

Klüberfood NHT1 1-18

Premium heat transfer fluid for the food-processing and pharmaceutical industries



Your benefits at a glance

- High process reliability due to NSF HT1 and NSF H1 registration as well as ISO 21469 certification
- Extended oil change intervals achievable due to highly refined naphthenic base oil
- Reduced maintenance efforts and dependable operation due to excellent thermal stability
- Increased heat transfer efficiency
- Fast startups possible due to low base oil viscosity

Your requirements - our solution

As a food producer or machine OEM, you are striving to improve food safety of your products, without compromising performance and process stability. Therefore Klüberfood NHT1 1-18 was developed for closed heat transfer systems offering excellent thermal stability* and increased heat transfer efficiency.

Klüberfood NHT1 1-18 is based on highly refined hydrocarbons avoiding impurities that can occur in mineral oils. These impurities can initiate degradation of the oil and form carbon buildup on heater surfaces. Therefore the high purification level increases thermal stability and reduces fouling of the oil. As a consequence Klüberfood NHT1 1-18 allows you to reduce maintenance activities and extended oil change intervals can be achieved.

The low base oil viscosity of Klüberfood NHT1 1-18 enables fast startups of your heating systems. In addition, its low viscosity and high density make Klüberfood NHT1 1-18 a highly efficient heat transfer fluid.

By using Klüberfood NHT1 1-18 you can benefit from a number of advantages that will help you save costs easily and efficiently.

Application

Klüberfood NHT1 1-18 is exclusively recommended as a closed-loop heat transfer fluid.

Thanks to its NSF HT1 registration, Klüberfood NHT1 1-18 is suitable for use as heat transfer fluid in the food and pharmaceutical

industries. It can also be applied in various industries such as textiles, chemicals, automotive, asphalt, cement, wood, etc.

Application notes

Klüberfood NHT1 1-18 can be applied in new systems without prior cleaning, except when required for reasons of product quality. Residues of varnishes, oils and others from the system installation are usually not enough to affect the fluid lifetime.

Klüberfood NHT1 1-18 is compatible with common heat transfer fluids.

The start-up procedure or cleaning process should be done in compliance with the documentation of the manufacturer of the heat transfer system. In the presence of inert gas, the operating time of this fluid may be considerably extended.

It is highly recommended to analyse the oil every 6 months to allow a reliable and efficient operation of your heat transfer system.

In case of any question we are looking forward to hearing from you.

* The maximum operating temperature depends on the heating system. We recommend a maximum temperature of 316 °C for fire heating systems and up to 332 °C for all other heating systems.

Material safety data sheets

Material safety data sheets can be requested via our website www.klueber.com. You may also obtain them through your contact person at Klüber Lubrication.

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Typical Properties **

Temperature (°C)	Density (g/cm3)	Kinematic Viscosity (mm2/s)	Specific Heat (kJ/kg*K)	Thermal Conductivity (W/m*K)
40	0,8860	19,216	1,936	0,1082
45	0,8818	15,501	1,972	0,1078
50	0,8816	12,846	2,006	0,1074
55	0,8778	10,797	2,039	0,1070
60	0,8762	9,236	2,071	0,1066
65	0,8720	7,976	2,102	0,1062
70	0,8715	6,994	2,132	0,1058
75	0,8676	6,165	2,161	0,1054
80	0,8658	5,492	2,188	0,1049
85	0,8614	4,912	2,215	0,1045
90	0,8608	4,441	2,240	0,1041
95	0,8568	4,022	2,265	0,1037
100	0,8548	3,669	2,289	0,1033
105	0,8503	3,353	2,313	0,1029
110	0,8495	3,090	2,336	0,1025
115	0,8453	2,848	2,358	0,1021
120	0,8431	2,639	2,380	0,1017
125	0,8384	2,447	2,402	0,1013
130	0,8374	2,285	2,423	0,1009
135	0,8331	2,131	2,445	0,1005
140	0,8308	1,998	2,466	0,1001
145	0,8260	1,871	2,487	0,0997
150	0,8248	1,764	2,509	0,0993
155	0,8203	1,660	2,531	0,0989
160	0,8178	1,569	2,554	0,0985
165	0,8129	1,482	2,577	0,0981
170	0,8115	1,407	2,601	0,0977
175	0,8069	1,333	2,626	0,0973
180	0,8042	1,269	2,651	0,0968
185	0,7991	1,205	2,679	0,0964
190	0,7975	1,151	2,707	0,0960
195	0,7928	1,097	2,737	0,0956

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200	0,7899	1,049	2,768	0,0952
205	0,7847	1,001	2,802	0,0948
210	0,7829	0,961	2,836	0,0944
215	0,7780	0,919	2,870	0,0940
220	0,7750	0,883	2,904	0,0936
225	0,7696	0,846	2,938	0,0932
230	0,7677	0,815	2,973	0,0928
235	0,7626	0,783	3,007	0,0924
240	0,7594	0,754	3,041	0,0920
245	0,7539	0,725	3,075	0,0916
250	0,7517	0,701	3,109	0,0912
255	0,7466	0,675	3,143	0,0908
260	0,7432	0,653	3,178	0,0904
265	0,7376	0,629	3,212	0,0900
270	0,7352	0,610	3,246	0,0896
275	0,7299	0,589	3,280	0,0892
280	0,7263	0,571	3,314	0,0887
285	0,7206	0,552	3,348	0,0883
290	0,7180	0,536	3,382	0,0879
295	0,7125	0,519	3,417	0,0875
300	0,7088	0,504	3,451	0,0871
305	0,7029	0,488	3,485	0,0867
310	0,7001	0,475	3,519	0,0863
315	0,6945	0,461	3,553	0,0859
320	0,6906	0,449	3,587	0,0855
325	0,6846	0,435	3,622	0,0851
330	0,6816	0,424	3,656	0,0847

** Based on one-time measurements. Measured values can vary slightly.

Pack sizes	Klüberfood NHT1 1-18
Drum 200 l	+
Characteristics	Klüberfood NHT1 1-18
Article number	029098
Composition, type of oil	hydrated naphthenic mineral oil

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Characteristics	Klüberfood NHT1 1-18
Maximum film temperature	342 °C
Minimum Operating Temperature, 20 mPas	36 °C
Minimum Start-up Temperature, 300 mPas	-3 °C
Service temperature, upper limit, fired heaters	315 °C
Service temperature, upper limit, others heaters	330 °C
Classification Q, ISO 6743-12	QC
NSF H1, HT1 registration number	156393
Density, DIN 51757, 15.6°C	approx. 0.89 g/cm ³
Flash point, DIN EN ISO 2719, Pensky-Martens closed cup	≥ 149 °C
Vapour pressure, 290°C, Bibliographical value (for information only)	approx. 270 hPa
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 40°C	approx. 20 mm ² /s
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	60 months

Klüber Lubrication – your global specialist

Innovative tribological solutions are our passion. Through personal contact and consultation, we help our customers to be successful worldwide, in all industries and markets. With our ambitious technical concepts and experienced, competent staff we have been fulfilling increasingly demanding requirements by manufacturing efficient high-performance lubricants for more than 90 years.

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