NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 42284.5-2022

Road vehicles - Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles - Part 5: Chemical loads

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020, Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents.

This document is Part 5 of GB/T 42284 Road vehicles - Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles. The following parts have been issued for GB/T 42284:

-- Part 1: General;

-- Part 3: Mechanical loads;

-- Part 4: Climatic loads;

-- Part 5: Chemical loads.

This document modifies and adopts ISO 19453-5:2018 Road vehicles - Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles - Part 5: Chemical loads.

Compared with ISO 19453-5:2018, this document makes the following structural adjustments:

-- Unify the room temperature parameters involved in 4.4, 4.5, and 4.6 of ISO 19453-5:2018 in 4.3 General test conditions;

-- Reflect the content of Table 3 of the original text in the form of an annex for user reference; remove Clause 5, and add Annex A.

The technical differences - between this document and ISO 19453-5:2018 - and the reasons are as follows:

-- Replace ISO 19453-1 (see 3, 4.9) and ISO 19453-4 (see Table 1) with the normative references GB/T 42284.1 and GB/T 42284.4, to adapt to the technical conditions in China;

-- Add "any method can be selected when there are multiple application methods" to the footnote a of Table 1, to increase the operability of the document.

The following editorial changes have been made for this document:

-- Remove the ISO and IEC database addresses for standardized maintenance terms, since the terms involved in this document have nothing to do with the ISO and IEC databases for standardized maintenance terms;

-- Simplify the description in 4.8 of the original text, to facilitate the understanding of the document;

-- Add "Note: In order to avoid residual reagents affecting test results, it is allowed to remove residual reagents before checking the results" at the bottom of 4.8 in the original text.

1 Scope

This document specifies requirements for the electric propulsion systems and components with maximum working voltages according to voltage class B. It describes

the potential environmental stresses and specifies requirements recommended for different stress levels on/in the vehicle.

This document applies to electric propulsion systems and components with maximum working voltages according to voltage class B.

This document does not apply to high voltage battery packs (e.g., for traction) and systems and components inside.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB/T 42284.1, Road vehicles - Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles - Part 1: General (GB/T 42284.1-2022, ISO 19453-1:2018, MOD)

GB/T 42284.4, Road vehicles - Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles - Part 4: Climatic loads (GB/T 42284.4-2022, ISO 19453-4:2018, MOD)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 42284.1 apply.

4.7 Test conditions

Unless otherwise specified, the DUT to which the agent is applied shall be tested at the temperature and for the duration specified in Table 1.

4.8 Procedure

The test procedures are as follows:

a) Perform a visual check and, if appropriate, a functional check; record data for comparison with post-test data.

b) Condition the DUT (see 4.4).

c) Place the DUT in its specified test setup. The configuration may include appropriate electrical or mechanical connections.

d) Apply the specified agent(s) as defined in 4.5 to the surface of the DUT according to Table 1 and 4.6;

e) Allow the agent(s) on the DUT to drain naturally. Shaking or wiping is not permitted.

f) Maintain the DUT in a test chamber at the temperature and for the duration specified in Table 1.

g) Stabilize the DUT at room temperature.

h) For more than 1 cycle, repeat steps d) ~ g).

i) Examine the DUT as defined in the requirements in 4.9.

Any safety and warning notes shall be observed.

Note: In order to avoid residual reagents affecting test results, it is allowed to remove residual reagents before checking the results.

4.9 Requirements

After the test, the functional status shall be class C as defined in GB/T 42284.1. Marking and labelling shall remain visible and legible. Other requirements, if any, shall be agreed between the customer and the supplier.

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