



SP-500K (Polycarboxylic)

Technical Data Sheet

Polycarboxylic ether superplasticizer for the production of high-quality ready-mix concrete with low water cement ratio.

Description:

SP-500K has been primarily developed for applications in the ready mixed and precast concrete industries where the highest durability and performance is required.

Super plasticizing action of **SP-500K** is different than conventional super plasticizers based on sulfonated melamine and naphthalene formaldehyde condensate which create electrostatic repulsion of particles.

SP-500K initially create the same electrostatic repulsion and further stabilizes the mixes due to static repulsion of long lateral chains linked to the polymer backbone.

Advantages

During mixing and placement:

- High workability without segregation or bleeding
- Can be placed and compacted in congested reinforcement
- Reduced labor requirement
- Improved surface finish
- Chloride free

Effect on hardened concrete properties:

- Increased early and ultimate compressive strengths
- Increased flexural strength
- Higher E modulus
- Improved adhesion to reinforcing and stressing steel
- Better resistance to carbonation
- Lower permeability
- Better resistance to aggressive atmospheric conditions
- Reduced shrinkage and creep
- Increased durability

Uses

The excellent dispersion properties of **SP-500K** make it the ideal admixture for precast and ready mixed concrete where low water cement ratios are required. This property allows the production of very high early and high ultimate strength concrete with minimal voids and therefore optimum density. Due to the strength development characteristics the elimination or reduction of steam curing in precast works be considered as an economical option.

BENEFITS

SP-500K offers the following benefits for:

The ready-mix producer:

- Capability of delivering high performance concrete at any time to the job site in place.
- Production of a concrete with low water cement ratios without loss of workability
- Single product for many application needs

The contractor / applicator:

- Easier placing and faster strength development
- Improved concrete surfaces

The engineer:

- Insurance that concrete meets original specification
- High quality durable concrete

Typical Properties*

| | |
|--|-------------------|
| Consistence | Liquid |
| Colour | Light Brown |
| Chloride According to EN 934-2 | Nil |
| Classification According to ASTM C494 and ASTM C1017 | Type B and Type D |
| Specific Gravity | 1.07±0.02@ 25°C |
| Air Entrainment | Less than 1.9% |
| pH (ISO 4316) | 6.0 – 7.0 |
| Alkali Content (EN 480-12) (%) | < 3 |

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Compatibility

SP-500K is compatible with all Portland cements that meet recognized international standards. **SP-500K** must not be used in conjunction with any other admixture unless prior approval is received from **KENAL CHEMICAL** Technical Department. **SP-500K** is suitable for mixes containing: Micro silica Pulverized fuel ash Ground granulated blast furnace slag cement.

Instructions for Use

SP-500K is a ready to use admixture that is added to the concrete at the time of batching. The maximum effect is achieved when the **SP-500K** is added after the addition of 70% to 80% of the water. **SP-500K** must not be added to the dry materials. Thorough mixing is essential and a minimum mixing cycle, after the addition of the **SP-500K**, of 90 seconds for forced action mixers is recommended.

Dosage

2% by weight of binder.

Other dosages by weight of binder can be used depending on the mix design, raw materials, climatic conditions and concrete requirements.

Trial mixes must be performed to establish the exact dosage rate required.

Packing

SP-500K is available in IBC, 210-liter drums and in bulk tanks upon request.

Shelf Life

SP-500K should be protected from extreme temperature. Should the material become frozen, it must be completely thawed and thoroughly mixed before use. **SP-500K** has a minimum shelf life of 12 months provided temperature is kept within range 5°C to 30°C.

Fire:

SP-500K is non-flammable

Precautions

Health & Safety:

SP-500K is non-toxic. Any splashes to the skin should be washed immediately with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.

Curing:

As with all structural concrete, normal curing methods apply.

Cleaning:

Spillages of **SP-500K** can be removed with water.

Technical Support

Kenal Chemical offers full technical support package to specifiers, contractors and end users, as well as technical assistance on site and after sales consultations.

Ensure the container is available for the medical attendant to examine for any relevant instructions and content details. Reseal all containers after use and ensure product is stored as instructed on the safety section of the labelling.

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