TECHNICAL DATA SHEET

V.01/2023 Ref. 00000000

Seriola 32 & 100

Mineral based heat transfer fluid

APPLICATIONS

Heat transfer circuits from 0 to 310°C without air contact.

Seriola 32 & 100 are recommended for heat transfer installations using thermal fluid circulation, in open and closed circuits.

Seriola 32 & 100 are suitable for heating and temperature control in all industries, and particularly for following manufacturing processes:

- steam production
- paper Industry
- timber Industry
- textile Industry
- oil & gas

Storage recommendation:

- Store at ambient temperature
- Minimize the periods of exposure to temperatures above 35 °C
- Shelf life: 5 years from date of manufacture (unopened)

ADVANTAGES

Seriola 32 & 100 are formulated from selected base oils, with of the following properties:

- very high thermal stability.
- very high flash point.
- high viscosity index.

SPECIFICATIONS

ISO 6743-12 L-QB

DIN 51522 – class Q

APPROVALS

Seriola 32 is approved by the French Health Direction for drinking water treatment.

This lubricant used as recommended and for the application for which it has been designed does not present any particular risk.
A material safety data sheet conforming to the regulations in use in the E.C. can be obtained from your local commercial advisor or downloaded at ms-sds.totalenergies.com

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TYPICAL CHARACTERISTICS

Properties	Units	Standards	Seriola	
			32	100
Appearance	-	Visual	Yellow	Light Brown
Density at 15°C	kg/m^3	ISO 12185	865	890
Viscosity at 40°C	mm²/s	ISO 3104	30	110
Pour point	°C	ISO 3016	-15	-9
Flash point open cup	°C	ISO 2592	230	280
Flash point closed cup	°C	ISO 2719	223	260
Fire point	°C	ISO 2592	260	290
Initial Boiling Point	°C	ASTM D 2887	310	379
Final Boiling Point	°C	ASTM D 2887	549	615
Auto-ignition temperature	°C	ASTM E 659	353	400
Conradson carbon residue	wt%	ISO 6615	<0.1	<0.1
Minimal operating temperature	°C	-	0	0
Maximum bulk temperature	°C	GB/T 23800	310	310
Maximum film temperature	°C	GB/T 23800	330	330

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SERIOLA 32 – THERMODYNAMIC DATA							
T (°C)	Density (kg/L)	Thermal Conductivity (W/m.°C)	Specific Heat (kJ/kg.°C)	Vapour pressure (mbar)	Kinematic Viscosity (mm^2/s or cSt)	Dynamic Viscosity (mPa.s)	Enthalpy of Vaporization (kJ/mol)
0	0,875	0,1358	1,811	0	303	265	
10	0,868	0,1350	1,848	0	147	128	
20	0,862	0,1343	1,884	0	79,6	68,6	
30	0,855	0,1336	1,920	0	47,1	40,2	
40	0,848	0,1328	1,957	0	30,0	25,4	
50	0,841	0,1321	1,993	0	20,3	17,1	
60	0,834	0,1314	2,030	0	14,4	12,0	
70	0,827	0,1306	2,066	0	10,7	8,85	
80	0,820	0,1299	2,102	0	8,16	6,69	
90	0,813	0,1292	2,139	0	6,44	5,23	
100	0,806	0,1284	2,175	0	5,20	4,19	
110	0,799	0,1277	2,212	0	4,30	3,43	
120	0,792	0,1270	2,248	0	3,60	2,85	
130	0,785	0,1262	2,284	0	3,07	2,41	
140	0,778	0,1255	2,321	0	2,66	2,07	87.92
150	0,771	0,1248	2,357	0	2,33	1,80	87.50
160	0,764	0,1240	2,394	0	2,06	1,57	87.09
170	0,757	0,1233	2,430	0	1,84	1,39	86.68
180	0,750	0,1226	2,467	0	1,66	1,25	86.26
190	0,743	0,1218	2,503	1	1,50	1,11	85.85
200	0,736	0,1211	2,539	1	1,37	1,01	85.44
210	0,729	0,1204	2,576	1	1,26	0,92	85.02
220	0,722	0,1196	2,612	2	1,17	0,84	84.62
230	0,715	0,1189	2,649	3	1,08	0,77	84.20
240	0,708	0,1182	2,685	5	1,01	0,72	83.79
250	0,701	0,1174	2,721	7	0,95	0,67	83.35
260	0,694	0,1167	2,758	10	0,89	0,62	82.93
270	0,687	0,1160	2,794	14	0,84	0,58	82.52
280	0,680	0,1152	2,831	20	0,80	0,54	82.11
290	0,673	0,1145	2,867	27	0,76	0,51	81.69
300	0,666	0,1138	2,903	37	0,73	0,49	81.28

