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

GB/T 46439-2025

**Seamless stainless steel pipes for hydrogen powered vehicle
piping**

氢能源汽车管路用不锈钢无缝钢管

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Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting is scheduled.

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Jiang Laizhu, Zhang Sheng, Xu Ke, Gu Hua, Gao Liang Luo Lixin, Li Qi, Zheng Zizhuang, Wang Shaobing, Wang Jueguang, Zhu Xiaobin, Li Zimo, Zhang Guangjin, Xue Jianjun, Wei Xiaojin, He Xikou, Niu Bo, Shi Feifei Wen Dehong, Liu Yi, Gao Dejun, Gao Liming, Jiang Limei, Xing Bowen, Xue Jianzhong, Chen Yun. Seamless stainless steel pipes for hydrogen fuel cell vehicle piping

1 Scope

GB/T 46439-2025 is the Chinese national standard covering the stainless tube that carries hydrogen at high pressure in a fuel cell vehicle - the grade and its resistance to hydrogen embrittlement, the wall thickness and tolerances, the surface condition inside, and the burst and cycle testing. First edition, under the China Iron and Steel Association, in force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document specifies the classification, designation, ordering details, manufacturing process, technical requirements, and testing procedures for stainless steel seamless pipes used in hydrogen fuel cell vehicle pipelines. Testing methods, inspection rules, packaging, marking and quality certificates. This document applies to hydrogen gas with compressed hydrogen as the working medium, a rated working pressure not exceeding 70 MPa, and a medium temperature of -40°C to 85°C. Seamless stainless steel pipes for pipelines in new energy vehicles (passenger cars, buses, trucks and other road vehicles) (hereinafter referred to as "pipes").

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 222 Permissible Deviations in Chemical Composition of Finished Steel and Alloy Products

GB/T 223.11 Determination of Chromium Content in Iron and Steel and Alloys - Visual Titration or Potentiometric Titration

GB/T 223.25 Chemical Analysis Methods for Iron and Steel Alloys - Determination of Nickel Content by Gravimetric Method of Dimethylglyoxime

GB/T 223.28 Chemical Analysis Methods for Iron and Steel and Alloys-Determination of Molybdenum by the alpha-benzoic acid oxime Gravimetric Method

GB/T 223.36 Chemical Analysis Methods for Iron and Steel Alloys - Determination of Nitrogen Content by Distillation Separation-Neutralization Titration

GB/T 223.59 Determination of phosphorus content in iron and steel and their alloys - Bismuth-phosphomolybdenum blue spectrophotometric method and antimony-phosphomolybdenum blue spectrophotometric method

GB/T 223.60 Determination of silicon content in iron and steel and alloys by gravimetric method

GB/T 223.63 Determination of Manganese Content in Iron and Steel and Alloys - Sodium (Potassium) Periodate Spectrophotometric Method

GB/T 223.82 Determination of Hydrogen Content in Iron and Steel - Inert Gas Fusion-Thermal Conductivity or Infrared Method

GB/T 223.85 Determination of sulfur content in iron and steel and their alloys by infrared absorption method after combustion in an induction furnace

GB/T 223.86 Determination of total carbon content in iron and steel and their alloys by infrared absorption method after combustion in an induction furnace

GB/T 228.1 Metallic materials - Tensile testing - Part