



MIGRATING CORROSION INHIBITORS
FROM GREY TO GREEN

MCI®-2001

03 30 00	Cast in Place Concrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete

DESCRIPTION

MCI®-2001 is a powder based, organic, corrosion inhibiting admixture for protection of metallic reinforcement in concrete structures.

When incorporated into concrete, cementitious grouts, or repair mortars, MCI®-2001 forms a protective, monomolecular layer on embedded metals that inhibits corrosion. In new construction, this is quantified by an increase in critical chloride threshold and subsequent reduction in corrosion rates when corrosion does initiate. When used with repair mortars and grouts, MCI®-2001 not only protects rebar within the patch, it also migrates into undisturbed concrete adjacent to the repair, to protect reinforcement already in place.

PACKAGING & STORAGE

Available in 5 pound (2.3 kg) pails, 50 pound (22.7 kg) drums, and 100 pound (45.4 kg) drums.

To ensure best product performance, store in original packaging, indoors, and out of direct sunlight at 40-100 °F (4-38 °C).

Shelf life: 2 Years



HOW IT WORKS

MCI®-2001 is a corrosion inhibiting admixture based on amine alcohol corrosion inhibitors. It is considered ambiodic (mixed), meaning it protects both anodic and cathodic areas within a corrosion cell by forming a protective layer on embedded reinforcement; therefore delaying the onset of corrosion as well as reducing corrosion rate once corrosion initiates.

MCI®-2001 is effective at enhancing the durability and extending the service life of concrete structures exposed to corrosive environments (carbonation, chlorides, and atmospheric attack).

WHERE TO USE

- Reinforced concrete including precast, pre-stressed, and post-tensioned structures
- Corrosive environments including exposure to deicing salts, saline groundwater, airborne chlorides, and carbonation
- Marine and coastal structures, highways and bridges, parking decks, balconies, pools, concrete tanks, pilings, substructures, piers, pillars, pipes, and utility poles

ADVANTAGES

- Powder formula for ease of addition into pre-mixed grouts, repair mortars, or other cementitious based products
- Lower toxicity and environmental impact than traditional corrosion inhibiting admixtures such as calcium nitrite
- Low dosage rate with minimal effect on concrete properties (i.e. workability, strength development, air entrainment, etc.)
- Single dosage rate which is independent of expected exposure to chlorides
- Ability to migrate through porous substrates (concrete, masonry, limestone, etc.) by capillary action, vapor diffusion, and ionic attraction
- Field and lab tested worldwide

MCI®-2001

PHYSICAL PROPERTIES

Appearance	White to green powder
pH	10.4-11.2 (10% water)
Non-Volatile Content	45-60%
Shelf Life	24 months

DOSAGE

Add MCI®-2001 to concrete mix or repair mortars at 1.5 lb/yd³ (0.9 kg/m³). Dosage is fixed and independent of chloride levels.

APPLICATION

In ready-mix applications, MCI®-2001 is best added with the mix water into ready-mix concrete at the plant. Alternatively, it can be dosed into the ready-mix truck using portable dosing equipment. Concrete should be mixed thoroughly before placement.

In other cementitious product applications, MCI®-2001 can be pre-blended into the mortar, grout, etc., so that it is evenly dispersed throughout the mix, or added into the mix water prior to mixing with the material.

CONSIDERATIONS

Concrete properties are always best determined in a trial using the actual mix components. Cortec® recommends a trial batch anytime you are using MCI®-2001 with new mix components.

Contact Cortec® Technical Service for further guidance if necessary.

STANDARD TEST RESULTS

Setting Time			
	Control	MCI®-2001	Relative to Control
Initial Set (Minutes)	202	215	+13
Final Set (Minutes)	283	290	+7
Compressive Strength			
3 Day (pSi)	2450	2450	100%
7 Day (pSi)	3560	3220	90%
28 Day (pSi)	4280	5150	120%
6 Month (pSi)	5100	5660	111%
1 Year (pSi)	5640	5880	104%
Flexural Strength			
3 Day (pSi)	580	540	93%
7 Day (pSi)	660	650	94%
28 Day (pSi)	790	780	99%
Shrinkage			
Length Change (%)	-.031	-.031	100%
Durability			
Freeze/Thaw Durability	101	102	101

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