

FRAGOLTHERM® X-T12

Heat Transfer Fluid
-105 °C up to 260 °C

Application

FRAGOLTHERM® X-T12 is designed as a liquid specifically for use with very low temperatures.

FRAGOLTHERM® X-T12 can be used in a temperature range of between -105 °C and 260 °C in a liquid phase. The film temperature at the heating element must not exceed 290 °C.

FRAGOLTHERM® X-T12 is distinguished by superb heat transfer properties and very good pumping characteristics, due to its particularly low viscosity in the low temperature range. **FRAGOLTHERM® X-T12** is therefore the ideal heat transfer medium for applications in the chemical and pharmaceutical industries, in which freezing and heating processes are to be combined.

The suitability of **FRAGOLTHERM® X-T12** for the low temperature range reduces with an increasing water content, because the water released can separate at temperatures of <0 °C and the formation of ice is then possible. This can lead to a deterioration of the thermal transfer and to a blocking of the system.

In order to avoid moisture entering the thermal transfer system, it is recommended that inertisation with nitrogen takes place, or a molecular sieve be installed in a bypass.

Quality

FRAGOLTHERM® X-T12 is a synthetic heat transfer fluid based on polydimethylsiloxane.

FRAGOLTHERM® X-T12 exhibits exceptionally high thermostability across the entire operating temperature range.

FRAGOLTHERM® X-T12 is non-corrosive, odourless and inert.

Packaging

FRAGOLTHERM® X-T12 is available as standard in steel drums and pails.

Note

Please expressly note that it is possible in general terms, when using heat transfer fluids (also below the maximum specified bulk temperature), that low and high-boiling substances may arise due to thermal or oxidative decomposition.

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® X-T12			Method
Density @ 25 °C	[kg/m³]	850	
Viscosity @ 40 °C	[mm²/s]	1.20	
Thermal capacity @ 25 °C	[kJ/kgK]	1.8	
Thermal conductivity @ 25 °C	[W/mK]	0.11	
Pourpoint	[°C]	<-111	
solidification temperature	[°C]	<-140	DIN 51007
Flashpoint (closed cup)	[°C]	64	ASTM D93
Flashpoint (open cup)		>65	ASTM D92
Boiling point @ 1013 mbar	[°C]	>190	
Film temperature max.	[°C]	290	
Bulk temperature max.	[°C]	260	
Hazardous substance according to IATA/IMDG/ADR	[-]	no	

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Temp. °C	Vapor Press. kPa (abs)	Density kg/m ³	Heat Capacity kJ/kgK	Thermal Cond. W/mK	Visc. (kin) mm ² /s	Visc. (dyn) mPas	Prandtl- Number
-105		985	1.51	0.135	112	111	1238
-100		979	1.52	0.134	72.3	70.7	802
-90		968	1.54	0.132	34.2	33.1	386
-80		958	1.56	0.131	20.1	19.2	229
-70		948	1.58	0.129	14.1	13.4	164
-60		937	1.60	0.127	10.0	9.40	118
-50		927	1.63	0.125	7.43	6.89	89.8
-40		917	1.65	0.123	5.61	5.14	69.0
-30		907	1.66	0.121	4.42	4.01	55.0
-20		896	1.69	0.119	3.44	3.08	43.8
-10		886	1.71	0.117	2.77	2.45	35.9
0		876	1.73	0.115	2.24	1.96	29.5
10		866	1.75	0.113	1.88	1.63	25.2
20		855	1.77	0.111	1.59	1.36	21.7
30		845	1.79	0.109	1.35	1.14	18.7
40		835	1.81	0.106	1.18	0.99	16.8
50	1	825	1.84	0.104	1.05	0.87	15.3
60	1	814	1.86	0.102	0.94	0.77	14.0
70	1	804	1.88	0.100	0.84	0.68	12.7
80	2	794	1.90	0.097	0.77	0.61	12.0
90	3	783	1.92	0.095	0.71	0.56	11.2
100	5	773	1.94	0.093	0.66	0.51	10.6
110	7	763	1.96	0.090	0.61	0.47	10.1
120	10	753	1.98	0.088	0.57	0.43	9.66
130	15	742	2.00	0.085	0.53	0.39	9.25
140	21	732	2.02	0.083	0.50	0.37	8.91
150	30	722	2.05	0.080	0.47	0.34	8.70
160	40	712	2.07	0.078	0.44	0.31	8.31
170	54	701	2.09	0.075	0.41	0.29	8.01
180	70	691	2.11	0.073	0.38	0.26	7.59
190	91	681	2.13	0.070	0.35	0.24	7.25
200	116	670	2.15	0.067	0.33	0.22	7.10
210	147	660	2.17	0.065	0.31	0.20	6.83
220	183	650	2.19	0.062	0.29	0.19	6.66
230	226	640	2.21	0.059	0.28	0.18	6.71
240	276	629	2.23	0.057	0.27	0.17	6.64
250	336	619	2.26	0.054	0.27	0.17	6.99
260	404	609	2.28	0.051	0.27	0.16	7.35

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All the above information is provided to the best of our knowledge. Any legal liability for the content of this information and the suitability of the product for certain applications is rejected. Technical data are approximate values and are subject to the usual production fluctuations.