

Driveline ETF

Driveline ETF is an Electric Transmission Fluid (ETF) designed from scratch for both dry and wet, single and multi-speed eAxles, providing robust protection and cooling to sensitive equipment under harsh conditions, providing the perfect balance of performance to safely meet the requirements of all eAxle types.

Usage

It has been formulated to meet the special needs and requirements of these new highly technical and complex transmission designs, such as cooling and protection, by balancing many new and existing performance requirements to meet the needs of electric vehicles produced in today's conditions.

Features

Complete Protection in Wet/Dry, Single/Multi-Speed Systems: Recommended for use on all single-speed wet eAxles and future-proofed for use in multi-speed applications, it is also backwards compatible for use in all single- and multi-speed dry eAxles systems.

Stable Friction Durability: all-round performance across all synchromesh materials, successfully completing 100,000 cycles with each to ensure compatibility with shifting devices for next-generation multi-speed eAxles. It provides high and stable friction performance that is maintained throughout tests with various friction materials such as Sintered Bronze, Carbon, Molybdenum, brass. It maintains low wear tendency and high coefficient of friction.

Compatibility With Multi-Speed eAxles: Allows the eMotor to remain at optimum speed for longer, allowing the electric powertrain to operate at higher efficiency.

Excellent Electrical Properties: After use, electrical conductivity varies minimally with new fluid, ensuring performance is maintained throughout the life of the ETF fluid.

Excellent Protection of Copper Parts With High EP: Copper is an extremely vital component in the eMotor as it is used in the electrical coil. The copper windings inside the eMotor must be protected; therefore, it is critical that the lubricant does not corrode the copper wires, which could lead to eMotor failure. Therefore, it is imperative that the ETF fluid is compatible with copper in both the liquid and vapor phase. Driveline ETF is formulated to allow high overpressure protection for gears while maintaining exceptional copper flammability in both the liquid and vapor phase.

Superior Oxidative Stability: Electric transmission fluids can be exposed to crankcase temperatures of up to 150°C or higher due to the heat that can be generated by the eMotor. ETF Fluid demonstrates superior oxidative stability, being capable of resisting high temperature oxidation.

Superior Thermal Management/Cooling Ability: To maintain the high efficiency of eAxles, the lubricant must quickly and efficiently cool the sensitive parts within the eAxle, especially the eMotor in the case of a wet system. Here, the higher the heat capacity and thermal conductivity, the better the cooling ability. For this reason, carrier synthetic liquids in ETF were selected with these features.

Balanced, Safe and Stable Performance That Meets New Needs: Perfect balance is achieved with the safe operation of features such as high oxidation and low friction resistance, high performance with zero electrical resistance and minimal variability during use, gear protection, full protection of copper in liquid and vapor phase.

Technical Specifications

*Kinematic Viscosity @100˚C, cSt	ASTM D 445	5,05
*Viscosity Index	ASTM D 2270	165
*Brookfield Viscosity, @ -40°C, mPa.s (cP)	ASTM D 2893	4700

*Data given above are typical properties and may vary slightly.

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