Bone Dry CI — Competitive Analysis

Corrosion-Inhibiting Concrete Admixtures | Sales & Marketing Reference | Internal Use — verify current competitor TDS before external distribution

Executive Summary

The corrosion-inhibiting admixture market is dominated by 30% calcium nitrite solutions (Sika CNI, GCP DCI, Euclid Eucon CIA/BCN, MasterLife CI 30) dosed by the gallon and engineered to an estimated chloride load, plus a smaller organic camp (Cortec MCI-2005, MasterLife CI 222). **Bone Dry CI wins on four fronts:** (1) dual-action anodic + cathodic protection where calcium nitrite is anodic-only; (2) one fixed 28 fl. oz./yd^3 dose — ounces, not gallons — with no chloride-load engineering; (3) ASTM C494 Type S neutrality: no set acceleration, no companion retarder, no mix-water correction; and (4) a complete, published 40-week ASTM G109 dataset showing 97% less total corrosion than untreated concrete and a result nearly 10× below the C1582 limit.

The Competitive Landscape: Two Chemistry Camps

- **Calcium nitrite (CNI) inhibitors** — the legacy standard. Minimum 30% calcium nitrite solutions that reinforce the passive oxide layer at the anode. Dosage is not fixed: it must be engineered from the chloride load expected at the steel over the design life (2–6 gal/yd^3), the chloride-to-nitrite ratio is critical, and the products accelerate set at all recommended dosages — typically requiring a retarder or hydration stabilizer, plus mix-water correction.
- **Organic / amine-based inhibitors** — the modern approach, and Bone Dry CI's camp. Amine chemistries adsorb onto embedded metal and form a protective molecular layer that works at both the anode and cathode, at ounce-level dosages, independent of chloride loading. Bone Dry CI leads this camp on test rigor: it qualified through the full 40-week ASTM G109 beam exposure program — not a rapid electrochemical screen — with every number published.

Head-to-Head Matrix

Attribute	Bone Dry CI	Calcium Nitrite Class (Sika CNI, GCP DCI, Eucon CIA/BCN, MasterLife CI 30)	Cortec MCI-2005 / 2005 NS	MasterLife CI 222
Chemistry	**Amine-based organic**	Calcium nitrite, min. 30% solution	Amine carboxylate (organic); 67% biobased	Organic film-former
Inhibition mechanism	**Dual-action: anodic + cathodic**	Anodic only (per Euclid TDS)	Mixed: anodic + cathodic	Reduced Cl^-/moisture ingress + film on steel
Metals protected	**Ferrous and nonferrous**	Reinforcing steel	Metallic reinforcement	Reinforcing steel
ASTM C494 / AASHTO M 194	**Type S — no set change**	Type C (accelerating); DCI S = neutral-set variant	MCI-2005 delays set; NS = normal-set version	Type S
Dosage per yd^3	**28 fl. oz. — one fixed dose**	2–6 gal, engineered to design chloride load	1.5 pints (24 fl. oz.)	1 gal, fixed
Admixture volume per yd^3	**0.22 gal**	2–6 gal (9–27× Bone Dry)	0.19 gal	1 gal (4.6× Bone Dry)
Mix adjustments	**None**	Mix-water reduction required (DCI: 7.0 lb water/gal); retarder or hydration stabilizer often needed	Trial batch recommended	Higher air-entrainer dose may be needed
Effect on set time	**No change**	Accelerates at all recommended dosages (Eucon CIA TDS)	Delays set (std.); NS version normal	—
Compressive strength	**+23% @ 28 days (documented G109 mixes)**	Accelerated strength gain	Minimal effect	—
ASTM C1582 status	**Passes Table 2 via full 40-week ASTM G109 beam program; complete data published**	Meets C1582; decades of field and long-term G109 history	Meets C1582; qualified via ASTM G180 rapid electrochemical method (in-house lab)	Not cited in current TDS
Dosing model	**Fixed — no exposure engineering**	Chloride-to-nitrite ratio tables; requires design-life chloride estimate	Fixed	Fixed

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NSF/ANSI 61	**Yes**	—	Yes	—
Packaging	**1 gal jugs to 275 gal totes**	Bulk, 275 gal totes, 55 gal drums (Eucon CIA)	—	—

"—" indicates the attribute is not stated in the manufacturer's current published literature. Competitor data compiled from manufacturers' published TDS and technical bulletins, July 2026.

