1.73	0.129	1.37	1.21	16.2	0.0
10		874	1.76	0.127	1.18	1.03	14.4	17.5
20		866	1.80	0.125	1.03	0.89	12.9	35.3
30		858	1.84	0.123	0.91	0.78	11.7	53.5
40		850	1.88	0.121	0.81	0.69	10.7	72.1
50	1	842	1.91	0.119	0.73	0.61	9.89	91.0
60	1	833	1.95	0.117	0.67	0.56	9.31	110.3
70	2	825	1.99	0.115	0.61	0.50	8.70	130.0
80	3	817	2.02	0.113	0.56	0.46	8.19	150.0
90	5	808	2.06	0.111	0.52	0.42	7.80	170.4
100	7	800	2.09	0.109	0.48	0.38	7.38	191.2
110	11	791	2.13	0.107	0.45	0.36	7.09	212.3
120	15	782	2.16	0.105	0.42	0.33	6.78	233.7
130	22	773	2.20	0.103	0.39	0.30	6.45	255.6
140	30	764	2.24	0.101	0.37	0.28	6.26	277.7
150	42	755	2.27	0.099	0.35	0.26	6.07	300.2
160	56	746	2.31	0.097	0.33	0.25	5.86	323.1
170	75	736	2.34	0.095	0.31	0.23	5.63	346.3
180	98	727	2.38	0.093	0.30	0.22	5.58	369.9
190	128	717	2.41	0.091	0.28	0.20	5.33	393.8
200	164	707	2.45	0.089	0.27	0.19	5.26	418.1
210	209	696	2.48	0.087	0.26	0.18	5.18	442.7
220	262	685	2.52	0.085	0.25	0.17	5.09	467.7
230	327	674	2.55	0.083	0.24	0.16	5.00	493.1
240	404	663	2.59	0.081	0.23	0.15	4.91	518.8
250	495	651	2.63	0.078	0.22	0.14	4.81	544.9
260	601	639	2.67	0.076	0.22	0.14	4.92	571.5
270	725	626	2.72	0.074	0.21	0.13	4.81	598.4
280	869	613	2.77	0.072	0.20	0.12	4.70	625.8
290	1030	598	2.82	0.070	0.20	0.12	4.81	653.7
300	1220	583	2.88	0.069	0.20	0.12	4.88	682.2
310	1440	567	2.96	0.066	0.19	0.11	4.84	711.4
320	1680	550	3.06	0.064	0.19	0.10	5.01	741.4

This data applies to **FRAGOLTHERM® F-LT** in the liquid phase.

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Temp. °C	Density kg/m³	Heat Capacity kJ/kgK	Thermal Cond. W/mK	Visc. (dyn) mPas	Latent enthalpy of evaporation kJ/kg
-75	-	0.759	-	-	493.8
-70	-	0.780	-	-	490.4
-60	-	0.823	-	-	483.7
-50	-	0.865	-	-	477.0
-40	-	0.908	-	-	470.4
-30	0.000	0.950	0.0075	0.0053	463.8
-20	0.000	0.992	0.0080	0.0055	457.2
-10	0.001	1.035	0.0086	0.0057	450.7
0	0.002	1.077	0.0092	0.0059	444.1
10	0.003	1.119	0.0098	0.0062	437.7
20	0.006	1.160	0.0104	0.0064	431.3
30	0.012	1.202	0.0110	0.0066	424.9
40	0.020	1.243	0.0117	0.0068	418.5
50	0.035	1.284	0.0123	0.0071	412.2
60	0.057	1.325	0.0130	0.0073	405.9
70	0.090	1.366	0.0136	0.0075	399.7
80	0.140	1.406	0.0143	0.0077	393.5
90	0.210	1.446	0.0150	0.0080	387.3
100	0.310	1.486	0.0157	0.0082	381.1
110	0.446	1.525	0.0164	0.0084	375.0
120	0.631	1.564	0.0171	0.0086	368.8
130	0.875	1.603	0.0178	0.0089	362.7
140	1.19	1.642	0.0185	0.0091	356.5
150	1.61	1.680	0.0193	0.0093	350.4
160	2.13	1.719	0.0200	0.0095	344.1
170	2.79	1.757	0.0208	0.0098	337.9
180	3.60	1.794	0.0216	0.0100	331.6
190	4.61	1.832	0.0223	0.0102	325.1
200	5.84	1.870	0.0231	0.0104	318.6
210	7.33	1.907	0.0239	0.0106	312.0
220	9.13	1.945	0.0248	0.0108	305.1
230	11.3	1.983	0.0256	0.0111	298.1
240	13.9	2.021	0.0264	0.0113	290.9
250	16.9	2.059	0.0273	0.0115	283.4
260	20.6	2.099	0.0281	0.0117	275.6
270	24.9	2.139	0.0290	0.0119	267.4
280	30.0	2.181	0.0299	0.0122	258.7
290	36.0	2.226	0.0308	0.0124	249.4
300	43.3	2.274	0.0316	0.0126	239.4
310	52.0	2.328	0.0326	0.0128	228.5
320	62.6	2.392	0.0335	0.0130	216.2
330	75.9	2.473	0.0344	0.0132	202.2
340	92.9	2.591	0.0354	0.0134	185.3

This data applies to **FRAGOLTHERM® F-LT** in the vapor phase.

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