ENE L-QD400
Heat Transfer Fluid

(Diphenyl & Diphenylether)

Product Description

China Academy of Science and Technology Development

Shenzhen Enesoon Science&Technology Co., Ltd.

1. Summary

Product name： Diphenyl & Diphenylether

Chemical Formula： $C_{12}H_{10}$（26.5%）, $C12H_{10}O$（73.5%）

The average molecular weight： 166

Shape and properties: Colorless clear liquid, water insoluble, mineral acid insoluble, alkaline liquor insoluble， dissolve in ethanol and ether.

Recommend Use Temperature:

- Liquid Phase:12~430℃
- Vapor Phase:257~430℃

2. Characteristic

（1）Antioxidative and strong cokeability, very durable at temperature range of 12～400℃.

（2）Low in toxicity, non-corrosive, good thermal stability.

（3）Excellent security, low beam pressure when saturated at high temperature.

（4）Can be used for calefaction in both gas phase and liquid phase.

3. Quality Index

ENE L-QD400 Quality Index				
Subject	Unit	Range	Mass	Inspection standards
Density (25℃)	g/cm^3	-	1.0600~10650	GB 2.3.3 density meter method
Kinematic viscosity（40℃）	mm^2/s	-	2.2~2.8	GB 265
Crystallization point	℃	-	11.8~12.3	GB 7533
Sulfur content	mg / kg	≤	5	GB / T388
Chlorine content	mg / kg	≤	5	GB / T388

Moisture	mg/kg	≤	300	GB / T11133
Distillation range	Initial distillation ℃	≥	255	SH / T0558
	95%（V）distillation temperature ℃	≤	258	SH / T0558
Constituents	$C_{12}H_{10}$ %	-	26.5 ± 1.0	Q / SHH2010-0042
	$C_{12}H_{10}O$ %	-	73.5 ± 1.0	Q / SHH2010-0042
The average molecular weight	-	-	166.0	Bg 10410

4. Technical Data

Subject	Index
	Premium grades
Appearance	Light yellow or colorless clear oil state liquid at room temperature
Density（25℃），g/cm^3	1.0600~1.0650
Crystallization point，℃ ≥	12.0
Moisture，% ≤	0.03
Temperature range,℃ of distillation range（0℃，101.325KPa）distillate volume 95% (V/V)	256.5~258.0
Kinematic viscosity η40℃， mm^2/s	2.2~2.8
Diphenyl，%	25.5~27.5

Diphenylether，%	72.5~74.5
Purity（Diphenyl & Diphenylether content），% ≥	99.9
Sulfur content，≤ ppm	5
Chlorine content，≤ ppm	5

5. Physical Data

Temperature	Density (Liquid phase)	Density (Gas phase）	Thermal conductivity (Liquid phase)	Thermal conductivity (Gas phase）	Viscosity Cp (Liquid phase)	Viscosity Cp (Gas phase）
℃	kg/m^3	kg/m^3	W/m-k	W/m-k	mm^2/s	mm^2/s
20	1064	-	0.136	0.0179	4.29	0.0058
40	1048	-	0.134	0.0180	2.60	0.0062
60	1032	-	0.132	0.0182	1.76	0.0066
80	1015	-	0.130	0.0184	1.28	0.0070
100	999	-	0.128	0.0187	0.985	0.0074
120	982	-	0.125	0.0191	0.784	0.0079
140	965	0.1	0.122	0.0195	0.642	0.0083
160	948	0.3	0.120	0.0200	0.537	0.0087
180	931	0.5	0.117	0.206	0.457	0.0091
200	913	1.0	0.114	0.0212	0.395	0.0095
220	895	1.7	0.111	0.0219	0.345	0.0099
240	877	2.7	0.107	0.0226	0.305	0.0104

260	858	4.1	0.104	0.0234	0.272	0.0108
280	838	6.1	0.100	0.0243	0.244	0.0112
300	817	8.8	0.0964	0.0252	0.221	0.0116
320	796	12.4	0.0925	0.0262	0.202	0.0120
340	773	17.0	0.0885	0.0272	0.185	0.0124
360	749	22.9	0.0844	0.0284	0.170	0.0128
380	723	30.5	0.0800	0.0295	0.158	0.0132
400	694	40.1	0.0756	0.0308	0.146	0.0136

6. Application

This product functions as a heat carrier for productions of PTA, polyester, filature, ink and melamine. It is widely used for heating spinning manifold of polyester fibre, chinlon, polyprooylene fiber. Also, it is the most common thermal medium for slice spinning filament and staple fiber equipment. Furthermore, the product often apply in petrochemical, synthetic fibre, medical and dyeing industries, for the purpose of heat transfer and heat supply in the system at high temperature, especially in CSP, also known as concentrated solar power.

7. Points of Attentions

（1）ENE L-QD400 heat transfer fluid has no chemical reaction when conduct with metals. It has no corrosion, but strong infiltrability, it may inflate from microporous of casting metal. Please be aware of this matter prior operation.

（2）Before ignite the heating equipment for ENE L-QD400, user should inspect overall leakage from the equipment. After ensure the system without leakage, proceed a vacuum pumping process to exclude non condensable gas, or open the high vent valve from the heating equipment terminal when temperature is between 200℃-250℃ to exclude non condensable gas with steam that is produced by ENE L-QD400.

（3）ENE L-QD400 gas phase heating system must follow the local regulations to install safety valve, in order to perform pressure relief in time when the system is overpressure.

（4）ENE L-QD400 has a strong scent which is hard to remove once it conduct with objects. Please apply it with caution.

（5）ENE L-QD400 has no harmful effect to human skin, but consumers should wash it off with soap after conduct with the product.

8. Package Manner

200KG/Steel Drum