



Accelerate EV Performance and Efficiency with Advanced PAO Lubricants

Polyalphaolefins (PAOs) have consistently been at the forefront of automobile lubrication, and their application in electric vehicles (EV) is no exception. The benefits of PAOs extend to use for battery immersion cooling meeting the demanding specifications required for EV drivelines and batteries with exceptional proficiency.

Why PAOs within Electric Vehicles?

Durable, long-lasting performance

The purity of synthetic base oils ensures that polyalphaolefins provide longevity and protection while lubricating EV drivelines. The fill-for-life goals for EVs can be met with the lifecycle for PAOs.

Material Compatibility

EV fluids encounter a multitude of materials such as copper, elastomers, and various plastics. PAOs wide compatibility ensures that it performs the lubrication and protection needed without complications. The compatibility of PAOs go further to in the formulation being able to blend easily with an array of additives that maximizes the efficiency of the final fluid.



PAO as a Thermal Fluid

Between the high RPMs in the motors and the heat created during battery charging and discharging, EVs get just as hot as traditional cars. Efficiently removing this heat is crucial to maintain optimized performance. PAOs are exceptional as thermal fluids for managing the intense heat generated by rapid motor rotations and rapid battery charging, crucial for extending the travel range on each charge.

Multipurpose cooling

PAOs having a high heat capacity and being intrinsically dielectric make them perfect for in tandem cooling while lubricating an EV motor. The combination of high heat transfer and electric inertness also makes PAOs an ideal fluid for battery immersion cooling.

Improved safety

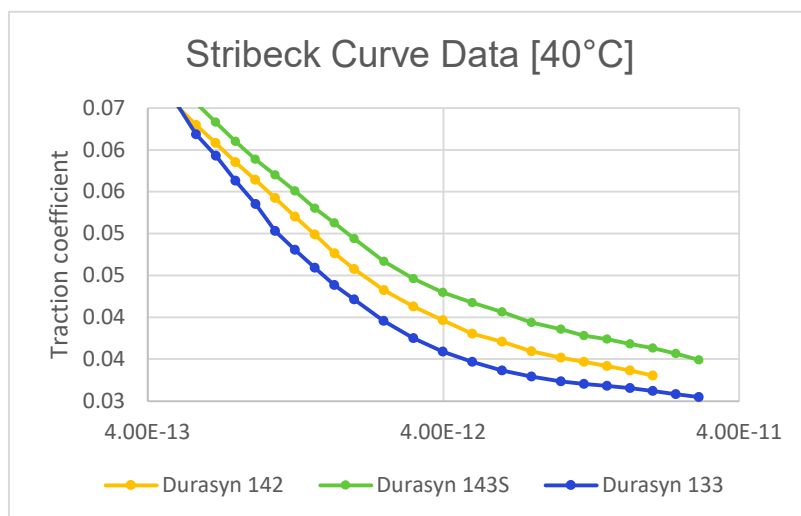
Immersion cooling for battery units not only provides greatly improved cooling, but also surrounding the battery cells minimizes the risk of fire hazards and thermal runaway. With significantly higher flash points PAOs enhance safety within battery immersion cooling systems; a critical advantage for safe electric vehicle operation.



Enhanced efficiency and range

Lower viscosity oils intrinsically lead to improved traction coefficients. The reduction in friction provided by PAOs in an electric motor creates less of a power draw, thusly resulting in improving EV range. The lower viscosity ranges from PAOs can provide an EV formulation minimized friction.

Typical Durasyn® PAO Properties



Property	Method	142	143S	133	136
Kinematic Viscosity @ 100°C	ASTM D445	2.5	3.0	3.4	3.6
Kinematic Viscosity @ 40°C	ASTM D445	8.6	11.7	13.2	15.2
Thermal Conductivity @ 25°C (W/m.K)	ASTM D7896	0.14	0.14	0.15	0.15
Specific Heat @ 25°C (J/kg.K)	ASTM E1269	1.7	1.8	1.5	1.5
Density	ASTM D4052	0.81	0.81	0.82	0.82
Flash Point	ASTM D92	193	190	218	210

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