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Plug-in Hybrid Electric Passenger Cars - Specifications

插电式混合动力电动乘用车 技术条件

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Plug-in Hybrid Electric Passenger Cars – Specifications

1 Scope

This Document specifies the technical requirements for plug-in (including range-extended) hybrid electric passenger cars.

This Document is applicable to Type-M₁ hybrid electric vehicles that can be externally recharged and have pure electric drive functions.

2 Normative References

The following documents are essential to the application of this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB 18352.6-2016 Limits and Measurement Methods for Emissions from Light-Duty Vehicles (CHINA 6)

GB 18384 Electric Vehicles Safety Requirements

GB 19578 Fuel Consumption Limits for Passenger Cars

GB/T 19596 Terminology of Electric Vehicles

GB/T 19753 Test Methods for Energy Consumption of Light-Duty Hybrid Electric Vehicles

GB/T 20234 (all parts) Connection Set for Charging - Conductive Charging of Electric Vehicles

GB/T 31498 The Safety Requirement of Electric Vehicle Post-Crash

GB/T 34657.2 Interoperability Test Specifications of Electric Vehicle Conductive Charging - Part 2: Vehicle

GB 38031 Electric Vehicles Traction Battery Safety Requirements

4.4 Charging interface and interoperability

The vehicle shall have an external charging function, and according to different charging methods, its charging interface shall meet the corresponding requirements of GB/T 20234 (all parts). Vehicle charging interoperability shall meet the requirements of GB/T 34657.2.

4.5 Fuel consumption and emissions

4.5.1 According to the worldwide light-duty test cycle (WLTC) measured in GB/T 19753, the OVC-HEV fuel consumption shall not exceed 45% of the light-duty vehicle fuel consumption limit specified in GB 19578.

4.5.2 Carry out emission test in accordance with the provisions of Appendix R in GB 18352.6-2016, and the result shall meet the limit requirements of GB 18352.6-2016.

4.6 Driving mileage

4.6.1 The conditional equivalent full-electric mileage under the WLTC test cycle measured in accordance with GB/T 19753 shall be no less than 43km, and the conditional equivalent full-electric mileage is calculated according to Formula (1).

$$EAER_v = \begin{cases} EAER \times \frac{\Delta E_{REESS,v}}{\Delta E_{REESS,CD}}, & (|\Delta E_{REESS,v}| \leq |\Delta E_{REESS,CD}|) \\ EAER, & (|\Delta E_{REESS,v}| > |\Delta E_{REESS,CD}|) \end{cases} \dots\dots\dots (1)$$

Where:

$EAER_v$ - the conditional equivalent full-electric mileage, in km;

v - calculate the speed condition of $EAER_v$. In the n test cycles of the power consumption mode test, if the engine starts at a certain speed section in the first three speed sections of WLTC, then the calculation of $\Delta E_{REESS,v}$ terminates at the end of such speed section. If the engine starts only in the WLTC ultra-high speed section, then the calculation of $\Delta E_{REESS,v}$ terminates at the end of the power consumption mode test;

$EAER$ - the equivalent full-electric mileage calculated according to the provisions of GB/T 19753, in km;

$\Delta E_{REESS,v}$ - at the time specified by the cut-off speed condition v calculated according to the power consumption mode test specified in GB/T 19753, the amount of energy change of REESS, in Wh;

$\Delta E_{REESS,CD}$ - the electric energy change of REESS in the electric power consumption mode test calculated in accordance with the provisions of GB/T 19753, in Wh.

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