FRAGOLTHERM® F-12 F

Heat Transfer Fluid
-85 °C up to 230 °C

Application

FRAGOLTHERM® F-12 F is ideal for heating/cooling processes and shows a high thermal stability. Typical fields of application are, for example, pharmaceutical industry and environmental test chambers.

FRAGOLTHERM® F-12 F has a low viscosity in the low temperature range and can therefore be used between -85 °C and 194 °C in pressureless systems. The maximum bulk temperature can be increased up to 230 °C in pressurised systems. The film temperature at the heater must not exceed 245 °C.

With use in high temperature ranges a nitrogen blanket is recommended in the expansion tank, in order to prevent premature ageing.

Quality

FRAGOLTHERM® F-12 F is a synthetic heat transfer fluid based on aliphatic hydrocarbons with a fluorescending dye.

FRAGOLTHERM® F-12 F is non-corrosive and is compatible with materials conventionally used in heat transfer technology.

FRAGOLTHERM® F-12 F allows tracing of leakages in the plant under UV light.

Packaging

FRAGOLTHERM® F-12 F 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 specified maximum bulk temperature.

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

Please contact us if you require further information or general technical advice.

Properties

FRAGOLTHERM® F-12 F			Method
Density @ 20 °C	[kg/m³]	763	
Viscosity @ 40 °C	[mm²/s]	1.18	
Viscosity @ 100 °C	[mm²/s]	0.65	
Pourpoint	[°C]	-98	ISO 3016
Flash point	[°C]	62	ASTM D93
Boiling point @ 1013 mbar	[°C]	194	
Max. film temperature	[°C]	245	
Max. bulk temperature	[°C]	230	
Dangerous goods according to IATA/IMDG/ADR	[-]	no	

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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
-85		840	1.64	0.124	348	292	3857
-70		829	1.71	0.122	67.8	56.2	789
-60		821	1.76	0.121	27.8	22.8	332
-50		814	1.81	0.119	13.9	11.3	171
-40		807	1.85	0.118	8.45	6.82	107
-30		799	1.90	0.117	5.50	4.39	71.2
-20		792	1.94	0.116	3.81	3.02	50.5
-10		785	1.99	0.114	2.91	2.28	39.9
0		777	2.03	0.113	2.35	1.83	32.7
10		770	2.07	0.111	1.91	1.47	27.4
20		763	2.11	0.110	1.60	1.22	23.4
30		755	2.15	0.108	1.37	1.03	20.6
40		748	2.20	0.107	1.18	0.88	18.1
50		741	2.24	0.105	1.06	0.79	16.7
60	1	734	2.28	0.104	0.96	0.70	15.4
70	1	726	2.33	0.102	0.87	0.63	14.4
80	2	719	2.36	0.100	0.79	0.57	13.4
90	3	711	2.41	0.098	0.71	0.50	12.4
100	5	704	2.45	0.096	0.65	0.46	11.7
110	8	696	2.49	0.095	0.60	0.42	10.9
120	12	688	2.53	0.093	0.55	0.38	10.3
130	17	681	2.57	0.091	0.51	0.35	9.81
140	23	673	2.61	0.089	0.47	0.32	9.27
150	31	665	2.65	0.087	0.44	0.29	8.90
160	42	657	2.69	0.085	0.41	0.27	8.52
170	55	649	2.73	0.083	0.38	0.25	8.10
180	71	641	2.77	0.081	0.36	0.23	7.90
190	91	633	2.81	0.079	0.34	0.22	7.64
200	114	625	2.86	0.076	0.32	0.20	7.52
210	142	617	2.88	0.074	0.30	0.19	7.21
220	175	608	2.93	0.072	0.29	0.18	7.17
230	214	600	2.97	0.070	0.27	0.16	6.88
240	259	592	3.01	0.067	0.26	0.15	6.91
250	311	583	3.05	0.065	0.25	0.15	6.83
260	371	575	3.10	0.063	0.24	0.14	6.79

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