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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 29743.2-2025

Motor vehicle coolant - Part 2: Electric vehicle coolant

机动车冷却液 第2部分：电动汽车冷却液

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Table of Contents

1 Scope
2 Normative References
3 Terms and Definitions
4 Product Classification...
5 Technical Requirements and Test Methods...
6 Inspection Rules...
7 Marking, Packaging, Transportation and Storage
Appendix A
Appendix B
Appendix D

1 Scope

GB 29743.2-2025 is the Chinese national standard on motor vehicle coolant - part 2: electric vehicle coolant, in the field of services and company organization. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 28 March 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 October 2025. Classification: ICS 03.220.20, CCS R16. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the product classification, technical requirements and test methods, inspection rules, as well as marking, packaging, transportation and storage of electric vehicle coolants. This document is applicable to the production, inspection and use of electric vehicle coolants prepared with ethylene glycol as the antifreeze raw material in the power battery thermal management system of pure electric vehicles, fuel cell electric vehicles and hybrid electric vehicles with independent thermal management circuits and Class B voltage circuits.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date,

only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 528-2009 Rubber, Vulcanized or Thermoplastic - Determination of Tensile Stress-strain Properties

GB/T 711 Hot-rolled Quality Carbon Structural Steel Plates, Sheets and Wide Strips

GB/T 1173-2013 Casting Aluminum Alloy

GB/T 1690 Rubber, Vulcanized or Thermoplastic - Determination of the Effect of Liquids

GB/T 3190 Chemical Composition of Wrought Aluminum and Aluminum Alloys

GB/T 5231 Designation and Chemical Composition of Wrought Copper and Copper Alloys

GB/T 6031-2017 Rubber, Vulcanized or Thermoplastic - Determination of Hardness (hardness between 10 IRHD and 100 IRHD)

GB/T 6682-2008 Water for Analytical Laboratory Use - Specification and Test Methods

GB/T 14832-2008 Test Methods for Compatibility between Hydraulic Fluids and Standard Elastomeric Materials

GB/T 19596 Terminology of Electric Vehicles

GB 29743.1-2022 Motor Vehicle Coolant - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 19596, and the following are applicable to this document.

6.2.2 The exit-factory batch inspection items include appearance, color, odor, density, boiling point, freezing point, pH, conductivity, reserve alkalinity and foam tendency.

6.2.3 The exit-factory periodic inspection items include the items in 6.2.2, as well as ash content, chlorine content, sulfate content, effect on vehicle organic finishes, water content, static corrosion and high-temperature stability.

6.3 Batch Under the condition that raw materials and processes remain unchanged, each produced pot or multiple continuously produced pots of products evenly mixed are considered an inspection batch.

6.4 Sampling Sampling shall be carried out in accordance with the provisions of SH/T 0065. The sampling size of each batch of products shall meet the requirements of inspection and sample retention, or samples can be randomly selected from the packaged products for inspection and retention.

6.5 Determination Rules When the exit-factory inspection results comply with the requirements of Chapter 5, the batch of products is determined as qualified. When the type inspection results comply with the requirements of Chapter 5, the batch of products is determined as qualified in the type inspection.

6.6 Re-inspection Rules If the results of exit-factory inspection and type inspection do not meet the requirements of Chapter 5, a double size of samples shall be re-taken from the same batch of products, and the disqualified items shall be re-inspected. If the re-inspection results meet the requirements, then, determine in accordance with 6.5; if the re-inspection results still do not meet the requirements, then, determine it as disqualified.

7 Marking, Packaging, Transportation and Storage

7.1 The vehicle coolants shall be marked and packaged in accordance with the provisions of NB/SH/T 0164. The marking content shall include.

- a) Product name;
- b) Antifreeze type;
- c) Product classification and freezing point;
- d) How to use the concentrate product (see Appendix E for the specifications of dilution water);

Appendix A

(normative) Test Method for the Conductivity of Vehicle Coolants A.1 Principle

Measure-take 100 mL of the vehicle coolant specimen and use a conductivity meter to measure its conductivity. A.2 Instruments and Materials A.2.1 Conductivity meter. with an accuracy class of

0.5 and automatic temperature compensation function. In accordance with the conductivity range of the vehicle coolant, select the appropriate conductivity electrode. A.2.2 Measuring cylinder. with a capacity of 100 mL. A.2.3 Conical flask. with a capacity of 100 mL and a stopper. A.2.4 Constant temperature water bath. capable of controlling the temperature at 25 C 0.2 C. A.3 Test Steps A.3.1 In accordance with the requirements in the instructions for use of the conductivity meter, select the conductivity calibration solution with a suitable measurement interval to calibrate the conductivity meter and electrode. A.3.2 Use a measuring cylinder to measure-take 100 mL of the vehicle coolant specimen and pour it into a conical flask. Place it in a water bath that has been kept at a constant temperature of 25 C 0.2 °C for 20 minutes. A.3.3 Immerse the electrode in the specimen to determine the conductivity. Repeat the determination twice, and meanwhile, record the specimen temperature. A.3.4 When measuring specimens with a conductivity less than 3 S/cm, it is advisable to use a conductivity meter equipped with a sealed flow cell and measure in a

flowing state. A.4 Result Report Report the arithmetic mean of the two repeated determinations as the test result, accurate to 0.1 S/cm.

Appendix B

(normative) Test Method for the Static Corrosion of Vehicle Coolants B.1 Principle Prepare the typical metals used for the vehicle cooling system into test pieces, which are then grinded, cleaned and weighed, and assembled into a test piece bundle in a specified sequence. Place it in a test cup, pour in 750 mL of the vehicle coolant specimen, transfer it to the heating equipment, and under the conditions of test temperature 80 ± 2 °C and air flow rate 100 mL/min $\pm$ 10 mL/min, maintain it for 336 h $\pm$ 2 h. After the test, as required, respectively inspect the changes in the mass of the metal test pieces and the performance of the vehicle coolant. B.2 Instruments and Materials B.2.1 Instruments B.2.1.1 Test cup.

1,000 mL, tall, without spout, made of heat-resistant glass. Equipped with a rubber plug, with through holes for installing condenser, gas diffusion tube and thermometer. The assembly of the test components is shown in Figure B.1. B.2.1.2 Condenser. the condenser jacket is 400 mm long and is a straight-type reflux condensing tube. B.2.1.3 Gas diffusion tube. made of heat-resistant glass, with a tube length of 220 mm and an outer diameter of 8 mm, and a sand core glass diffusion head with a length of 30 mm and an outer diameter of 15 mm at the end. B.2.1.4 Thermometer. 20 ± 150 °C, with a division value of 1 °C, or an instrument with the same accuracy. B.2.1.5 Heating equipment. liquid bath heating, capable of controlling the temperature at 80 ± 2 °C, or an instrument with the same accuracy. B.2.1.6 Air flow meter. capable of controlling the air flow rate at 100 mL/min $\pm$ 10 mL/min. B.2.1.7 Balance. with a division value of

0.1 mg, and a maximum weighing not less than 200 g. B.2.2 Materials B.2.2.1 Metal test pieces. shall comply with the provisions of Table B.1. 2

---insulating washer; 8

---4043 aluminum test piece; 3

---T2 red copper test piece; 9

---6063 aluminum test piece; 4

---H70 brass test piece; 10

---brass bolt; 5

---20 steel test piece; 11

---steel washer; 6

---ZL101A cast aluminum test piece; 12

---brass washer. Figure B.2 -- Assembly of Test Piece Bundle B.4.2 Sample preparation The