

## 聚丙烯酰胺 Polyacrylamide (PAM)



## 产品概述

聚丙烯酰胺系列产品外观白色至淡黄色自由流动粉末或颗粒，是一种线型高分子聚合物，具有良好的热稳定性和光稳定性，常温下为白色或微黄色的固体。在水中可迅速溶解，形成无色或微黄色的溶液。其分子链上含有酰胺基，具有良好的水溶性和化学活性，易于形成氢键和交联反应。聚丙烯酰胺的分子量可以从数千到数百万，具有长径比可达100000的特点，分子链柔顺且易缠结。



## 性能特点

1. 絮凝强度大、沉降速度快；
2. 可明显减少其他絮凝剂使用量，降低成本；
3. 良好的配伍性；
4. 适用水质范围广。

## 技术指标

水处理剂阴离子和非离子型聚丙烯酰胺还应符合表1要求。

表1

| 项 目               | 指 标    |       |
|-------------------|--------|-------|
|                   | 一等品    | 合 格 品 |
| 固含量(固体)/%         | ≥ 90.0 | 88.0  |
| 丙烯酰胺单体含量(干基)/%    | ≤ 0.02 | 0.05  |
| 溶解时间(阴离子型)/min    | ≤ 60   | 90    |
| 溶解时间(非离子型)/min    | ≤ 90   | 120   |
| 筛余物(1.00 mm 筛网)/% | ≤ 2    |       |
| 筛余物(180 μm 筛网)/%  | ≥ 88   |       |
| 水不溶物/%            | ≤ 0.3  | 1.0   |
| 氯化物含量/%           | ≤ 0.5  |       |
| 硫酸盐含量/%           | ≤ 1.0  |       |

本产品中一等品可用于生活饮用水处理，其还应符合《生活饮用水化学处理剂卫生安全评价规范》及相关法律法规要求。

水处理剂阳离子型聚丙烯酰胺按相应的试验方法测定，应符合表2要求。

表2

| 项 目   | 指 标                      | 试验方法  |
|---|--------------------------|-------|
| 相对分子质量，M                                      | $M \geq 100 \times 10^4$ | 5. 2  |
| 阳离子度，w/%                                      | $5.0 \leq w \leq 95.0$   | 5. 3  |
| 固含量，w <sub>1</sub> /%                         | $w_1 \geq 88.0$          | 5. 4  |
| 丙烯酰胺单体含量(干基)，w <sub>2</sub> /%                | $w_2 \leq 0.10$          | 5. 5  |
| 溶解时间(1g/L)，t/min                              | $t \leq 60$              | 5. 6  |
| 水不溶物，w <sub>3</sub> /%                        | $w_3 \leq 0.30$          | 5. 7  |
| 筛余物(1.40 mm 筛网)，w <sub>4</sub> /%             | $w_4 \leq 5$             | 5. 8  |
| 筛余物(180 μm 筛网)，w <sub>5</sub> /%              | $w_5 \geq 85$            | 5. 8  |
| 硫酸盐(SO <sub>4</sub> )含量，w <sub>6</sub> /(g/g) | $w_6 \leq 0.05$          | 5. 9  |
| 氯化物(Cl)含量，w <sub>7</sub> /(g/g)               | $w_7 \leq 0.05$          | 5. 10 |

## 产品用途

在水处理中与活性炭等配合使用，可用于生活中悬浮颗粒的凝聚、澄清。用有机絮凝剂丙烯酰胺代替无机絮凝剂，即使不改造沉降池，净水能力也可提高20%以上；在污水处理中，采用聚丙烯酰胺可以增加水回用循环的使用率，还可用作污泥脱水；工业水处理中用作一种重要的配方药剂。

## 包装与贮存

1. 25kg/袋，采用三合一复合牛皮纸防潮袋包装。
2. 本产品储存保管时应注意防潮、防火、防高温，要求存放在通风、干燥处。



## Product Overview

The polyacrylamide series products appear as white to light yellow freely flowing powders or granules. They are linear high molecular weight polymers, possessing excellent thermal and photostability, and exist as white or slightly yellow solids at room temperature. These products dissolve rapidly in water, creating a colorless or slightly yellow solution. The molecular chains of polyacrylamide contain amide groups, endowing it with good water solubility and chemical reactivity, facilitating the formation of hydrogen bonds and cross-linking reactions. The molecular weight of polyacrylamide can range from thousands to millions, with a unique aspect ratio of up to 100,000. Its molecular chains are flexible and prone to entanglement.

