

PRODUCT DATA SHEET

ART- SL16

Alkali Free Liquid Accelerator

Description

ART-SL16 is a high-strength, alkali-free liquid accelerator independently developed by ARIT with full intellectual-property rights. It offers rapid setting, high early strength, strength enhancement, slight expansion, crack & impermeability resistance, and corrosion protection without attacking reinforcement or harming the environment or operators. The admixture gives concrete a pronounced flash-set, making it ideal for mixes that must harden quickly: hourly strength develops fast while both early and long-term strength retention remain high. Its technical performance and cost-effectiveness clearly surpass those of most commercial accelerators.

Main benefits/Characteristics

- **Low Dosage, Rapid Setting:** At 6 - 9% dosage, delivers pronounced flash-set with a short interval between initial and final set.
- **High Early Strength:** Mortar specimens reach ≥ 2 MPa at 6 h and >15 MPa at 1 d; negligible effect on later-age strength—28-day compressive-strength ratio 100 - 110%, 90-day retention 100 - 120%.
- **Low Rebound:** $<10\%$ thanks to fast stiffening and excellent sprayability.
- **Slight Shrinkage Compensation:** Prevents cracking after spraying.
- **Superior Durability:** Alkali-free, very low chloride, no adverse effect on concrete durability.
- **Environmental Friendliness:** Low dust, no irritating odor, non-corrosive to steel

reinforcement, non-toxic and harmless—environmentally friendly.

Applications

- Underground works

Shotcrete support and lining for mine roadways, traffic tunnels, hydraulic tunnels, subways, and all kinds of underground chambers (power stations, warehouses, etc.).

- Geotechnical works

Slope, foundation-pit, reservoir, embankment, channel and pool protection.

- Repair and strengthening

Strengthening of bridges, sea walls, dams, wharves, cooling towers, chimneys and buildings; repair of structures damaged by chemical attack, fire, earthquake, blasting, overload or poor construction.

- Protective works

Fire- and corrosion-resistant layers, and waterproof plugging projects.

- Refractory works

Construction and repair of chimneys and various industrial kilns.

Physical and chemical indicators

Items	Performance
Appearance	Milky white liquid
Solid Content /%	55±2.75
pH	3.0±1
Alkali content (as Na ₂ O)	≤1.0%
Density /g/cm ³	1.45±0.03
Chloride content	≤0.1%

Application Case

- Railway Tunnel

On a tunnel section of the Shenmao Railway, shotcrete operations suffered high rebound and high accelerator dosage; the accelerator irritated workers' skin and caused later-age strength loss. After switching to our ARIT-SL16, accelerator dosage dropped from 8 % to 6 %, rebound fell from 25 % to 12 %, the job became green and safe, and the 28-day compressive-strength ratio reached 105 %.

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 $\geq 5^{\circ}$ C.
- Keep containers tightly sealed to prevent surface skinning.

Packaging

IBC Tank or Flexitank for customer demand

Storage

- It should be stored in a cool and dry place (5° C - 35° C), avoiding direct sunlight, and kept in a dedicated warehouse or a fixed location.
- 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.