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

GB/T 47107-2026

Platinum-carbon electrocatalyst for fuel cells

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1 Scope

GB/T 47107-2026 is the Chinese national standard covering the platinum on carbon catalyst of a PEM fuel cell - the platinum loading and particle size, the electrochemical surface area, the activity for oxygen reduction and the durability under cycling, on the component that is most of the cost of the stack. First edition. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the China Nonferrous Metals Industry Association. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the classification, technical requirements, test methods, inspection rules, marking, packaging, transportation, and storage of platinum-carbon electrocatalysts for fuel cells. Store the accompanying documents and order details. This document applies to platinum-carbon electrocatalysts with carbon materials as carriers and platinum as the main active component, primarily used in fuel cell cathodes.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. 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 5816 Determination of surface area of catalysts and adsorbents

GB/T 8170 Rules for rounding off numerical values and the representation and determination of limiting values

GB/T 15072.3 Chemical Analysis Methods for Noble Metal Alloys - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 fuel cell Electrochemical processes that directly convert the chemical energy of externally supplied fuel and oxidant into electrical energy (direct current) and generate heat and reaction products. Device. [Source: GB/T 20042.1-2017, 2.3.2]

3.2 The effective electrochemically active surface area per unit mass of platinum in the electrode that can participate in electrochemical reactions.

Note. The unit is square meters per gram of platinum (m²/gPt).

3.3 Mass activity; MA The current delivered by platinum per unit mass of electrocatalyst on the electrode of a fuel cell at 0.9V.

Note. The unit is amperes per milligram of platinum (A/mgPt@0.9VIR-free).

5 Membrane electrode test methods

GB/T 39285 Analytical Methods for Palladium Compounds - Determination of Chlorine Content - Ion Chromatography

GB/T 42208 Nanotechnology - Measurement of Nanoparticle Size in Multiphase Systems by Transmission Electron Microscopy Imaging
YS/T 372.8 Elemental Analysis Methods for Noble Metal Alloys - Determination of Cobalt Content in PtCo Alloys - EDTA Complexometric Titration
YS/T 372.9 Elemental Analysis Methods for Noble Metal Alloys - Determination of Nickel Content - EDTA Complexometric Titration
YS/T 1379 Chemical Analysis Methods for Pure Platinum, Palladium, Rhodium, Iridium, Ruthenium, Gold, Silver, Aluminum, Bismuth, Chromium, Copper, Iron, Nickel, Lead, Magnesium, Manganese, Tin, Zinc, Silicon Content determination by inductively coupled plasma atomic emission spectrometry