

PRODUCT DATA SHEET

Sika® CNI

CORROSION INHIBITING ADMIXTURE

PRODUCT DESCRIPTION

Sika® CNI is a calcium nitrite-based admixture designed to inhibit the corrosion of steel in reinforced concrete. Sika® CNI contains a minimum of 30 % calcium nitrite by mass.

WHERE TO USE

- Recommended for conventional steel reinforcement as well as prestressed concrete that will be exposed to chlorides from marine environments or deicing salts.
- 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.
- May also be used in concrete elements where chlorides are added initially to the concrete mix.
- Sika® CNI is a corrosion-inhibiting admixture that provides protection against corrosion in reinforced concrete structures.
- Extends the service life of reinforced concrete structures. - Recommended for use in all types of reinforced concrete, precast and/or prestressed concrete as well as ready-mix applications.
- Sika® CNI is also an effective accelerator where high early strength concrete is desired and the use of calcium chloride is prohibited.

CHARACTERISTICS / ADVANTAGES

- In the high alkalinity of concrete, reinforcing steel builds up a natural passivation layer. This layer protects the steel from corrosion. This passive ferric oxide layer however can be damaged by the presence of chlorides and combined with the presence of moisture and oxygen which will lead to corrosion of the steel.
- Sika® CNI 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 these chlorides, rust continues to generate in these areas (corrosion pits) and ultimately leads to staining, cracking and spalling of the concrete.
- Sika® CNI fortifies the ferric oxide passivating layer prior to the penetration of chlorides. The nitrite ions in Sika® CNI will convert ferrous oxide to more resistant ferric oxide, thereby protecting the steel reinforcement from corroding.
- Sika® CNI can be used as an accelerating admixture that provides: Accelerated setting time across a wide range of temperatures. ▪ Increased early and ultimate compressive and flexural strengths

APPROVALS / CERTIFICATES

Meets the requirements of ASTM C1582, Corrosion Inhibiting Admixture and ASTM C494 / AASHTO M194 Type C, accelerating admixture.

PRODUCT INFORMATION

CSC MasterFormat®	03 05 00 CORROSION-INHIBITORS
Packaging	205 L (54 US gal.) drums 1040 (275 US gal.) IBC Bulk delivery
Appearance / Colour	Liquid / Greenish
Shelf Life	2 years when stored in dry warehouse conditions, at temperatures ranging between +10 °C and +27 °C (50 °F and 80 °F).
Storage Conditions	Store at temperatures above +5 °C (40 °F). If frozen, thaw out and agitate thoroughly to return to normal state before use.
Specific Gravity	Approx. 1.3

APPLICATION INFORMATION

Recommended Dosage	<p>The recommended dosage rate will vary between 10 - 30 L/m³ (2-6 gals. per cubic yard) of concrete, depending on the severity of the corrosion environment. In absence of a specified dosage rate, please contact your Sika Canada Technical Sales Representative. Adjust water content accordingly. The typical dosage rate for set accelerating applications will vary between 650 - 7820 mL/100 kg (10 - 120 fl. oz./100 lb) of cement.</p> <p>Sika® CNI may accelerate the setting time. In order to prevent slump loss or finishing characteristics, a set retarding admixture, like Sika® Plastiment®, may be required, especially in warm weather application. The full accelerating effect of Sika® CNI may be used for cold weather concreting.</p>
Mixing	<p>Mixing Measure the required quantity manually or by automated dispenser. Add Sika® CNI 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. Mix water adjustment is necessary to account for the water in Sika® CNI and thus, maintain the required water/cementitious ratio. The batch water must be adjusted by reducing 0.839 kg of water per litre of Sika® CNI.</p> <p>Compatibility with other Admixtures: Sika® CNI can be used with Portland cements compliant with ASTM, AASHTO or CRD specifications. It can be used in combination with other Sika® admixtures including microsilica, water reducers, superplasticizers, set retarders and air entrainment agents. Admixtures have to be added separately to the concrete mix in order to deliver the results required.</p> <p>Limitations:</p> <ul style="list-style-type: none">▪ Sika® CNI will not reduce the ingress of chlorides or other aggressive agents.▪ Sika® CNI may slightly reduce the entrained air content and a higher dosage of the air entrainment agent may be required.

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

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 exact product data and uses.

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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca

Sika Canada Inc.

Head Office
601, avenue Delmar
Pointe-Claire, Quebec
H9R 4A9
1-800-933-SIKA
www.sika.ca

Other locations

Boisbriand (Quebec)
Brantford; Cambridge;
Sudbury; Toronto (Ontario)
Edmonton (Alberta)
Surrey (British Columbia)

Product Data Sheet

Sika® CNI
June 2022, Version 01.01
021403051000000004

