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

GB/T 31246-2025

Replacing GB/T 31246-2014

Water treatment chemicals - Cationic polyacrylamides

水处理剂 阳离子型聚丙烯酰胺

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Standardization Administration of the PRC**

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This document serves as a replacement for GB/T 31246-2014 Water Treatment Chemicals - Technical Specification and Test Method of Cationic Polyacrylamides. In comparison with GB/T 31246-2014, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

---The structural formula is modified (see Chapter 4; Chapter 3 of Version 2014);

---Table 1 is modified, deleting the indicators of relative molecular mass, sulfate (SO₄) content, and chloride (Cl) content, adding the indicators of intrinsic viscosity and residue on ignition, and modifying the indicators of solid content, water-insoluble matter, and sieve residue (see Table 1; Table 1 of Version 2014);

---The test solution preparation method and calculation formula for intrinsic viscosity are modified (see

6.3.4.2 and 6.3.5;

5.2.5 of Version 2014);

---The relation between r and $[\eta]$ is deleted (see Table 2 of Version 2014);

---The determination method and calculation formula for cationic degree are modified (see 6.4;

5.3 of Version 2014);

---The method for determining the content of acrylamide monomer is modified from the single-point method to the working curve method (see 6.6;

5.5 of Version 2014). Please be noted that certain content of this document may involve patents. The issuing institution of this document does not undertake the responsibility of identifying these patents. This document was proposed by China Petroleum and Chemical Industry Federation. This document shall be under the jurisdiction of National Technical Committee 63 on Chemistry of Standardization Administration of China (SAC/TC 63). The drafting organizations of this document. CNOOC Tianjin Chemical Research and Design Institute Co., Ltd.; FEYMER Technology (Anhui) Co., Ltd.; SNF (China) Flocculant Co., Ltd.; Henan Hengju Chemical Co., Ltd.; Anhui Tianrun Chemical Industry Co., Ltd.; Anhui Jucheng Fine Chemicals Co., Ltd.; Shandong Nuor Biological Technology Co., Ltd.; Chongqing University; Ningxia Coal Industry Co., Ltd. of CHN Energy Group; Zhejiang Hailian New Material Technology Co., Ltd.; Daqing Refining & Chemical Company of PetroChina Company Limited; SOLENIS (Shanghai) Chemical Industry Co., Ltd.; Xinrui Guoyuan (Inner Mongolia) Technology Co., Ltd.; Ningxia Shuitou Qingshuiyuan Water Treatment Technology Co., Ltd.; Anhui University of Technology; Chengdu Huijin Water Development Co., Ltd.; Zhejiang Kechao Environmental Protection Co., Ltd.; Shanghai WSHINE Chemical Industry Water Treatment Chemicals - Cationic Polyacrylamides

1 Scope

GB/T 31246-2025 is the Chinese national standard covering cationic polyacrylamide as sold - the molecular weight expressed through the intrinsic viscosity, the charge density, the residual acrylamide monomer that is the health concern, the dissolution time and the insolubles that block a dosing line. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 31246-2014.

This document specifies the requirements, inspection rules, marking, packaging, transportation, and storage of cationic polyacrylamide as water treatment chemicals, and describes the corresponding test methods. This document applies to cationic polyacrylamide products used as water treatment chemicals. NOTE. this product is mainly used for flocculation treatment of industrial water and wastewater, as well as sludge dewatering treatment.

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 191 Graphical Symbols Marking for Handling and Storage of Packages

GB/T 602 Chemical Reagent - Preparations of Standard Solutions for Impurity

GB/T 603 Chemical Reagent - Preparations of Reagent Solutions for Use in Test Methods

GB/T 6003.1 Test Sieves - Technical Requirements and Testing - Part

3 Terms and Definitions

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

4 Structural Formula

Where, $m \geq 1$, $n \geq 1$; $R = H$ or CH_3 .

5 Requirements

5.1 Appearance. cationic polyacrylamide, as water treatment chemicals, is white or slightly yellow granule or powder.

5.2 Relative molecular mass. provided in accordance with user requirements. The calculation method is given in Appendix A.

5.3 The cationic polyacrylamide, as water treatment chemicals, which is determined in accordance with the corresponding test methods, shall meet the requirements of Table 1.

6 Test Methods

WARNING. the strong acid used in this document is corrosive. During use, avoid inhalation or skin contact. If splashed on the skin, immediately rinse with plenty of water. In severe cases, immediately seek medical attention.

6.1 General Rules Unless otherwise specified, only analytical grade or higher reagents and Grade-3 water conforming to GB/T 6682-2008 shall be used in this document. Unless otherwise specified, standard solutions, preparations and products required for impurity determination in the tests shall be prepared in accordance with the provisions of GB/T 602 and GB/T 603.

6.2 Appearance Judgment Under natural light, visually judge the color on a white-backed petri dish or white porcelain plate.

6.3 Determination of Intrinsic Viscosity

6.3.1 Method summary Prepare the specimen into a dilute solution of a certain concentration and use an Ubbelohde viscometer to determine its intrinsic viscosity.

6.3.2 Reagents or materials

6.3.2.1 Sodium chloride solution I.

6.3.2.2 Sodium chloride solution II. 117.0 g/L.

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