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Lubricant oil for electric vehicle reducer

纯电动汽车减速箱用油

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Lubricant oil for electric vehicle reducer

1 Scope

This document specifies the product varieties, requirements, test methods, inspection rules, marking, packaging, storage, delivery acceptance, for the lubricant oil for electric vehicle reducer, which is produced, by using the refined mineral oil or synthetic oil, or the mixture of both, as the base oil, adding various additives, through blending.

The products in this document are applicable to the first-gear reduction box system of pure electric passenger vehicles. It is also applicable to the first-gear reduction box system of extended-range electric vehicles.

2 Normative references

The content of the following documents constitutes essential provisions of this document through normative references in the text. Among them, for dated references, only the version corresponding to the date applies to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB/T 260 Test method for water in petroleum products - Distillation method

GB/T 256 Determination of induction period of automobile gasoline

GB/T 507 Insulating liquids - Determination of the breakdown voltage at power frequency

GB/T 1995 Calculation method of viscosity index of petroleum product

GB/T 3142 Standard test method for determination of load-carrying capacity of lubricants - Four-ball method

GB/T 3535 Petroleum products - Determination of pour point

GB/T 3536 Petroleum products - Determination of flash and fire points - Cleveland open cup method

GB/T 4756 Method for manual sampling of petroleum liquids

GB/T 5096 Test method for corrosiveness to copper from petroleum products by copper strip test

GB/T 5654 Insulating liquids - Measurement of relative permittivity, dielectric dissipation factor and d.c. resistivity

3 Terms and definitions

There are no terms and definitions, that need to be defined, in this document.

4 Product types

This product is divided into reducer oil for water-cooled motor pure electric vehicle and reducer oil for oil-cooled motor pure electric vehicle, according to the motor cooling method.

5 Requirements and test methods

The technical requirements and test methods, for the oil for the reducer of the water-cooled motor pure electric vehicle AND the oil for the reducer of the oil-cooled motor pure electric vehicle, shall comply with the provisions of Table 1 and Table 2, respectively.

6 Inspection rules

6.1 Classification of inspections

6.1.1 Exit-factory inspection

Exit-factory inspection includes exit-factory batch inspection and exit-factory cycle inspection.

The exit-factory batch inspection items of reducer oil for water-cooled motor pure electric vehicle include kinematic viscosity (100 °C), kinematic viscosity (40 °C), viscosity index, pour point, apparent viscosity (-40 °C), moisture, foam, copper strip corrosion (121 °C, 3 h). When there are no changes in raw materials and production processes, that may affect product quality, the inspection items in the exit-factory cycle inspection include flash point and element content, which are inspected once every ten batches; KRL shear stability (20 h), which is inspected once a year.

The exit-factory batch inspection items for reducer oil for oil-cooled motor pure electric vehicle include kinematic viscosity (100 °C), kinematic viscosity (40 °C), viscosity index, pour point, apparent viscosity (-40 °C), moisture, foam, copper strip corrosion (150 °C, 3 h). When there is no change in raw materials and production process that may affect product quality, the inspection items in the exit-factory cycle inspection include flash point, element content, breakdown voltage (room temperature), which are inspected once every ten batches; KRL shear stability (20 h) and evaporation loss (200 °C, 1 h), which are inspected once a year.

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