

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 80°C (176°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
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Dielectric Constant	2.1
Dielectric Strength (kV/mm)	> 35
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

General Properties

Property	Typical Value		
	PAO-2	PAO-4	PAO-6
Kinematic viscosity,cSt @ 100°C (212°F)	1.7	3.9	5.86
Kinematic viscosity,cSt @ 40°C (104°F)	5.0	16.8	30.9
Kinematic viscosity,cSt @ -40°C (-40°F)	244	2,498	7,755
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
Density, lb/gal	6.660	6.820	6.910
Thermal Conductivity, W/m·K, 93°C (199°F)	0.136	0.143	0.151
Thermal Conductivity, W/m·K, 38°C (100°F)	0.141	0.150	0.155
Specific Heat, kJ/kg·K, 120°C (248°F)	2.504	2.510	2.327
Specific Heat, kJ/kg·K, 40°C (104°F)	2.203	2.143	2.028

Product Disclaimer

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