Dynalene PAO Series

DYNALENE
Tomorrow's Solutions Flow Through Us

Polyalphaolefin Dielectric Immersion Coolant Series

Process Applications

- Data center immersion cooling
- Electric Vehicle (EV)
- Cryptocurrency Mining
- Edge computing
- High performance computing (HPC)

Dynalene PAO Series Overview

The Dynalene PAO Series coolant line consists of Dynalene PAO-2, PAO-4, and PAO-6, designed to provide immersion cooling solutions for data centers, AI, and high-performance computing. These high purity dielectric immersion coolants offer low flammability and low volatility and are odorless, bio-degradable, and thermally efficient.

Due to potential health and environmental concerns with immersion and dielectric coolants that are based on per- and polyfluoroalkyl substances (PFAS), there are stricter regulations and restrictions in place to limit the use of these products. Dynalene PAO coolants, with good thermo-physical properties, high electrical insulation, and bio-degradability, are excellent replacements for PFAS-based heat transfer fluids.

Dynalene PAO products feature numerous performance advantages compared to mineral oils, including better low temperature properties (pour point and viscosity), low volatility, and improved thermal stability and oxidation resistance.

Dynalene PAO coolants are compatible with commonly used materials of construction in data centers, thereby increasing the electronic component lifetime. These dielectric coolants increase Power Usage Efficiency (PUE), reduce overall water consumption, increase overall rack density, and increase cooling efficiency in DLC applications, while reducing carbon footprint when compared to air cooling.

Dynalene's Fluid Care Program

Coupling our Dynalene fluids with a fluid care program can extend the life of your systems significantly. We offer yearly testing of the heat transfer fluid in your system and can track changes in the fluid year to year so adjustments can be made to keep your system working at its best.

Recommended Temperature Range:

Up to 120°C (248°F)

Properties of Dynalene PAO Series

For additional physical properties, see page 2. For health and safety information or to request a Safety Data Sheet, contact our Dynalene sales representatives.

Composition:	Polyalphaolefin
Appearance:	Clear, colorless
Odor:	None
Color, Pt-Co	0
Dielectric Constant	2.1
Dielectric Strength (kV/mm)	> 30
Total Acid Number	<0.03
Bromine Index	<200

Quantity & Availability

Dynalene PAO Series products are offered in 1, 2.5, 5, 30, 55, and 265-gallon containers. Pricing depends on quantity, and Dynalene, Inc. will work with you to try to fit your budget.

Benefits of Choosing Dynalene PAO Series

- Enhances data center performance
- Superior materials compatibility
- Non-flammable
- Non-staining to aluminum
- Available worldwide
- Cost-effective
- Total fluid care option
- Fluid and equipment longevity
- Non-corrosive to copper

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General Properties

Property	Typical Value		
	PAO-2	PAO-4	PAO-6
Pour Point, °C (°F)	-73 (-99)	-68 (-91)	-65 (-84)
Flash Point (COC), °C (°F)	154 (309)	226 (438)	239 (463)
Fire Point (COC), °C (°F)	176 (350)	253 (487)	273 (523)
Volatility, Noack, wt%	---	13.4	7.0
Specific Gravity, 15.6°/15.6°C (60°/60°F)	0.7980	0.8190	0.8280

PAO-2

Temperature °C	Density kg/m^3	Dynamic Viscosity mPa·s	Kinematic Viscosity cSt	Thermal Conductivity W/m·K	Specific Heat kJ/kg·K
-30	829	89.9	108.4	0.147	1.940
-20	822	44.6	54.26	0.146	1.977
-10	815	24.9	30.55	0.145	2.015
0	809	13.8	17.10	0.144	2.053
10	802	9.04	11.27	0.144	2.090
20	795	7.06	8.88	0.143	2.128
30	789	4.91	6.22	0.142	2.165
40	782	3.93	5.03	0.141	2.203
50	775	3.19	4.11	0.140	2.241
60	769	2.49	3.24	0.139	2.278
70	762	2.13	2.79	0.138	2.316
80	755	1.72	2.28	0.137	2.391
90	749	1.55	2.07	0.136	2.429
100	742	1.26	1.70	0.135	2.466
110	735	1.10	1.50	0.135	2.504
120	728	0.98	1.34	0.134	2.205

PAO-4

Temperature °C	Density kg/m^3	Dynamic Viscosity mPa·s	Kinematic Viscosity cSt	Thermal Conductivity W/m·K	Specific Heat kJ/kg·K
-30	848	1186	1399	0.159	1.822
-20	841	434	516.4	0.157	1.868
-10	835	188	225.2	0.156	1.914
0	829	71.4	86.2	0.155	1.959
10	822	43.2	52.5	0.154	2.005
20	816	30.4	37.3	0.152	2.051
30	810	18.1	22.4	0.151	2.097
40	803	13.4	16.8	0.150	2.143
50	797	9.36	11.8	0.149	2.189
60	790	7.21	9.12	0.147	2.235
70	784	5.62	7.17	0.146	2.281
80	778	4.39	5.65	0.145	2.326
90	771	3.76	4.88	0.143	2.372
100	765	2.94	3.84	0.142	2.418
110	758	2.44	3.22	0.141	2.464
120	752	2.08	2.76	0.140	2.510

PAO-6

Temperature °C	Density kg/m^3	Dynamic Viscosity mPa·s	Kinematic Viscosity cSt	Thermal Conductivity W/m·K	Specific Heat kJ/kg·K
-30	856	3336	3897	0.160	1.766
-20	850	1127	1327	0.159	1.804
-10	843	453	538	0.159	1.841
0	837	158	189	0.158	1.878
10	931	90.6	109	0.157	1.916
20	825	62.7	76.0	0.156	1.953
30	818	33.2	40.6	0.156	1.991
40	812	25.1	30.9	0.155	2.028
50	806	15.6	19.4	0.154	2.065
60	799	12.4	15.5	0.153	2.103
70	793	9.39	11.8	0.153	2.140
80	787	7.11	9.04	0.152	2.177
90	781	5.66	7.26	0.151	2.215
100	774	4.54	5.86	0.151	2.252
110	768	3.72	4.84	0.150	2.290
120	762	3.12	4.09	0.149	2.327

Product Disclaimer

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