



The Chemical Company

# POZZUTEC® 1

## Polynaphthalene Sulfonate and Nitrate Salt Based Set Accelerating / Plasticizer Concrete Admixture



1305-CPD-0097  
1305-CPD-0293

### Description of Product

**POZZUTEC® 1** is a polynaphthalene sulfonate and nitrate salt based set accelerating/plasticizer concrete admixture suitable for cold weather conditions that increases set acceleration and early strengths by increasing the reaction between water and cement especially at the start of set.

**Ministry of Public Works Pos. No: 04.613/7 Consistent With the TS EN 934-2 Table 6: Set Accelerating Concrete Admixture ASTM C 494 Type C: Set Accelerating Concrete Admixture Standards.**

### Fields of Application

- In the production of pumpable and non-pumpable readymix concrete.
- Pourings in cold weather to protect concrete from freezing effect and when early high strength is desired.
- In precast and prefabricated concrete pourings
- In the production of reinforced and plain concretes, light or normal weight concretes of all kinds.

### Technical Data

|                                |  |
|--------------------------------|--|
| Structure of the Material      | Polynaphthalene sulfonate and nitrate salt based |
| Color                          | Amber  |
| Density                        | 1.13 - 1.14 kg/liter                             |
| Chloride Content% (EN 480-10)  | < 0.1  |
| Alkaline Content % (EN 480-12) | < 10   |

Obtained in +20°C, 50% relative humidity conditions



### Features and Benefits

- Reduces concrete's initial and final set time compared to concrete without admixture.
- Especially in cold weathers, protects concrete from freezing effect by giving early strength.
- **POZZUTEC® 1** does not contain chloride.

### Working Mechanism of Admixture

**POZZUTEC® 1** goes into reaction with cement. When **POZZUTEC® 1** is added to the mixture, it is absorbed by cement particles. **POZZUTEC® 1** accelerates the reaction between cement and water at the start of set and increases hydration temperature. As a result, setting of concrete is accelerated and its early strength is positively affected.

### Application Procedure

Binder (cement-micro silica-fly ash) and aggregate must be mixed until a homogenous mixture is obtained. After adding 50%-70% of the water to be added to the mixture, **POZZUTEC® 1** must be added to the mixture along with the remaining water. **POZZUTEC® 1** must be mixed for 60 sec. or for the duration determined in laboratory experiments in the mixture for a homogenous diffusion.

Adding Value to Concrete



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## Dosage

**POZZUTEC® 1** is suggested to be used as 2.5 - 5.0 kg for 100 kg binder (cement-micro silica-flyash) to accelerate the set according to TS EN 934-2 standard. When used together with another plasticizer, it can be used as 1.0 - 2.0 kg for 100 kg binder (cement-micro silica-flyash) depending on the other plasticizer's type and dosage. The dosage to be used must be determined beforehand by laboratory experiments according to concrete class and properties. **BASF Yapı Kimyasalları San. A.S.** Technical Service must be consulted for detailed information.

## Compatibility

**POZZUTEC® 1** can be used with the following materials:

1. Can be used with all cement types.
2. Can be used with mineral admixtures like silica, flyash and slag.
3. Used with **Pozzolith®** series and **Rheobuild®** series admixtures.
4. Can be used with air entraining **Micro Air® 200** to increase Freezing - Thawing resistance.
5. Used against fissures from plastic shrinkage with synthetic fibers **Meyco® FIB. SP 530/540/550** and steel fibers.
6. In environments with high temperature and wind, must be used with a suitable curing membrane or material like **Masterkure® 101, Masterkure® 107, Masterkure® 176** or **Masterkure® 181** to prevent the water of the mixture inside the concrete from evaporating.

## Watchpoints

- Concrete design and admixture dosage must be determined by prior laboratory trials according to concrete class and properties.

- The determined binder (cement-micro silica-fly ash), at the end of laboratory trials, coarse and fine aggregate must be mixed until a homogenous and dry mixture is obtained. If admixture is added to the dry mixture before adding mixing water, then it will be absorbed by the fine aggregate and uniform distribution will not be obtained. Even if all the mixing water is added on top of this, aimed concrete class and properties cannot be obtained. Since the mixture will need extra water, the water amount in design values will be exceeded and the concrete's mechanical properties will be below the aimed value. For this reason, concrete admixtures must not be added directly to the dry mixture.
- The admixture amount in the mixture is calculated by multiplying the sum of cement and secondary binders (such as micro silica-flyash-slag) in the mixture by admixture dosage ratio.
- If higher doses are used than the suggested dosage, then set times of the mixture can increase. In such cases, reinforced concrete has to be cured by keeping it humid during stripping.
- **POZZUTEC® 1** is not suggested to use with **Glenium®** series and **Rheobuild® PRF 10** admixtures.
- When concrete temperature goes below +5°C cement hydration stops and under 0°C concrete mixing water starts to freeze. Frozen water increases the volume of concrete approximately 10%. As a result;
- The adherence between cement paste and aggregates weakens.
- Concrete strength decreases.
- Cracks and surface fissures occur.
- The following parameters must be considered in concretes produced in cold environments:
- The materials (cement/second degree binders/aggregate and water) that will be used in concrete mixture have to be stored in suitable environment temperature.

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- Suitable cement type has to be used (Cem I 42.5/PC 42.5).
- Suitable cement dosage has to be determined (350 - 400 kg/m<sup>3</sup>).
- Concrete has to be protected from freezing effect by set accelerating admixture and mixing water must be reduced by obtaining desired workability with a suitable super plasticizer admixture.
- Since hydration is stopped under +5°C, suitable curing methods have to be used until the concrete is set and reached necessary strength (at least 5Mpa on average)
- Concrete has to be poured during the warmest hours of the day if possible, and forms must be free of snow and ice.
- To increase concrete temperature by 1°C:
- Increase aggregate temperature by 2°C.
- Increase concrete mixing water temperature by 4°C.
- Increase cement temperature by 8°C.

## Packaging

30 kg can  
230 kg drum  
1000 kg tank  
Bulk

## Storage

Must be stored in original packing, in +5°C environment and protected from direct sunlight. If the material freezes because of storing in undesirable environments, it must be thawed by keeping it in room temperature without direct heating, and mixed by mechanical methods until it becomes homogenous. Pressured air must not be used when mixing.

## Shelf Life

12 months after the production date under appropriate storing conditions. Opened packages can be used throughout the shelf life if the package cover is well closed.

## Health and Safety Precautions

Work cloth, protective gloves, goggles and masks concordant with Work and Worker Health rules must be used during the application. Avoid contact to skin and eyes during storing and application. If such a contact occurs, it must be washed by soap and plenty of water. Consult a physician urgently if swallowed. Food and drink must be kept outside the application areas. Must be stored away from children. Please look at the Material Safety Data Sheet for detailed information.

## Disclaimer

This information given here is true, represents our best knowledge and is based not only on laboratory work, but also on field experience. However, BASF Yapı Kimyasalları San. A.S. is only responsible from the quality of the product. BASF Yapı Kimyasalları San. A.S. cannot be hold responsible from the results caused by applications of the product not in accordance with the written suggestions of how and where to use the product and/or faulty applications.

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