

RHEOCRETE® CNI

Chemical corrosion-inhibiting admixture for reinforced concrete

DESCRIPTION:

RHEOCRETE CNI admixture is calcium nitrite-based and formulated to inhibit the corrosion of steel in reinforced concrete. RHEOCRETE CNI admixture contains a minimum of 30% active ingredients by mass and meets ASTM C 494 interim requirements for Type C, accelerating, admixtures.

RHEOCRETE CNI admixture is formulated for identical performance to other calcium nitrite corrosion inhibitors presently available, and contains the same percentage by mass of active ingredients.

BENEFITS:

RHEOCRETE CNI admixture is a corrosion-inhibiting admixture that provides basic corrosion protection for steel reinforced concrete structures.

- Provides effective corrosion protection against chlorides in concrete.
- Recommended for use in all types of conventionally reinforced concrete, precast and/or prestressed concrete applications.
- Extends the service life of reinforced concrete structures.

MECHANISM:

Reinforcing steel builds up a natural passive ferric oxide layer on the steel surface in the alkaline environment of concrete. This passive layer acts as a barrier to chlorides. In the presence of chlorides and moisture this passive oxide layer may break down resulting in corrosion of the steel.

RHEOCRETE CNI admixture delays corrosion by repassivating defects on the steel surface. These defects are ferrous oxide ions that are susceptible to chloride attack. If chloride ions attack the ferrous ions they combine to create a ferrous chloride complex (rust) and initiate pitting corrosion on the reinforcing steel. If untreated, chloride ions would continue to attack newly exposed ferrous ions and complex to form more rust. These corrosion pits would grow and continue to form expansive corrosion products leading to staining, cracking and spalling in concrete.

Nitrite ions in RHEOCRETE CNI admixture are effective in preventing ferrous chloride complex formation by reacting with defective ferrous oxide ions prior to chloride attack and reforming the passive layer. Nitrite ions surround the defective ferrous oxide ion and convert it to a more stable ferric ion species less susceptible to corrosion. This oxidation reaction serves to repassivate the reinforcing steel and re-establish the barrier between the steel and the chlorides that initiate corrosion.

APPLICATIONS:

RHEOCRETE CNI admixture will effectively inhibit corrosion in all types of steel reinforced concrete including precast/ prestressed and post-tensioned applications. It is recommended for use in structures that will be subjected to chlorides in service from deicing salts or the marine environment. RHEOCRETE CNI admixture is recommended for use in parking garages, bridge decks, marine structures, slabs, floors, and other reinforced concrete applications requiring basic corrosion protection against chlorides.

RHEOCRETE CNI admixture may also be used to offset the potentially corrosive effects of chloride-bearing ingredients that may be used in a concrete mixture. Contact your local Master Builders, Inc. representative for information regarding RHEOCRETE CNI dosages for such applications.

COMPATIBILITY:

RHEOCRETE CNI admixture may be used with portland cements approved under ASTM, AASHTO, or CRD specifications. It is compatible with other concrete admixtures, including pozzolans, water reducers, superplasticizers, retarders and air entrainers. Admixtures should be added separately to the concrete mixture to ensure desired results.

CONCRETE SETTING TIME:

Concrete setting times may be accelerated with the use of RHEOCRETE CNI admixture. If desired, a retarder or hydration control admixture may be added to the concrete mixture to counteract the acceleration effects of RHEOCRETE CNI admixture.

Use of a retarding or hydration control admixture may not be necessary in colder weather, when the accelerating affect of RHEOCRETE CNI admixture may be used to its fullest potential.

ADDITION RATES:

RHEOCRETE CNI admixture is recommended for use at a rate of 3.0 to 6.0 gal/yd³ (15.0 to 30.0 L/m³) of concrete, depending upon the severity of the corrosion environment and the anticipated chloride loading of the structure. In accordance with the recommendations of the Federal Highway Administration (FHWA), a chloride-nitrite ratio of 0.90 is recommended for optimal corrosion chloride protection. Please see your local Master Builders, Inc. representative for additional information regarding addition rates of RHEOCRETE CNI admixture.

CHEMICAL COMPOSITION:

RHEOCRETE CNI admixture contains a minimum of 30% calcium nitrite by mass as active ingredients.

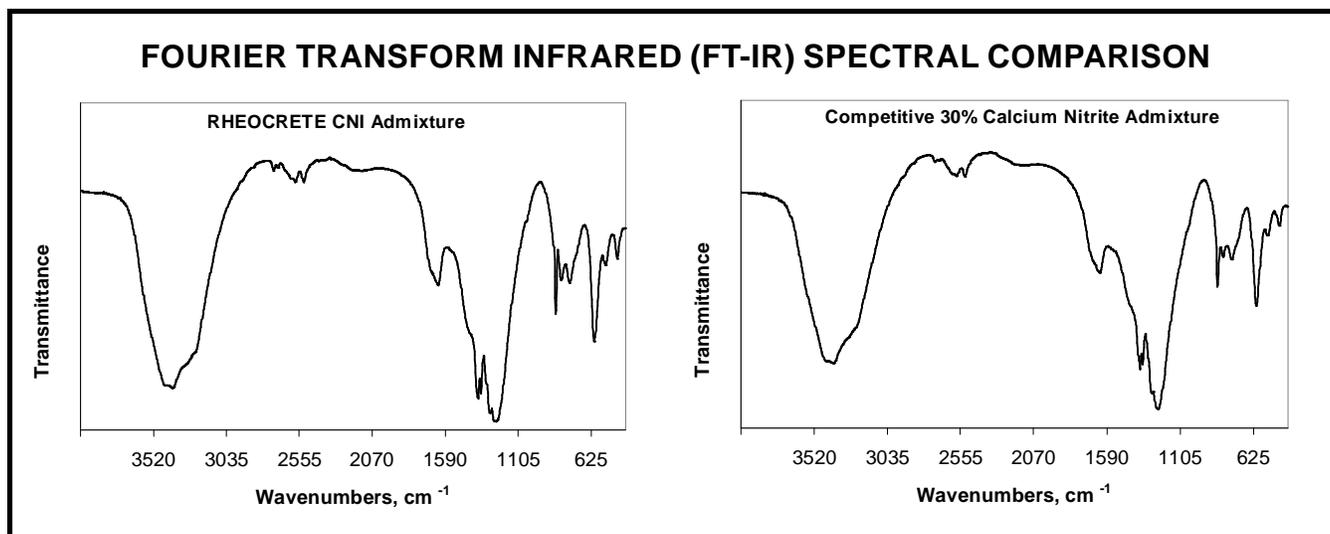
	% Active Solids by Mass (calcium nitrite)
RHEOCRETE CNI	30.0
Competitive Calcium Nitrite Admixture	30.0

PACKAGING AND AVAILABILITY:

RHEOCRETE CNI admixture is available in 55 gallon (208 liter) drums, 275 gallon (1040 liter) totes, and by bulk delivery.

TEMPERATURE PRECAUTION:

RHEOCRETE CNI admixture can be stored at temperatures between 10 and 100 ° F (-12 to 38 ° C). If the product freezes, it can be fully reconstituted by thawing and mechanical agitation. **Do not use pressurized air for agitation.**



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