

ICS 31.030
CCS L 90



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

GB/T 28159-2025

Replacing GB/T 28159-2011

Electronic grade phosphoric acid

电子级磷酸

Issued on: August 29, 2025

Implemented on: March 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Foreword	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Requirements	6
5 Test methods	8
6 Inspection rules	18
7 Marking and labeling	20
8 Packaging, transportation, storage, and handling	20
9 Safety	21

1 Scope

This document specifies the requirements, inspection rules, marking, packaging, transportation, storage, and safety of electronic-grade phosphoric acid, and describes the corresponding test methods.

This document applies to electronic-grade phosphoric acid used in the semiconductor integrated circuit, chip, and display panel industries.

2 Normative references

GB/T 191
 GB/T 601
 GB/T 602
 GB/T 603
 GB/T 1282-2013
 GB 1886.15-2015
 GB/T 8170
 GB/T 11446.1
 GB 15258
 GB/T 23770

GB/T 25915.1

GB/T 34672-2017

3 Terms and definitions

This document does not contain any terms or definitions that need to be defined.

4.1 Appearance

Electronic grade phosphoric acid shall be a colorless and transparent liquid.

4.2 Specifications

Electronic grade phosphoric acid is divided into three grades. E1, E2, and E3. E1 grade is mainly used in the display panel industry, E2 grade is mainly used in the 8-inch integrated circuit industry, and E3 grade is mainly used in the 12-inch integrated circuit industry.

4.3 Technical requirements

The technical requirements for electronic-grade phosphoric acid shall comply with the provisions of Table 1.

5.1 General provisions

Unless otherwise specified, all reagents used in this document are analytical grade reagents, and the water used is EW-I electronic grade water as specified in GB/T 11446.1. Standard titration solutions, impurity standard solutions, preparations, and products used in the experiments, unless otherwise specified, are prepared in accordance with the provisions of GB/T 601, GB/T 602, and GB/T 603. The determination of metal ions, particle determination, solution preparation, and sample handling must all be carried out in a cleanroom of ISO Class 6 or higher as specified in GB/T 25915.1.

5.2 Visual inspection

Inject the specimen into a 50 mL colorimetric tube up to the 50 mL mark, and observe it against the light along the diameter of the colorimetric tube to see if it is a colorless and transparent liquid.

5.3.1 Gravimetric method (arbitration method)

Perform the procedure according to the method specified in A.4.1 of GB 1886.15-2015.

5.3.2.1 Principle

Phosphoric acid content is determined by titrating it with sodium hydroxide standard titration

solution using thymolphthalein as an indicator.

5.3.2.2 Reagents

5.3.2.2.1 Standard titration solution of sodium hydroxide. $c(\text{NaOH}) = 0.5 \text{ mol/L}$.

5.3.2.2.2 Thymolphthalein indicator solution. 1 g/L .

5.3.2.3 Analysis steps

Weigh approximately 1 g of the specimen, accurate to 0.0002 g. Place it in a 250 mL Erlenmeyer flask, add 80 mL of water and 5 drops of thymolphthalein indicator solution, and titrate with sodium hydroxide standard titration solution until the solution turns light blue, which is the endpoint.

5.3.2.4 Processing of experimental data

.....