

Development of a Gear Oil with Improved Low-temperature Fluidity for Shinkansen Electric Cars

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A gear oil with improved low-temperature fluidity has been developed for Shinkansen electric cars used in cold districts. In this gear oil, much lower low-temperature viscosity and a higher viscosity index than the current gear oil have been achieved by using highly refined mineral oils as a base oil, and newly adding viscosity index improver additives. It has been indicated from performance tests that the gear oil developed has oxidation stability and lubricating performance equal to or higher than those of the current gear oil. The gear oil developed shows enough fluidity at -30°C in bench rotation test, and enough durability performance in on-track verification tests on Shinkansen cars.