

## PRODUCT DATA SHEET

# ART-P182

## High Range Slump Retaining Type Polycarboxylate Superplasticizer Powder

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### Description

ART-P182 is a high-slump-retention polycarboxylate superplasticizer powder independently developed by ARIT with full intellectual-property rights. Using a tailor-made polyether as the main feedstock, slow-release groups are grafted directly onto the molecular backbone during synthesis, giving the admixture an ultra-long sustained-release capability and marking a technical breakthrough from high-slump-retention liquid to high-slump-retention powder. With an extended, gentle release profile and excellent paste cohesion, it is ideally suited for cementitious mortars and concretes that demand prolonged slump retention.

### Main benefits/Characteristics

- **Extended Slump Retention:** Delivers a steady release for over 3 h, maintaining concrete slump and keeping the mix fluid throughout transport and placing.
- **Gentle Release Profile:** Disperses slowly in the early, middle and late stages, preserving excellent workability under every job condition.
- **Excellent Water Solubility:** Dissolves completely and instantly, disperses uniformly without lumping, and is easy to use.
- **High Compactness:** Distributes evenly in the binder, markedly lowers porosity, raises paste density and secures stable strength growth at all ages.

## Applications

- Mortars requiring long-flow retention
- Dry-mix mortars
- Ready-mixed commercial mortars
- Other cementitious mortar and concrete systems

## Physical and chemical indicators

Items	Performance
Appearance	White or yellowish powder
Solid Content /%	$\geq 99.5$
pH	$5.0 \pm 1$
Bulk Density ( $\text{kg/m}^3$ )	300-600
Moisture Content	$\leq 0.5\%$

## Application Case

- High-strength grout for wind-tower flange connection

On a coastal project, C110 non-shrink grout for the flange joint at the base of wind-tower cylinders was prepared with ARIT-P182 high-slump-retention powder. The mix stayed highly fluid for more than 2 h, placed full and dense without bleeding or segregation, and developed steady early- and late-age strengths.

- Ready-mixed commercial mortar

At a Nanjing job site, ARIT-P182 guaranteed mortar workability after long hauls. The hardened mortar finished smooth and flat, meeting both appearance and strength requirements.

- Southeast-Asia port expansion

A wharf extension required concrete to travel  $> 45$  km from a central batch plant, taking up to 2 h. Slump loss and pump blockages had been frequent. After blending in ARIT-P182, the concrete still showed 210 mm slump at 2 h, pumped without interruption, and finished dense and smooth.

- High-temperature infrastructure in Riyadh

For a major Saudi Arabian road project, ambient temperatures reach  $40\text{--}45$  °C and haul distances are  $\sim 60$  km. Conventional mixes lost slump rapidly. With ARIT-P182, slump loss was only 15 mm after 3 h; the concrete placed easily, pumped smoothly, and gained stable

strength, meeting all durability demands in extreme heat.

### **Usage Instruction**

- The recommended effective solids content is 0.02 % - 0.15% of the total cementitious materials; the exact dosage must be predetermined through trial tests according to the raw materials, job-site conditions, construction codes, and technical requirements.
- Any change in materials or environmental conditions may also cause the dosage to vary within a certain range, so new tests are required to re-establish the optimum dosage.
- Keep protected from moisture during use.

### **Complies with the Following Standards**

GB/T 8076-2008

ASTM C494 TYPE A

EN934-2

### **Packaging**

25kg bag for customer demand

### **Storage**

- It should be stored in a cool and dry place, avoiding direct sunlight, and kept in a dedicated warehouse or a fixed location.
- The effective storage period is 1year. It can still be used after being tested and verified to be qualified if it exceeds the time limit.

### **Precautions**

- When changing the type of cement or using newly delivered cement, a compatibility test should be conducted.
- Do not use in combination with naphthalene-based admixtures. When using in combination with other admixtures, compatibility tests should be performed.
- Strictly follow the construction specifications during application.
- The product information is only used to describe the product's characteristics and functions, and it is not a guarantee. Users are also required to carefully test the product's functions and its suitability. The functions and suitability of the product must be verified

through testing conducted by qualified professionals.

### **Legal Notes**

- Retaining or disclosing product samples without the company's explicit permission is strictly prohibited.
- In addition to the product quality itself, the actual performance also depends on other uncontrollable factors. If there are uncontrollable factors, company cannot guarantee the performance of the product.
- Users are requested to strictly follow the technical guidance and product instructions for use. The company shall not be liable for any consequences resulting from unauthorized changes to the product usage method without the company's authorization.