

Sika® CNI

Corrosion Inhibiting Admixture

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 and is formulated to meet ASTM C-494 requirements for Type C, accelerating admixture.
How it Works	<p>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.</p> <p>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.</p> <p>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.</p>
Applications	<p>Sika CNI 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.</p> <p>Sika CNI 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.</p> <p>Sika CNI may also be used in concrete elements where chlorides are added initially to the concrete mix.</p> <p>Sika CNI is a corrosion-inhibiting admixture that provides protection against corrosion in reinforced concrete structures. Sika CNI:</p> <ul style="list-style-type: none">■ Extends the service life of reinforced concrete structures.■ Is recommended for use in all types of reinforced concrete, precast and/or pre-stressed concrete as well as ready mix applications.
Limitations	Sika CNI will not reduce the ingress of chlorides or other aggressive agents.
How to Use	
Dosage	<p>The recommended dosage rate will vary between 2 and 6 gallons per cubic yard (10-30 l/m³) of concrete, depending on the severity of the corrosion environment. In absence of a specified dosage rate, please contact your local Sika representative. Adjust water content accordingly.</p> <p>Sika CNI may accelerate the setting time. In order to prevent slump loss or finishing characteristics, a set retarding admixture, like 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>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.</p> <p>Mix water adjustment is necessary to account for the water in Sika CNI and thus, maintain the required water/cementitious ratio.</p> <p>The batch water must be adjusted by reducing 7.0 lbs. (0.839 kg) of water per gal. (liter) of Sika CNI.</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.

Sika CNi may slightly reduce the entrained air content and a higher dosage of the air entrainment agent may be required.

Packaging	Available in 55 gallon (208 liter) drums, 265 gallon (1000 liters) totes and bulk delivery.
Storage and Shelf Life	Sika CNi should be stored above 40°F (5°C). If frozen, thaw out and agitate thoroughly to return to normal state before use. Shelf life when stored in dry warehouse conditions between 50°F and 80°F (10°C - 27°C) is two years minimum.

Typical Data

Appearance	Greenish liquid.
Specific Gravity	Approx. 1.3

Caution
Irritant; Eye irritant. May cause skin irritation, redness and pain at the site of contact. Ingestion may cause effects to the GI tract, such as irritation, nausea, vomiting, slow respiration, collapse and coma. Repeated small doses may cause a fall in blood pressure, rapid pulse, headache, and visual disturbances. Inhalation - may cause respiratory tract irritation leading to sore throat, coughing, and breathing difficulties. General ventilation and/or local exhaust ventilation is recommended. Safety glasses/chemical goggles are recommended. Avoid skin contact, wear a long sleeve shirt and long pants. Wear nitrile or other chemical resistant gloves. If application creates a mist of vapors, an NIOSH organic vapor respirator with HEPA filter is recommended. Wash thoroughly after handling.

DANGER: Do Not Allow Material To Dry. Resultant Powder is An Extreme Oxidizer.

Handling and Storage
Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse.

First Aid
Eyes: Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin:** Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation:** Remove person to fresh air. **Ingestion:** Do not induce vomiting. Dilute with water. Contact a physician. **In all cases, contact a physician immediately if symptoms persist.**

Clean Up
Use personal protective equipment (chemical resistant goggles/gloves/clothing). Without direct contact, remove spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental regulations.

KEEP CONTAINER TIGHTLY CLOSED • KEEP OUT OF REACH OF CHILDREN • NOT FOR INTERNAL CONSUMPTION • FOR INDUSTRIAL USE ONLY

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Quality Certification Numbers: Lyndhurst: FM 69711 (ISO 9000), FM 70421 (QS 9000), Marion: FM 69715, Kansas City: FM 69107, Santa Fe Springs: FM 69408

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