Thermal expansion coefficient : $6.965.10^{-4}$ /°C

→ **Thermal conductivity** : property of a material to conduct heat. ***The higher thermal conductivity, the more efficient the heat transfer fluid will be***. Less heat will be required.

→ **Specific heat** : fluid's ability to store the heat. It isdefined by the required energy to raise 1°C the temperature of 1 gram of a fluid.

→ **Vapor pressure** : pressure exerted by a vapor in thermodynamic equilibrium with its condensed phases (solid or liquid) at a given temperature in a closed system. For a heat transfer fluid, a low vapor pressure is recommended to operate safely.

→ **Enthalpy of vaporization :** amount of energy (enthalpy) that must be added to the liquid substance, to transform a quantity of that substance into a gas.

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SERIOLA 100 – THERMODYNAMIC DATA							
T (°C)	Density (kg/L)	Thermal Conductivity (W/m.°C)	Specific Heat (kJ/kg.°C)	Vapour pressure (mbar)	Kinematic Viscosity (mm^2/s or cSt)	Dynamic Viscosity (mPa.s)	Enthalpy of Vaporization (kJ/mol)
0	0,900	0,1320	1,786	0	2293	2063	
10	0,893	0,1312	1,821	0	911	813	
20	0,887	0,1305	1,857	0	415	368	
30	0,880	0,1298	1,893	0	211	185	
40	0,874	0,1291	1,929	0	118	103	
50	0,867	0,1284	1,965	0	71,2	61,7	
60	0,861	0,1277	2,001	0	45,8	39,4	
70	0,854	0,1270	2,037	0	31,1	26,6	
80	0,848	0,1263	2,073	0	22,1	18,7	
90	0,841	0,1255	2,109	0	16,3	13,7	
100	0,835	0,1248	2,145	0	12,4	10,3	
110	0,828	0,1241	2,180	0	9,70	8,03	
120	0,822	0,1234	2,216	0	7,80	6,41	
130	0,815	0,1227	2,252	0	6,39	5,21	
140	0,809	0,1220	2,288	0	5,32	4,30	
150	0,802	0,1213	2,324	0	4,51	3,62	
160	0,796	0,1206	2,360	0	3,87	3,08	
170	0,789	0,1198	2,396	0	3,36	2,65	
180	0,783	0,1191	2,432	0	2,95	2,31	
190	0,776	0,1184	2,468	0	2,62	2,03	
200	0,770	0,1177	2,503	0	2,34	1,80	
210	0,763	0,1170	2,539	0	2,11	1,61	
220	0,757	0,1163	2,575	0	1,92	1,45	
230	0,750	0,1156	2,611	0	1,75	1,31	
240	0,744	0,1149	2,647	0	1,61	1,20	
250	0,737	0,1141	2,683	0	1,48	1,09	
260	0,731	0,1134	2,719	0	1,38	1,01	
270	0,725	0,1127	2,755	0	1,28	0,93	
280	0,718	0,1120	2,791	0	1,20	0,86	
290	0,712	0,1113	2,826	0	1,13	0,80	
300	0,705	0,1106	2,862	0	1,06	0,75	

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