

PRODUCT DATA SHEET

DAHPNE ALPHA THERMO 32B High Performance Heat Transfer Oil

Application

Daphne Alpha Thermo 32B is a full synthetic heat transfer fluid to provide excellent heat transfer performance. Recommended especially for closed heating system with operating temperature up to 320°C.

Characteristics

1. Heat Resistance

Excellent thermal stability, if it is used in a closed system where the temperature is 320 C, sludge and carbon do not occur.

Applicable temperature range (bulk oil temperature) is 10°C ~ 280°C

2. Corrosion Resistance

It does not contain substances that are corrosive to various metal, therefore it does not corrode the equipment in a heat transfer closed system.

3. Danger of Ignition

Because of its high flash point, this synthetic heat transfer oil is difficult to ignite.

Packing

20L pail, 200L drum

CHEMICAL AND PHYSICAL PROPERTIES		TEST METHOD	TYPICAL DATA
Appearance		Visual	Pale Yellow
Color		ASTM D-1500	L0.5
Density 15 °C g/cm ³		ASTM D-4052	0.889
Flash Point (COC) °C		ASTM D-92	214
Viscosity, cSt	@ 40 °C	ASTM D-445	30.3
	@ 100 °C	ASTM D-445	4.69
TAN (mgKOH/g)		ASTM D-664	0.01
Pour Point °C		ASTM D-6749	-57.5

Important Notes

Daphne Alpha Thermo 32B is a low toxicity synthetic heat transfer oil medium. However, please note the following points from a safety viewpoint.

- 1) When contact with skin, wash with soap and rinse with water.
(As well as ordinary hydrocarbon oil, there is no skin irritation.)
- 2) In case of contact with eye, rinse it with running water for 15 minutes and seek medical attention.
- 3) If inhaled, move to fresh air immediately, please seek medical attention if needed.
- 4) If swallowed, drink plenty of water and vomit it out immediately, please seek medical advice.

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Physical Properties of Temp. (°C)	Density kg/m ³	Specific heat kcal/kg°C	Heat conductivity kJ/m hr °C	Viscosity mPa0 s	Steam Pressure mm Hg
0	899	1.79	5.69×10 ⁻¹	356	-
20	886	1.86	5.63×10 ⁻¹	78.4	-
40	873	1.93	5.57×10 ⁻¹	26.5	-
60	860	2.00	5.51×10 ⁻¹	11.8	-
80	848	2.07	5.45×10 ⁻¹	6.38	-
100	835	2.15	5.38×10 ⁻¹	3.92	1.71
120	822	2.22	5.32×10 ⁻¹	2.64	9.19
140	809	2.29	5.26×10 ⁻¹	1.90	3.84×10 ¹
160	796	2.36	5.20×10 ⁻¹	1.44	1.31×10 ²
180	784	2.43	5.14×10 ⁻¹	1.14	3.81×10 ²
200	771	2.51	5.08×10 ⁻¹	0.93	9.73×10 ²
220	758	2.58	5.02×10 ⁻¹	0.77	2.23×10 ³
240	745	2.65	4.95×10 ⁻¹	0.65	4.66×10 ³
260	732	2.72	4.89×10 ⁻¹	0.57	9.02×10 ³
280	720	2.79	4.83×10 ⁻¹	0.51	1.64×10 [?]
300	707	2.87	4.77×10 ⁻¹	0.46	2.81×10 [?]

Thermal Stability

Shield Test Tube

Put 5ml of oil sample in test tube, Copper, Iron, Aluminum as catalyst, decompress the test tube to about 1mmHg with a vacuum pump, seal the tube by putting the mouth of the test tube over a burner. Keep the test tube in the bath temperature of 280°C and 300°C for 7 days, observe the change of quality.

Temperature	Test Item	Daphne Alpha Thermo 32B	Market Oil	
280°C	Appearance	Transparent Yellow	Transparent Yellow	
	Viscosity @40°C mm ² /s	29.36	31.08	
	Rate of Viscosity change %	-3.10	-5.68	
	Catalyst discoloration	Cu	No change	Turn black
		Fe	Slight darken	Turn black
Al		No change	No change	
300°C	Appearance	Transparent Yellow	Transparent Yellow	
	Viscosity @40°C mm ² /s	27.12	27.63	
	Rate of Viscosity change %	-10.5	-15.9	
	Catalyst discoloration	Cu	No change	Turn black
		Fe	Slight darken	Turn black
Al		No change	No change	

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