Hydrogenation synthesis of heat transfer fluid (MTQD320)

Performance Overview

Maxtop Meistog Hydrogen Synthesis heat transfer fluid (MTQD320) is made by subjecting high-saturated hydrocarbons to high-temperature and high-pressure hydrogenation cracking and refining, using base oil free of impurities. It is then mixed with the self-developed Meistog MAXTOP thermal oil composite additive. Through a series of patented formula technologies and multiple self-developed long-duration tests for anti-coking under both high-temperature and oxidative conditions, it is successfully produced.It is completely compatible with other brands of alkylbenzene heat transfer oil.

Product features

01

Good thermal stability, good thermal oxidation stability, good anti-coking property, good thermal conductivity retention.

02

The acid value and carbon increase of the hydrogenation synthesis thermal oil (MTQD320) during operation are very small.

03

Excellent low-temperature fluidity, facilitating cold start. Moderate viscosity results in low running resistance and good heat transfer performance.

04

Completely protects the metal surface from rusting, with low evaporation loss, less supplementary oil, and stable pressure during the operation of the boiler system.

Application scenario

Both closed-type and open-type heat transfer oil heating systems can be used: the maximum oil film temperature is 320℃, and the maximum main body temperature is 300℃. The temperature of the upper tank of the open system in contact with the air is less than 70℃.

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Typical data of hydrogenation synthesis of heat transfer fluid (MTQD320)

Project	Quality indicators
Appearance	Colorless and transparent liquid
Density (at 20℃) / (Kg/m3)	837.1
Viscosity at 40℃, mm2/s	20.75
Viscosity at 100℃, mm2/s	4.22
Viscosity at 200℃, mm2/s	1.29
Viscosity at 300℃, mm2/s	0.76
Flash point (open cup), ℃	221
Flash point (closed cup), ℃	210
Autoignition point, ℃	343
Pour point, ℃	-42
Copper strip corrosion (100℃, 3h), grade	1a
Residues (mass fraction), %	0.01
Acid value, mgKOH/g	0.01
Initial boiling point, ℃	359
Boiling point of 2% distillate, ℃	344
Water content (mg/kg), %	18
Thermal oxidation stability (175℃, 72h)	Qualified
Thermal stability (300℃, 720h) - deterioration rate less than	10%
At 300℃ under high temperature / at 90℃ under oxidation for 720 hours	By
At 300℃ under high temperature / at 120℃ under oxidation for 480 hours	By
At 300℃ under high temperature / at 150℃ under oxidation for 240 hours	By

The above data represent the typical values of the current product. The data for each subsequent batch of products may vary within the allowable range set by Meistao's quality standards.

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Performance data of hydrogenated synthesis heat transfer fluid at different temperatures

Temperature (℃)	Density (kg/m^3)	Specific heat (kJ/kg·K)	Thermal conductivity (W/m·K)	Viscosity (kinematic viscosity)(mm^2/s)	Saturated vapor pressure(kPa)
-20	862.3	1.72	0.128	963.34	
-10	855.1	1.75	0.126	375.58	
0	848.0	1.78	0.124	171.17	
10	840.9	1.81	0.122	88.41	
20	837.1	1.84	0.120	50.51	
30	830.5	1.87	0.118	31.31	
40	823.9	1.90	0.116	20.75	
50	817.4	1.93	0.114	14.52	
60	810.9	1.96	0.112	10.64	
70	804.4	1.99	0.110	8.09	
80	797.9	2.02	0.108	6.35	
90	791.5	2.05	0.106	5.12	
100	785.1	2.08	0.104	4.22	
110	778.7	2.11	0.102	3.54	
120	772.3	2.14	0.100	3.03	
130	765.9	2.17	0.098	2.63	3.2
140	759.6	2.20	0.096	2.31	4.4
150	753.3	2.23	0.094	2.05	6.0
160	747.0	2.26	0.092	1.84	8.1
170	740.7	2.29	0.090	1.67	10.7
180	734.4	2.32	0.088	1.52	14.0
190	728.1	2.35	0.086	1.40	18.1
200	721.9	2.38	0.084	1.29	23.2
210	715.7	2.41	0.082	1.20	29.5
220	709.5	2.44	0.080	1.12	37.1
230	703.3	2.47	0.078	1.06	46.3
240	697.1	2.50	0.076	1.00	57.3
250	690.9	2.53	0.074	0.95	70.4
260	684.8	2.56	0.072	0.90	85.9
270	678.7	2.59	0.070	0.86	104.1
280	672.6	2.62	0.068	0.82	125.4
290	666.5	2.65	0.066	0.79	150.2
300	660.4	2.68	0.064	0.76	178.9

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