The Dosage & Logistics Advantage

Because calcium nitrite protection scales with nitrite mass, CNI products consume 9–27 times the volume of Bone Dry CI per yard — which cascades into freight, plant tank capacity, dispensing, batch weight, and mix-water corrections. Bone Dry CI's fixed 28 fl. oz. dose keeps the admixture a rounding error in the mix:

Per-yard and project math	Bone Dry CI	Calcium nitrite @ 2–6 gal/yd³	MasterLife CI 222 @ 1 gal/yd³
Admixture volume per yd³	**0.22 gal**	2–6 gal	1 gal
Weight added to the mix per yd³	**≈ 2.3 lb**	≈ 21–64 lb (10.7 lb/gal)	—
Product for a 10,000 yd³ structure	**≈ 2,190 gal (≈ 8 totes)**	20,000–60,000 gal (73–218 totes)	10,000 gal (≈ 36 totes)
Treated cost per yd³ (fill in pricing)	**0.22 × [$/gal] = $____**	2–6 × [$/gal] = $____	1 × [$/gal] = $____

Use the last row with current pricing: even at a premium per gallon, a 0.22 gal/yd³ dose beats a 2–6 gal/yd³ dose on treated cost in most scenarios. Small-batch flexibility is a second edge: Eucon CIA ships only in bulk, totes, and drums — Bone Dry CI's 1-gallon jugs serve precast, repair, and small-pour work the CNI suppliers aren't packaged for.

Proven Performance vs. the Field

Bone Dry CI's qualification is the full ASTM G109 beam program required by ASTM C1582 — 40 weeks of cyclic chloride exposure on reinforced concrete beams against an untreated control: **5.2 C total corrosion vs. 158.7 C control (97% reduction, vs. a ≤50 C limit), corroded steel area held to 22% of control (limit: ≤1/3), and +23% higher 28-day compressive strength.**

Selling angle on test rigor: some organic competitors qualify to C1582 via ASTM G180, a two-week electrochemical screen in solution — Cortec's MCI-2005 qualification was run by Cortec's own laboratory under that method. Bone Dry CI's numbers come from real reinforced concrete beams over 40 weeks, at the exact commercial dosage, with the complete report available to specifiers. When an engineer asks both suppliers for their G109 beam data, that difference does the selling.

Objection Handling

"Calcium nitrite has 40 years of DOT track record."

Counter: ASTM C1582 exists precisely to level that field — and Bone Dry CI passed the identical G109 program CNI products are judged by, finishing nearly 10× under the corrosion limit. It did so as a Type S admixture: no set acceleration, no retarder line item, no mix-water correction, none of the hot-weather scrambling CNI crews budget for.

"28 ounces seems too small a dose to protect anything."

Counter: The beams say otherwise: 28 fl. oz./yd³ cut total corrosion 97% versus untreated concrete over 40 weeks of chloride ponding. Amine inhibitors work by molecular adsorption directly on the steel — protection doesn't require pounds of nitrite matched to pounds of chloride.

"We can engineer the CNI dose up for severe exposure."

Counter: You must engineer it — the manufacturers' own data sheets state the chloride-to-nitrite ratio is critical, which means estimating the chloride load at the steel over the structure's design life. Underestimate it and an anodic-only system is compromised. Bone Dry CI's dual-action fixed dose removes that engineering risk entirely, and protects nonferrous embedments CNI doesn't address.

"We already use Cortec for organic inhibition."

Counter: Then the comparison is test rigor and workability: Bone Dry CI qualified via the full 40-week G109 beam program with independently generated, published numbers — not an in-house two-week electrochemical screen — and it does so with no set

change, where standard MCI-2005 delays set. Add +23% documented strength, NSF/ANSI 61, 1-gallon-to-tote packaging, and Wisconsin manufacture with direct factory support.

Positioning Statements

- **For engineers and spec writers:** “The fixed-dose, dual-action inhibitor with a complete published ASTM G109 dataset — nearly 10× under the C1582 limit, with zero effect on your mix.”
- **For ready-mix producers:** “One tote where nitrite needs a tanker — 28 ounces a yard, no retarder, no mix-water correction, no set-time callbacks.”
- **For owners and contractors:** “97% less corrosion in the industry's standardized 40-week test — decades of added service life mixed into every yard.”

Sources

Competitor data compiled July 2026 from manufacturers' published literature: Sika CNI product page/PDS; GCP Applied Technologies DCI and DCI S data sheets and Technical Bulletins TB-0901/TB-0904; Euclid Chemical Eucon CIA and Eucon BCN TDS and Technical Note AD-07; Cortec MCI-2005 and MCI-2005 NS PDS, MCI admixture brochures, and Cortec/ForConstructionPros ASTM G180 qualification announcement; Master Builders Solutions MasterLife CI 222 TDS and Admixture Performance Guide. Bone Dry CI data from independent ASTM G109 / ASTM C1582 test program (2024). Verify current competitor documents before external use.