# EUCON CIA

## Corrosion Inhibiting Admixture

EUCLID CHEMICAL



## Description

**EUCON CIA** is a Calcium Nitrite based admixture designed to inhibit the corrosion of steel reinforcement in concrete. This product contains a 30% Calcium Nitrite solution. When used at recommended dosage rates, this product introduces the proper, industry recognized amount of anodic inhibitor.

## Primary Applications

- Exterior steel reinforced concrete
- Structural and plain concrete
- Parking decks and exposed balconies

## Features/Benefits

- Calcium Nitrite based formula used for many years in the concrete industry
- Chemically inhibits the corrosion process
- Reduces the need for additional accelerating admixtures in cold weather
- Compatible with other commonly used Euclid Chemical admixtures
- Dosage rate is directly related to expected chloride concentration
- Increases protection for reinforcement in concrete

## Technical Information

### Typical Engineering Data

The following results were developed under laboratory conditions.

Specific Gravity .....1.27 to 1.33
Unit Weight.....10.4 to 11.3 lb. /gal
Freezing point ..... 0°F (-18°C)

### Slump

EUCON CIA has little effect on the slump of concrete.

## Packaging

EUCON CIA is packaged in bulk, 275 gal (1041 L) totes, and 55 gal (208 L) drums.

## Shelf Life

2 years in original, unopened container.

## Specifications/Compliances

- ASTM Classification C 494 Type C and E
- AASHTO Classification M 194 Type C
- Corps of Engineers Classification CRD C87 Type C

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## Directions for Use

### Mix Designs

It is strongly recommended the optimum mix trials be made before the start of job site pours. This will allow the ready-mix concrete producer to determine the proper batching sequence and the required dosage of other admixtures needed to deliver the specified concrete mix to the job site.

EUCON CIA may be added with the concrete batch water. It should not be mixed with any other admixture prior to being introduced into the concrete mixer. Mix designs are supplied upon request.

### Dosages

**Corrosion Inhibitor**

The recommended additon rates range for Eucon CIA Corrosion Inhibitor is from 2 - 6 gal/yd$^3$ (10 - 30 L/m$^3$). The Chloride to Nitrite ratio is important. The project specification will indicate or specify the amount of chloride ions protection necessary. The dosage rate of EUCON CIA is directly related to the level of chloride protection and can be chosen from Table 1. EUCON CIA will accelerate concrete setting times at all recommended dosages. To counteract this acceleration use a retarder such as EUCON RETARDER 75 or EUCON RETARDER 100, as shown in Table 2.

When no specified chloride ion protection level is specified contact your local Euclid sales representative.

**Set Acceleration**

If used as an accelerator the Eucon CIA dosage range is 10 - 90 oz/cwt (650 - 5870 mL per 100 kg) of cementitions materials.

### Mix Water Reduction:

It is necessary to adjust the mix water to account for the water in EUCON CIA, Subtract 7.0 lbs. or 0.85 gallons of water per gallon of EUCON CIA.

**Table 1**

**EUCON CIA Dosage Rates vs Chloride Protection**

| EUCON CIA gal/ yd$^3$ | Chloride lbs. / yd$^3$ |
|---|---|
| 2.0 | 6.0 |
| 2.5 | 8.0 |
| 3.0 | 9.9 |
| 3.5 | 11.5 |
| 4.0 | 13.0 |
| 4.5 | 14.1 |
| 5.0 | 15.6 |
| 6.0 | 16.0 |

**Table 2**

**EUCON CIA Dosage Rates vs Retarder 100 dosage**

| EUCON CIA gal/ yd$^3$ | Retarder 100@70°F oz./cwt. |
|---|---|
| 3.0 to 4.0 | 3 to 5 |
| 4.0 to 5.5 | 4 to 7 |
| 5.5 to 6.0 | 5 to 8 |

## Clean-Up

Clean tools and equipment with water before concrete hardens.

## Precautions / Limitations

- Store at temperatures above 0°F (-18°C). When EUCON CIA freezes, its corrosion inhibition is completely restored by thawing and thorough agitation.
- Do not dispense directly onto dry cement.
- Quality concrete is necessary to slow the ingress of chloride into the concrete. According to ACI 318, the “Building Codes Requirements for Reinforced Concrete” requires certain design constraints, such as maximum water to cement ratio and providing adequate cover over the reinforcing steel. All pertinent codes and guides should be consulted prior to final approval of mix design.
- Additional protection can be achieved by using high range water reducing admixtures (such as EUCON 37) to reduce the water to cement ratio. Also, the use of EUCON MSA, a silica fume admixture can be used to reduce concrete permeability.
- In all cases, consult the Safety Data Sheet before use.

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