

## PRODUCT DATA SHEET

### ART-M171

High Range Water Reducing Type Polycarboxylate Superplasticizer  
Origin Liquor

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#### Description

ART-M171 is a HPEG based water-reducing admixture, which promotes the workability of concrete with good dispersion, anti-mud and anti-stone powder effects, ultra-high water reduction, self-leveling and high durability.

#### Main benefits/characteristics

- **High Water Reducing Rate:** The maximum water reduction rate can exceed 50%, and the dosage can be adjusted according to different application scenarios to meet usage requirements. Under the action of high-dispersion adsorption groups, it can significantly improve the fluidity and compactness of concrete.
- **Good Anti Adsorption Effect:** It can effectively inhibit the excessive adsorption of water-reducing agents by cement particles, and still has good continuous dispersion ability for materials with high mud content and high powder content.
- **Good Workability:** It can quickly and evenly disperse cement particles, making the concrete appear in a state of low viscosity, smoothness, uniformity, and non-segregation. After molding, the concrete surface is smooth and the strength is high.
- **Good Adaptability:** It has excellent adaptability to most cement, admixtures, and different types of aggregates on the market.

## Applications

- Ordinary ready-mixed concrete
- Precast concrete and prestressed concrete
- High-strength, high-performance structural concrete
- Manufactured-sand concrete

## Physical and chemical indicators

Items	Performance
Appearance	Yellow or dark brown liquid
Solid content/%	50.0±1
pH	6±1
Alkali content ( as Na <sub>2</sub> O )	≤0.5%
Density/g/cm <sup>3</sup>	1.10±0.02
Chloride content	≤0.1%

## Application Case

- High-stone-powder ready-mixed concrete

A commercial plant in Guangdong was using aggregate with a very high stone-powder content; slump loss was so rapid that the mix could not meet jobsite demands. After switching to ART-M171, the concrete retained its 1-hour slump with no loss, keeping the pour workable from start to finish.

- High-speed-rail precast girders

A precast beam yard in Jiangsu introduced ART-M171; paste fluidity improved markedly, the mix stayed homogeneous with no bleeding or segregation. Striking the moulds revealed a smooth, dense surface free of blow-holes or honeycombing, raising the visual quality of every girder.

- High-strength concrete

A high-rise project in Shanxi specified C80 pump-grade concrete. With ART-M171 the mix remained highly flowable and stable even at a low water-binder ratio. Pump-line pressure dropped roughly 15 %, giving trouble-free placement. The hardened concrete is dense, gains strength steadily and shows P12 impermeability; carbonation depth is 42 % lower than the

reference mix, meeting the durability demands of super-tall structures.

- Self-compacting concrete

For a metro project in Nanjing, C50 self-compacting concrete was required. ART-M171 imparted excellent dispersion and viscosity reduction, producing a mix that flowed and self-levelled without bleeding or segregation. The cast sections are fully compacted and exhibit a smooth, high-quality finish.

### **Usage Instructions**

- The recommended effective solids content is 0.15 %–0.25% 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.

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

GB/T 8076-2008

ASTM C494 TYPE F

EN934-2

### **Packaging**

IBC Tank or Flexitank 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 1 year. 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.