ARIT奥莱特

PRODUCT DATA SHEET

ART-M13

Water Reducing Admixture

Description

ART-M13 is a polycarboxylate high-performance superplasticizer independently developed by ARIT. Based on a directionally optimized molecular structure design, it delivers rapid dispersion efficiency and efficient viscosity reduction, effectively breaking through the viscous interval of cementitious slurries in C60-C100 high-strength concrete. This enhances slurry fluidity while optimizing yield stress, achieving synergistic improvement between high strength and workability. Its eco-friendly molecular architecture employs sustainable formulations with low-carbon production processes. The product is non-toxic, non-corrosive, non-flammable, non-explosive, and exhibits no corrosion to steel reinforcement, fully complying with national environmental safety standards. Incorporating rapid dispersion, sustained viscosity reduction, and low dosage features, ART-M13 integrates advanced technical performance with ecological sustainability through green chemistry innovation.

Main benefits/Characteristics

- Superior Water Reduction Efficiency: Through directionally optimized molecular architecture and adsorption-dispersion synergy, cement particle dispersion efficiency is significantly enhanced, breaking traditional superplasticizer performance boundaries. This enables concrete to maintain excellent fluidity under low water-cement ratios while improving paste coating properties, providing critical performance support for high-strength/self-compacting concrete systems.
- Multi-Component Synergistic Compatibility:It can be seamlessly integrated into the

polycarboxylate-based water-reducing admixture, retarder, air-entraining agent, and mineral admixture system. By synergistically enhancing the intermolecular charge regulation and steric hindrance effect, it can flexibly adapt to the needs of different engineering scenarios. For example, it can adjust the setting time gradient, optimize the air content distribution, or improve the durability indicators, thereby achieving customized concrete solutions.

- Enhanced Environmental Robustness: Features anti-interference molecular frameworks that maintain stable rheological performance despite raw material variations (e.g., cement quality fluctuations, aggregate mud content changes) or process deviations (e.g., shortened mixing times, extended transportation distances). This minimizes construction anomalies and ensures continuous quality control in engineering applications.
- Sustained Workability Retention: Incorporates thixotropic modifying groups and slow-release functional units to establish a dynamic viscoelastic control system. Effectively suppresses segregation and bleeding under high-temperature conditions or prolonged transportation, maintaining slump loss rates below industry benchmarks. Reduces frequency of admixture compensation during construction, improving operational efficiency.
- Manufactured Sand Adaptation Technology: Addresses high fines content and discontinuous grading in artificial aggregates through surface charge modification and steric hindrance effects. Optimizes interfacial transition zone (ITZ) microstructure, ensuring paste viscosity stability even in high-absorption manufactured sand systems. Balances fresh concrete workability with post-curing strength development.
- Broad Compatibility Platform: Leverages modular molecular design principles to achieve compatibility with silicate cements, slag micropowder, fly ash, and other cementitious materials. Supports C30-C80 full-grade concrete systems, covering self-compacting concrete, ultra-high-rise pumping concrete, and other specialized applications. Demonstrates cross-system technical versatility across concrete formulations.
- Volume Stability Optimization: Employs composite shrinkage suppression technology (combining chemical shrinkage reduction and physical compensation mechanisms) to

mitigate early-age plastic shrinkage and long-term drying shrinkage risks. Enhances crack resistance through microstructural densification effects, meeting stringent crack control requirements for underground structures and mass concrete applications.

Items	Performance
Appearance	Wine red or brown liquid
Solid Content /%	45.0±0.5
pH	6.0±1
Alkali content (as Na_2O)	≤0.05%
Chloride content	None

Applications

- Various engineering precast concrete
- Precast commercial concrete
- Precast component concrete
- Mechanism sand mixed concrete

Physical and chemical indicators

Recommended Dosage

0.2% to 2.0% weight of binder

Pre-testing must be performed to determine the exact dosage rate

Packaging

Drums or flowbins for customer demand

Storage

Store in undamaged, original sealed packaging in dry conditions.

Protect product from direct sunlight.

A minimum shelf life of 12 months under normal storage conditions. Shelf life may be greater than stated depends on storage conditions.

LEGAL NOTES

It is prohibited to retain or disclose samples of the product without the company's permission.

In addition to the product quality itself, the actual performance also depends on other factors. If there are factors beyond our control, we cannot guarantee the performance of the product.

Users are requested to strictly follow the technical guidelines and product instructions for use. The company shall not be held liable for any consequences resulting from unauthorized changes to the product's usage without the company's authorization.