

PRODUCT DATA SHEET

ART-SP11

Powdered Accelerator

Description

ART-SP11 water-soluble, high-performance, powdery, alkali-free accelerator masterbatch (early-strength type) is based on aluminum sulfate; it is non-toxic, harmless, non-radioactive and non-corrosive, and it is neither flammable nor explosive.

Main benefits/Characteristics

- **High Early Strength:** delivers outstanding early-age performance; mortar compressive strength exceeds 1 MPa at 6 h.
- **Lower Shipping cost:** compared with liquid accelerators, packaging and freight costs are greatly reduced, giving better economy.
- **Excellent Freeze Resistance:** overcomes the poor freeze - thaw stability typical of liquid alkali-free accelerators.
- **High Stability:** simple on-site reconstitution — just add water, stir and use; dissolves rapidly, does not segregate and is ready whenever needed.

Applications

- Suitable for shotcrete works in highways, railways, hydropower projects, mines, etc., employing wet-mix spraying processes.

Physical and chemical indicators

Items	Performance
Appearance	Grey-white or beige powder

Solid content/%	≥99.5
pH	2.5±0.5
Alkali content (as Na ₂ O)	≤1%
Chloride content	<0.05%

Application Case

- Railway tunnel

A control tunnel on a Sichuan–Tibet Railway section, developed in heavily karstified ground with large inrushes of water, was experiencing severe shotcrete fall-off that refused to stick to the wet rock face and threatened both support quality and schedule. After introducing ARIT-SP11, the mix flash-sets on contact, gains early strength rapidly and stops the slabs from dropping, cutting rebound and allowing the drive to proceed.

Usage Instructions

- The dosage of the finished liquid accelerator varies with concrete and ambient temperature, especially with cement compatibility. For Portland or ordinary Portland cement, the dosage range is 6 % - 9 %.
- The accelerator is pumped and mixed with the concrete at the nozzle. Owing to its viscosity, remove any filter screen on the accelerator hose to prevent suction problems.
- Before use, flush the accelerator pump thoroughly. Never mix this product with any other accelerator; chemical interaction may cause pump blockage.

Complies with the Following Standards

GB/T 35159-2017

ASTM C1141 / C1141M-15

EN 934-5

Packaging

Standard 25 kg / 40 kg bags or 1-ton bulk bags; special packaging available on request.

Storage

- Storage: Keep in a cool, dry place away from direct sunlight; store in a dedicated warehouse or fixed area.

- Powder masterbatch: Ensure inner and outer bags are intact to prevent moisture uptake. After mixing into liquid, maintain temperature $> 5^{\circ} \text{C}$ and store in plastic or fiberglass tanks. The product is slightly acidic and will react with steel—do not use iron drums.
- Shelf life: 2 years for sealed powder masterbatch; 3 months after conversion to liquid. If liquid has stood for a long time, brief stirring before use will eliminate any slight visual stratification.

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.