



GLOBALSYNTH

GLOBALSYNTH LUBRICANTS PVT LTD

An ISO 9001 : 2015 CERTIFIED COMPANY



Heat Transfer Fluid Speciality Expert

CIN - U23209DL2021PTC382265



GLOBALSYNTH HT 400

High Temperature Synthetic Heat Transfer Fluid

GLOBALSYNTH HT 400 Synthetic Heat transfer fluid is a eutectic mixture of two very stable compounds, biphenyl (C₁₂H₁₀) and diphenyl oxide (C₁₂H₁₀O). These compounds have practically the same vapor pressures, so the mixture can be handled as if it were a single compound. GLOBALSYNTH HT 400 fluid may be used in systems employing either liquid phase or vapor phase heating.

Recommended Use Temperature Range :

- ✓ Liquid Phase : 12°C to 400°C
- ✓ Vapor Phase : 257°C to 400°C

Suitable Applications :

Indirect Heat transfer fluid.

BENEFIT OF GLOBALSYNTH 400

- Excellent Thermal Conductivity at high temperatures
- Resists Thermal Breakdown in closed-loop systems
- Long service life.
- Excellent Performance
- High Autoignition Temperature

Typical Properties :

Appearance	Clear, water – white liquid
Composition	Biphenyl/diphenyl oxide (DPO) eutectic mixture
Maximum bulk temperature	400°C
Maximum film temperature	430°C
Normal boiling point	257°C
Crystallizing point	12°C
Flash point, COC (ASTM E – 659)	124°C
Autoignition temperature (ASTM E – 659)	601°C
Autoignition temperature (DIN 51794)	621°C
Coefficient of thermal expansion at 200°C	0.000979/°C
Heat of vaporization at maximum use temperature	206 kJ/kg
Total acidity (ASTM D-664)	<0.2 mg KOH/g
Average molecular weight	166
Pseudocritical temperature	499°C
Pseudocritical pressure	33.1 bar
Pseudocritical density	327 kg/m ³
Sulfur content (ASTM D-7691)	<10 ppm
Copper corrosion (ASTM D-130)	<<1a
Moisture content, maximum (ASTM E-203)	300 ppm
Volume contraction on freezing	6.27%
Surface tension in air at 25°C	36.6 dynes/cm
Dielectric constant @ 23°C (ASTM D-924)	3.35

These characteristics are typical values and do not represent a specification.



Liquid Properties of GLOBALSYNTH HT 400–Heat Transfer Fluid by Temperature(SI Uunits)

Temperature	Liquid density	Liquid heat capacity	Heat of vaporization	Liquid enthalpy	Liquid thermal conductivity	Liquid viscosity	Vapor pressure
■	Kg/m ³	kJ(kg*K)	kJ/kg	kJ/kg	W/(m*k)	cst(mm ² /s)	kPa
12	1070	1.523	419.0	0.0	0.1370	5.12	-
20	1064	1.546	414.7	12.3	0.1363	4.03	0.001
40	1048	1.604	403.9	43.8	0.1344	2.48	0.0009
80	1015	1.719	382.9	110.2	0.1300	1.26	0.153
120	982	1.831	362.6	181.2	0.1252	0.798	1.28
160	948	1.941	342.7	256.7	0.1197	0.566	6.56
200	913	2.048	323.0	336.5	0.1138	0.432	23.9
240	877	2.154	303.0	420.5	0.1072	0.348	68.4
280	838	2.260	282.2	508.8	0.1002	0.292	163
320	796	2.369	259.7	601.4	0.0925	0.254	340
360	749	2.485	234.7	698.4	0.0847	0.227	635
400	694	2.628	205.3	800.5	0.0756	0.211	1090

HEALTH, SAFETY & ENVIRONMENT

Health, Safety and Environment This product is unlikely to present any significant health and safety hazards when used in the recommended application. Avoid contact with skin. Wash immediately with soap and water after skin contact. Do not discharge into drains, soil or water.



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