

MIGRATORY CORROSION INHIBITOR™ (MCI®) PRODUCTS FOR CONCRETE



	DCI	MCI 2005 NS	MCI 2006 NS
Dosage Rate	2-6 Gallons/yd ³	1.5 pints/yd ³	1 pound/yd ³
Inhibitor Type	Anodic	Mixed	Mixed
Chemical Composition	Calcium Nitrite	Amine Carboxylates	Amine Carboxylates
Mix Design	7 lb. water omitted for every gallon of DCI	No change from control	No change from control
Set Time (ASTM C 494)	Accelerated	Normal Set time	Normal Set time
Air Entrainment	Reduced, need to compensate with an AEA	No change from control	No change from control
Shrinkage (ASTM C 157)	Max. 135% of the control	9.09 % more than control (AEC); 19.35% less than control (NAEC)	3.03% less than control (AEC); 12.9% less than control (NAEC)
Toxicity	LD50 ~ 283 mg/kg; BOD 28 days 0%	LD50 ~ 2300 mg/kg (table salt 3000 mg/kg); BOD 28 days > 60%	LD50 ~ 2300 mg/kg (table salt 3000 mg/kg); BOD 28 days > 60%

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More About MCI

Corrosion Rate of Reinforcement in Concrete Using "Sea Water" After 1 Year Shows:

Material	I _{corr} , Corrosion Current (nA/cm ² x 10 ⁻³)	Protective Power, z (%)
0.6 l/m ³ MCI 2005	0.67	79.9
2.0 l/m ³ MCI 2007	0.15	95.5
25 l/m ³ DCI	0.92	72.4
Control	3.33	-

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Some Independent Studies

- Commercial MCI® offers excellent inhibition for longer times in contrast to the inorganic anodic inhibitors, i.e. sodium nitrite (Monash University, Australia)
- Lab Investigation...of calcium nitrite when used in surface treatments applied to reinforced chloride contaminated and carbonated concrete, appeared to be ineffective...In addition, enhancement of local corrosion...was observed (WS Atkins Consultants Ltd., UK)

**SODIUM NITRITE, 5.1, UN1500, PGIII, OXIDIZER/TOXIC
98 %-120 MESH**

Lot No: **NANI-03-171**

RQ: 100(45.4)

Net Wt. **50 LBS.**

CAS#: 7632-00-0
FW: 69.00

RTECS#: RA 1225000
MERK INDEX: 9,8407

Emergency Contact: **CHEMTREC: 1-800-424-9300**
CHEMTREC INTERNATIONAL: (703) 527-3887

HEALTH HAZARDS & FIRST AID:

MATERIAL IS DANGEROUS IF INHALED! IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNT OF WATER, FOR AT LEAST 15 MINUTES IN CASE OF CONTACT EXPOSURE. MATERIAL IS IRRITATING TO THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. EXPOSURE SYMPTOMS MAY INCLUDE - BURNING SENSATION, COUGHING, WHEEZING, SHORTNESS OF BREATH, HEADACHES, LARYNGITIS, NAUSEA AND VOMITING, DIURESIS, ANEMIA, METHEMOGLOBINEMIA, NEPHRITIS, GASTROENTERITIS AND VASODILATION. IF MATERIAL HAS BEEN INHALED, REMOVE SUBJECT TO FRESH AIR. IF SUBJECT IS NOT BREATHING GIVE ARTIFICIAL RESPIRATION - PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT OXYGEN SHOULD BE SUPPLIED. CONTAMINATED CLOTHING SHOULD BE REMOVED AND THOROUGHLY CLEANED BEFORE REUSE. CALL A PHYSICIAN! WASH THOROUGHLY AFTER HANDLING.

INCOMPATIBILITIES: ACIDS, ACID ANHYDRIDES, FUELS, (REDUCING AGENTS). EXPLOSIVE MIXTURES MAY RESULT FROM IMPROPER HANDLING!

PRODUCTS OF DECOMPOSITION: OXIDES OF SODIUM AND NITROGEN.

HANDLING & STORAGE: APPROPRIATE OSHA/MSHA APPROVED RESPIRATOR, CHEMICALLY RESISTANT GLOVES, CHEMICAL GOGGLES AND OTHER APPROPRIATE PROTECTIVE CLOTHING (RUBBER APRON OR OVERWEAR) SHOULD BE WORN. MECHANICAL EXHAUST IS REQUIRED. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. DO NOT BREATHE DUST. AVOID PROLONGED AND REPEATED EXPOSURE. HYGROSCOPIC. KEEP CONTAINERS SEALED. STORE IN COOL DRY PLACE. OBSERVE PROPER PERSONAL HYGIENE. SAFETY SHOWER SHOULD BE AVAILABLE. THE PREFERRED FIRE EXTINGUISHING MEDIA IS WATER, DRY CHEMICAL POWDER, CARBON DIOXIDE OR POLYMER FOAM. MATERIAL IS NONCOMBUSTIBLE. PROTECT ADJACENT AREA!

***** INDUSTRIAL OR MANUFACTURING USE ONLY *****

