

PRODUCT DATA SHEET

ART-S35

Low Sensitivity and High Range Slump Retaining Type

Polycarboxylate Superplasticizer Origin Liquor

Description

ART-S35 is a low-sensitivity, high-slump-retention polycarboxylate superplasticizer independently developed by ARIT with full intellectual-property rights. By virtue of a unique star-shaped polymer topology, precisely controlled slow-release functional groups are embedded along the main chain, enabling an optimal balance between initial dispersion and sustained slump retention. Even under the demanding condition of a low initial slump (80 - 120 mm), the admixture markedly retards early cement hydration and the re-agglomeration of cement particles, keeping fresh concrete flow-stable for more than 4 h. This effectively overcomes the sharp slump-loss drawback of conventional superplasticizers in low water-to-binder systems. Optimized ratios of anchoring groups and steric-hindrance side chains greatly reduce sensitivity to fluctuations in cement mineralogy, supplementary cementitious materials (fly ash, slag) or ionic composition of mixing water. Consequently, ART-S35 delivers outstanding performance stability and environmental adaptability despite variations in raw-material source or batch.

Main benefits/Characteristics

- **Low Dosage Sensitivity:** Remains stable across a wide dosage range, offering high controllability.
- **Excellent Compatibility:** Works well with most commercial cements, supplementary materials, and various aggregate types.

- **Long Slump Retention:** Provides sustained release for over 4 hours, maintaining stable slump. Especially effective in low-slump concrete, ensuring consistent workability during transport and placement.
- **Good Workability:** Delivers optimal paste viscosity, improving concrete workability to meet diverse construction needs.
- **Enhanced Durability:** Significantly reduces concrete shrinkage and improves long-term durability.

Applications

- Concrete systems with highly variable raw materials
- Hot-weather and cold-weather concreting
- Low-binder, high-SCM concrete systems
- Bleeding- and segregation-prone concrete
- Manufactured-sand concrete
- Extended-placement concrete
- Long-haul transport concrete
- Mass concrete

Physical and chemical indicators

Items	Performance
Appearance	Colorless transparent liquid
Solid content/%	50±1
pH	6.0±1
density/g/cm ³	1.10±0.02
Alkali content (as Na ₂ O)	≤0.5%
Chloride content	≤0.01%

Application Case

- Large-scale continuous foundation-slab pour

A Jiangsu commercial-complex raft is 2.5 m thick and was cast in a single, long shift. With ART-S35 the low-slump concrete held its workability for 6 h, practically eliminating slump loss, cold joints and thermal cracking and giving a monolithic, defect-free slab.

- Ordinary ready-mixed concrete

A Zhejiang supplier had to haul concrete > 2 h to an infrastructure site where aggregate quality varied from load to load. ART-S35 kept the mix stable for 4 h without segregation or bleeding; its low-sensitivity chemistry cancelled the effect of raw-material fluctuations and guaranteed successful long-distance pumping even in midsummer heat.

- High-rise construction in hot weather

A Fujian super-tower was cast when ambient temperature exceeded 35 °C and pumping heights were large. ART-S35 gave a controllable initial slump and retained good workability after 2 h of transport and pumping, enabling continuous lifts and meeting all strength requirements.

- Underwater pile for a nuclear power plant, South China

Large-diameter piles were placed underwater at a slow pace, demanding long-lasting fluidity and strong resistance to segregation. At low slump the concrete with ART-S35 stayed flowable for > 5 h and proved insensitive to batch-to-batch changes in cement and fly ash, securing continuous, defect-free placement of these safety-critical elements.

Usage Instructions

- 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.
- It is recommended to combine this product with a water reducing polycarboxylate superplasticizer to achieve optimal performance.

Complies with the Following Standards

GB/T 8076

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.
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- 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.