

PRODUCT DATA SHEET

ART-SL15

Alkali-Free Liquid Accelerator

Description

ART-SL15 is a high strength alkali-free liquid accelerator which has the advantages of rapid setting, good early strength, strength enhancement, micro-expansion, crack resistance, impermeability and corrosion resistance. It is non-toxic, non-flammable, non-corrosive to steel and harmless to human health. It is a high-performance alkali-free shotcrete accelerator used in the wet-mix spraying process and is particularly useful for rapid-hardening concrete and quick-setting concrete. It has good early strength and long-term strength retention rate. Compared with the main accelerator products on the market, it has obvious advantages in technical performance index and cost performance.

Main benefits/Characteristics

- **Low Dosage, Fast Setting:** 6% to 9%, with significant rapid-setting effects and a short interval between initial and final setting times.
- **Excellent Early Strength:** Good early strength development and sustained early strength. The 1-day compressive strength of mortar specimens can exceed 18 MPa, with minimal impact on later strength. The 28-day compressive strength ratio can reach 100-110%, and the 90-day compressive strength retention rate can reach 100-120%.
- **Low Rebound Rate:** Less than 10%.
- **Micro-Compensation for Shrinkage:** Effectively prevents cracking after shotcrete forming.
- **Good Durability:** Contains no alkaline substances and has low chloride ion content,

with no adverse effects on the durability of concrete.

- **Environmental Friendliness:** Low dust, no irritating odor, non-corrosive to steel reinforcement, non-toxic and harmless—environmentally friendly.

Applications

- Underground engineering

Mine roadways, traffic tunnels, hydraulic tunnels, underground railways and all kinds of underground tunnels(underground power station, warehouse, etc.) of the supporting lining of the shotcrete.

- Rock engineering

Support in wall slopes, excavations, embankments, reservoir engineering , water channels, etc.

- Repair and reinforcement works

Bridges, seawalls, repair dams, docks, cooling towers, chimneys and the reinforcement of buildings, and the chemical corrosion of oilfields, the building structure repair such as fires, earthquakes, explosion shock overload or poor construction, etc.

- Protection engineering

All kinds of structure of the fire and corrosion protection, as well as waterproof and plugging engineering.

- Fire resistant engineering

The construction and repair of the chimneys and various thermal furnace pits.

Physical and chemical indicators

Items	Performance
Appearance	milky white liquid
Solid Content /%	50±2.5
pH	3.0±1
Alkali content	≤1%
Density/g/cm ³	1.45±0.03
Chloride content	≤0.1%

Application Case

- Railway tunnel

On a tunnel section of the Yong–Guang Railway, shotcrete operations suffered high rebound, an irritating odour after spraying, and core strengths that failed specification. After switching to ARIT-SL15, dosage dropped from 8–9 % to 4–5 %, rebound decreased markedly, progress accelerated, and 1-day compressive strength reached 12.3 MPa.

Usage Instructions

- Dosage range: 6–9 % by mass of cementitious material; adjust within this range for cement compatibility, temperature and construction method.
- Use only the designated mix dosage and follow all construction codes.
- Spray evenly, flat and compact, strictly to specification.
- Check compatibility with any other admixtures to avoid precipitation or blockages.
- Cure as required by project conditions.
- Suitable pumps: peristaltic (hose), diaphragm, rotor-stator, gear; avoid piston and ball-/seat-valve pumps.
- Maintain substrate and ambient temperature $\geq 5\text{ }^{\circ}\text{C}$.
- Keep containers tightly sealed to prevent surface skinning.

Complies with the Following Standards

GB/T 35159-2017

ASTM C1141 / C1141M-15

EN 934-5

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; Store at 5 – 35° C.
- The effective storage period is 3 months. 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.