## Characteristics

1. High flocculation intensity and fast sedimentation rate;
2. It can significantly reduce the usage of other flocculants, thereby lowering costs;
3. Good compatibility;
4. Wide range of applicable water quality.

## Technical Specification

The anionic and nonionic polyacrylamide of water treatment agents should also meet the requirements in Table 1.

Table 1

| Project                                  | Indicators          |                   |
|--|---------------------|-------------------|
|  | First-class product | qualified product |
| Solid content (solid)/%                  | ≥ 90.0              | 88.0              |
| Acrylamide monomer content (dry basis)/% | ≤ 0.02              | 0.05              |
| Dissolution time (anionic type)/min      | ≤ 60                | 90                |
| Dissolution time (non-ionic type)/min    | ≤ 90                | 120               |
| Sieve residue (1.00 mm sieve)/%          | ≤ 2                 |                   |
| Sieve residue (180 μm sieve)/%           | ≥ 88                |                   |
| Water insoluble matter/%                 | ≤ 0.3               | 1.0               |
| Chloride content/%                       | ≤ 0.5               |                   |
| Sulfate content/%                        | ≤ 1.0               |                   |

The first-class product in this product can be used for drinking water treatment, and it should also comply with the "Hygienic Safety Evaluation Specification for Chemical Treatment Agents in Drinking Water" and relevant laws and regulations.

Cationic polyacrylamide, a water treatment agent, should meet the requirements of Table 2 when measured according to the corresponding test method.

Table 2

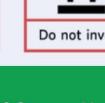
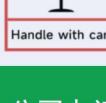
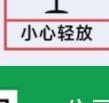
| Project   | Indicator                | Test Method |
|---|--------------------------|-------------|
| relative molecular mass,M                                 | $M \geq 100 \times 10^4$ | 5.2         |
| Cationic degree,w/%                                       | $5.0 \leq w \leq 95.0$   | 5.3         |
| Solid content,w <sub>1</sub> /%                           | $w_1 \geq 88.0$          | 5.4         |
| Acrylamide monomer content (dry basis),w <sub>2</sub> /%  | $w_2 \leq 0.10$          | 5.5         |
| dissolution time(1g/L),t/min                              | $t \leq 60$              | 5.6         |
| water-insoluble substance,w <sub>3</sub> /%               | $w_3 \leq 0.30$          | 5.7         |
| Sieve residue (1.40 mm sieve),w <sub>4</sub> /%           | $w_4 \leq 5$             | 5.8         |
| Sieve residue (180 μm sieve),w <sub>5</sub> /%            | $w_5 \geq 85$            | 5.8         |
| Sulfate (SO <sub>4</sub> ) content, w <sub>6</sub> /(g/g) | $w_6 \leq 0.05$          | 5.9         |
| Chloride (Cl) content,w <sub>7</sub> /(g/g)               | $w_7 \leq 0.05$          | 5.10        |

## Applications

In water treatment, it can be used in conjunction with activated carbon and other agents for the coagulation and clarification of suspended particles in domestic water. By replacing inorganic flocculants with organic flocculants such as acrylamide, the water purification capacity can be increased by more than 20% even without modifying the sedimentation tank. In wastewater treatment, polyacrylamide can be used to increase the utilization rate of water reuse cycles and also for sludge dewatering. It is also an important formulation agent in industrial water treatment.

## Package and Storage

1. 25kg/bag, packaged in a three-in-one composite kraft paper moisture-proof bag.
2. When storing and keeping this product, attention should be paid to moisture prevention, fire prevention, and high temperature prevention. It is required to be stored in a ventilated and dry place.



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