

PRODUCT DATA SHEET

Sika®-CNI (K)

CORROSION INHIBITING ADMIXTURE FOR CONCRETE

DESCRIPTION

Sika®-CNI (K) is a calcium nitrite based admixture designed to inhibit the corrosion of steel in reinforced concrete.

Sika®-CNI (K) contains a minimum of 30 % calcium nitrite by mass.

Suitable for use in tropical and hot climatic conditions.

USES

Sika®-CNI (K) is a calcium nitrite-based admixture designed to inhibit the corrosion of steel in reinforced concrete. In the high alkalinity of concrete, reinforcing steel builds up a natural passivation layer that protects the steel from corrosion. This passive ferric oxide layer can however be damaged by the presence of chlorides and combined with the presence of moisture and oxygen will lead to corrosion of the steel.

Sika®-CNI (K) will help oxidize the steel to form ferric oxide which resists chloride attack. This reduces the areas of ferrous oxide ions that are susceptible to attack by chlorides. Ferrous oxide creates a ferrous oxide complex (rust), if attacked by chlorides. In the presence of chlorides, rust continues to generate in these areas (corrosion pits) and ultimately leads to staining, cracking and spalling of the concrete.

Sika®-CNI (K) fortifies the ferric oxide passivating layer prior to the penetration of chlorides. The nitrite ions in Sika®-CNI (K) will convert ferrous oxide to more resistant ferric oxide, thereby protecting the steel reinforcement from corroding.

CHARACTERISTICS / ADVANTAGES

Sika®-CNI (K) is a corrosion-inhibiting admixture that provides protection against corrosion in reinforced concrete structures.

Sika®-CNI (K) is recommended for conventional steel reinforcement as well as prestressed or post-tensioned concrete that will be exposed to chlorides from marine environments or deicing salts. Sika®-CNI (K) will extend the service life of structures by effectively inhibiting corrosion in areas such as parking garage decks and support structures, bridge decks, marine structures and many others.

Sika®-CNI (K) may also be used in concrete elements where chlorides are added initially to the concrete mix.

Sika®-CNI (K):

- Extends the service life of reinforced concrete structures.
- Is recommended for use in all types of reinforced concrete, precast and/or prestressed concrete as well as ready mix applications.

APPROVALS / CERTIFICATES

Sika®-CNI (K) follows the requirements of ASTM C1582; Corrosion Inhibiting Admixture and ASTM C494; Type C, Accelerating Admixture.

PRODUCT INFORMATION

| | |
|-----------------------------------|---|
| Composition | Calcium Nitrite |
| Packaging | 200 L drums and 1000 L flowbins |
| Appearance / Colour | Yellow liquid |
| Shelf life | 24 months from date of production if stored properly |
| Storage conditions | Store in undamaged, unopened, original sealed packaging in dry conditions at temperatures between +5 °C and +45 °C. Protect from direct sunlight and frost. |
| Density | ~1.23 kg/l (+25 °C) |
| Total Chloride Ion Content | Nil (EN 934-2) |

TECHNICAL INFORMATION

| | |
|----------------------------|---|
| Concreting Guidance | <p>The standard rules of good concreting practice for production and placing must be observed when using Sika®-CNI (K) in concrete. Refer to relevant standards.</p> <p>Fresh concrete must be cured properly especially at high temperatures in order to prevent plastic and drying shrinkage. Use Sika® Antisol® products as a curing agent or apply wet hessian.</p> |
|----------------------------|---|

APPLICATION INFORMATION

| | |
|---------------------------|---|
| Recommended Dosage | <p>The recommended dosage rate will vary between 10 - 30 l/m³ of concrete depending on the severity of the corrosion environment.</p> <p>In absence of a specified dosage rate, please contact your local Sika representative.</p> |
| Compatibility | <p>Sika®-CNI (K) may be combined with all types of Portland cement (OPC and SRC), concretes containing pozzolanic materials such as; GGBS, PFA and micro-silica. It can be used in combination with other Sika admixtures including water reducers, superplasticizers, set retarders and air entrainment agents.</p> <p>Admixtures have to be added separately to the concrete mix in order to deliver the results required.</p> <p>We recommend to perform trial mixes to establish the required performance when combining Sika®-CNI (K) with other admixtures. Please consult our Sika Technical Department.</p> |
| Dispensing | <p>Measure the required quantity manually or by automated dispenser. Add Sika®-CNI (K) directly into the freshly mixed concrete at the end of the batching cycle. When used in combination with other admixtures, care must be taken to dispense each admixture separately into the mix.</p> <p>Mix water adjustment is necessary to account for the water in Sika®-CNI (K) and thus maintain the required water/cement ratio. The batch water must be adjusted by reducing 0.85 kg of water per liter of Sika®-CNI (K).</p> |

IMPORTANT CONSIDERATIONS

When using Sika®-CNI (K) a suitable mix design must be selected for local material sources and should be trialed.

Adjust water content accordingly in order to maintain the correct water/cement ratio.

Sika®-CNI (K) may accelerate the setting time therefore a set retarding admixture from, e.g. the Sika® Plastiment® or Sikament® ranges may be required especially in warm weather applications. Please contact your local Sika representative.

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

SIKA NORTHERN GULF

Bahrain / Qatar / Kuwait
Tel: +973 177 38188
sika.gulf@bh.sika.com
gcc.sika.com

SIKA SOUTHERN GULF

UAE / Oman / SIC
Tel: +971 4 439 8200
info@ae.sika.com
gcc.sika.com

SIKA SAUDI ARABIA

Riyadh / Jeddah / Damman
Tel: +966 11 217 6532
info@sa.sika.com
gcc.sika.com



ISO 9001: Sika UAE LLC,
Sika Gulf B.S.C. (c),
Sika Saudi Arabia Co. Ltd,
Sika Qatar LLC
ISO 14001: Sika UAE LLC,
Sika Gulf B.S.C. (c),
Sika Saudi Arabia Co. Ltd
OHSAS: Sika UAE LLC,
Sika Gulf B.S.C. (c)

All products are supplied
under a management
system certified to conform
to the requirements of the
quality, environmental and
occupational health &
safety standards ISO 9001,
ISO 14001 and OHSAS
18001.

Product Data Sheet

Sika®-CNI (K)

October 2018, Version 01.01
021403051000000007

Sika-CNIK-en-AE-(10-2018)-1-1.pdf

