



RXSOL

CHEMO PHARMA INTERNATIONAL

Technical Data Sheet (TDS)

RXSOL-67-6709-210

Corrosion Inhibiting Admixture CIA 222

Description

RXSOL CIA 222 is a liquid organic corrosion-inhibiting admixture designed to protect reinforcing and prestressing steel in concrete structures. It forms a protective passivating film on embedded steel that inhibits both anodic and cathodic corrosion processes. RXSOL CIA 222 provides two levels of protection — reducing the rate at which chlorides and moisture enter the concrete and directly protecting the steel surface — making it one of the most effective corrosion-inhibiting admixtures available.

RXSOL CIA 222 meets the requirements of ASTM C494/C494M for Type S (Specific Performance) admixtures. It is non-chloride, non-corrosive, and safe for use in all types of reinforced concrete including precast, prestressed, and post-tensioned structures.

Note: Biodegradable, low-toxic, and compatible with all conventional concrete admixtures.

Advantages

- Inhibits corrosion at both anodic and cathodic sites.
- Reduces chloride and moisture penetration into concrete.
- Forms a durable corrosion-resistant film on reinforcing steel.
- Extends service life of reinforced concrete structures.
- Maintains workability and does not affect slump or setting time.
- Non-chloride, non-corrosive formulation – safe for all steel types.
- Improves sulfate resistance of concrete.
- Effective even in cracked concrete and marine environments.

Fields of Application

Suitable for all types of reinforced concrete structures where protection against chloride and moisture-induced corrosion is desired:

- Parking decks and bridge structures
- Marine piers, docks, jetties, and coastal structures
- Industrial floors, slabs, and columns
- Precast, prestressed, and post-tensioned elements
- Repair mortars and rehabilitation works

Method of Use

1. **Liquid Admixture:** Add directly to mix water or introduce into the concrete mixer during batching. Do not mix with other admixtures prior to dosing.
2. **Surface Application:** May be applied by brush or spray on hardened concrete for rehabilitation. Allow complete absorption before curing.
3. **Curing:** Ensure proper curing to optimize penetration and inhibitor performance.

Dosage

Application	Dosage Rate	Remarks
New Concrete	0.6 – 1.5% by weight of cement or 1 gal/yd ³ (≈5 L/m ³)	Use higher dosage for chloride-rich or marine environments.
Repair Mortars	1.0 – 2.0% of binder weight	For rehabilitation works with direct rebar exposure.

Performance Characteristics

- **Plastic Properties:** Concrete workability and setting characteristics remain unaffected. Slightly higher air-entraining dosage may be required.
- **Hardened Properties:** Possible minor reduction (5–10%) in compressive strength; adjust mix design accordingly.
- **Slump & Temperature:** No adverse impact on slump or heat of hydration.
- **Concrete-Steel Bond:** Bond strength between concrete and reinforcing steel remains unaffected.

Corrosivity

Non-Chloride, Non-Corrosive: RXSOL CIA 222 neither initiates nor promotes corrosion of embedded steel reinforcement. It contains no calcium chloride or chloride-based materials and is compatible with galvanized and prestressing steel systems.

Usage Guidelines

In accordance with ACI 318, good concrete design practices must be followed: maintain a low water-cement ratio, provide adequate concrete cover, and ensure proper compaction to obtain dense, void-free concrete.

For enhanced protection, RXSOL CIA 222 may be combined with supplementary admixtures such as high-range water reducers or silica fume to further reduce concrete permeability.

Storage and Handling

- **Storage Temperature:** Store between 2 °C and 52 °C (35 °F – 125 °F). Protect from freezing.
- **Frozen Product:** Thaw and homogenize by gentle mechanical agitation. Do not use compressed air.
- **Shelf Life:** Minimum 9 months under proper storage; consult representative if extended.

Specification

Appearance	Light amber to pale yellow liquid
Odour / Solubility	Mild characteristic / Completely soluble in water
Density (25°C)	1.10 ± 0.05 g/cm ³
pH (neat)	9 - 11
Chloride Content	Nil (Non-chloride formulation)
Compatibility	Compatible with all Portland cements, pozzolanic additives, and other RXSOL admixtures.
Packaging	Order No: RXSOL-CIA-222 Size: 210 Ltr Drum, 1000 Ltr IBC Tote, or Bulk Delivery

Handling

Handle like other chemical admixtures. Avoid direct contact with skin and eyes. In case of contact, rinse immediately with plenty of water and seek medical attention if irritation persists. Use protective gloves and goggles during handling.

Additional Information

For technical support, dosage optimization, or assistance in developing corrosion-resistant concrete formulations, please contact your nearest **RXSOL CHEMO PHARMA INTERNATIONAL** technical representative.

RXSOL is a global leader in specialty construction chemicals providing advanced admixtures and formulations that improve durability, efficiency, and sustainability of concrete structures.

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