



## Technical Data Sheet

### Crystal Lok® Concrete Treatment [Waterproofs When Applied on Either Side of Concrete Structures](#)

VOC < 0.01 mg/L

#### Product Description

Crystal Lok® Waterproofs When Applied on Either Side of Concrete Structures Crystal Lok® is a water based concrete penetrating sealer, formulated to waterproof, dampproof, seal and keep the natural appearance and profile of Portland cement based concrete, concrete blocks, mortar, gunnite, slabs, floors, subsurface vaults or basements, walls, roofs, pillars, pipe, sculpture, architectural structures, statuary and decorations.

Crystal Lok® penetrates concrete, crystallizes within pores, voids and hairline cracks by a single application of 300 square feet per gallon. Crystal Lok® creates zero permeability in Portland cement based concrete of any shape, and for immersion at least to depths of 173 feet, defends concrete from ground water or other liquids, and from surface penetration of damaging liquids and freeze-thaw surface damage.

#### Basic Use

Crystal Lok® is recommended to protect against water seepage from hydrostatic pressure, freeze-thaw spalling, efflorescence, absorption of liquids including water, oils, acids, ores, chloride ion - salt - intrusion; attack by alcohols, petroleum

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fuels, and other sources of damage where the seepage is not caused by cracking or other structural flaws. Apply to concrete with stone, steel or poly fiber aggregate, free of other chemistry including coatings, sealers, cleaners or contaminants.

Crystal Lok® is fast drying, requires no maintenance, allows for routine and extreme maintenance of the surface including sandblasting and blast track abrading after application, if surface treatments require. Crystal Lok® prevents or aids in abatement of dampness odors caused by mildew bacteria in ground water or flood water or fungal growth colonizing concrete surfaces.

#### Packaging:

CL-5 Five Gallon Pail; CL-55 Fifty five Gallon Drum.

#### Preparation/Application Standards

- ACI 301-05 Specifications for Structural Concrete
- SSPC-SP 13/NACE No. 6 Surface Preparation of Concrete
- SSPC Guide 11 Guide for Coating Concrete
- SSPC-TU 4 Field Methods for Retrieval and Analysis of Soluble Salts on Substrates

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- ASTM D 4258-83 Standard Practice for Surface Cleaning Concrete for Coating
- ASTM D 4259 Abrading Concrete
  - ASTM D 4262 Test Method for pH of Chemically Cleaned or Etched Surface
  - ASTM C 805-02 Standard Test Method for Rebound Number of Hardened Concrete
  - ASTM D 4285 Standard Test Method for Indicating Oil or Water in Compressed Air
  - Other ACT, SSPC or ASTM Standards applicable to specific structure.



## Physical Properties - Technical Data

**Description** - vehicle: Water based, unpigmented, aqueous sodium silicates, penetrating aids & defoamers.

**Appearance:** Clear

**Odor:** No odor or musty

**VOC:** < 0.01 mg/L

**Solubility in water:** 100% dispersible

**Thinning:** Do Not Thin.

**Flammability:** Not flammable

**Flash point:** Over 200°F as packaged liquid. N/A

(Not Applicable) after application

**pH:** 11.5 - alkaline

**Weight per gallon:** 9.8 lbs (4.41 Kg.)

**Shelf life:** Indefinite. Store between 38°F and 125°F (3°C and 41°C). Avoid continuous direct sunlight. Avoid freezing.

**Spread rate:** 300 sq.ft/gallon broom finish. 200 sq ft/gal trowel finish. Recoat: 15-30 minutes for 2nd coat. To 3 days if third light coat preferred.

**Dry time** - Walk on: when eye-dry. Cure may bond tools, hoses or equipment to the concrete. Remove equipment from surfaces, floors or roofs for 12 hours.

**Recommended top coat time:** Varies with topcoat manufacturers specifications for application on alkaline surface: 24 hours to 30 days

**Permeability** of tested concrete: ASTM D5084-90: (zero = watertight): • Positive - pressure on Crystal Lok® treated face = 0 watertight to 173 feet depth. • Negative - pressure on reversed, untreated face = 0 watertight to 138 feet depth. • Laboratory terminated tests at 400 hours with no failures in any test samples.

[Link to Permeability Test Summary](#)

**Shipping:** Water based, Non hazardous. Department of Transportation(DOT) Classification 55 UCC 2839.19.00.00

**CAUTION:** Product is alkaline pH 11.5. Avoid contact with skin and eyes. In case of contact, flush immediately with plenty of water. If irritation continues call a physician. *Do Not Store in Aluminum Containers.* Store, mix, or apply in steel or plastic containers only.

See label and [MSDS](#).

## Application Guide

**Application Conditions:** Apply onto concrete mass of 45°F and rising and below 110°F (7.2°-39°C). Mix well. Agitate while applying. Crystal Lok® may be applied to dry or damp concrete, but not onto puddles or flowing water. Wet down hot concrete to cool to allow absorption before evaporating, and to break surface tension. May be applied to any age concrete. New concrete apply after forms are removed and surface can be walked on - wait 28 days for full cure.

Protect any glass, brass or aluminum surfaces as permanent etching will occur on contact. Not suitable for clay brick or other clay based products as it is not designed for them. Do not apply onto painted surface as it will soften paint.

**Application Method:** Brush, roll or spray undiluted Crystal Lok®. May use garden type sprayer as pressure is not critical. For large areas spray or roller is recommended. Spray in a fan pattern with overlap. Apply at rates of 300 - 200 square feet per gallon, total. May apply this amount in several lighter passes. Second pass after 15-30 minutes. A third pass may be applied up to 3 days following the second. For floors, roofs, may apply to a total of 150 square feet per gallon as the total of three applications if preferred.

Avoid ponding or puddles if a residue free surface is preferred. Puddles will result in white crystalline formations tightly adherent to the surface that requires grinding to remove - the same structure Crystal Lok® creates within the

concrete. Remove puddles by sweeping, air blast or hose surface with water. Water rinse after absorption does not interfere with effectiveness. After applying Crystal Lok® normal concrete maintenance or surface abrasion may be undertaken without altering the permeability.

**Topcoat:** May be top coated with high alkaline tolerant coating. For coatings requiring neutral pH substrate rinse with mineral salts remover, water, or acid etch, to manufacturers specification to obtain recommended pH or surface characteristics. Treated concrete must be rinsed to remove expelled debris & lower pH. Topcoat selection to be based on topcoat manufacturers pH, mineral salts and surface moisture requirements. Note: Crystal Lok treated concrete has a pH of 12-13 for 72 hours then pH of 11.5 unless reduced temporarily by fresh water rinse and removal of residual mineral salts of sodium, silicates, chlorides. After rinsing surface pH will return to 11.5 level within several hours. Schedule rinse/cleaning/top coating carefully. Apply topcoats to manufacturers specifications. APPLY 1. Waterproof membrane/PVC tile/ceramic/granite/marble adhesives; acrylic emulsion & oil based paint after 48 hours. 2. Epoxy & Polyurethane (check pH & moisture) after 7 days 3. M-C Polyurethane (check pH) after 7 days.

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### • LIMITATIONS

- Do Not store, mix or apply in Aluminum containers.
- Requires structural Portland cement concrete, mortar.
- Not suitable for clay brick or other clay based products.
- Do not puddle or allow Crystal Lok® to dry on the surface if residue-free surface is required. Remove unabsorbed excess immediately by spreading with air, wiping up with cloth or sponge mop, squeegee or rinse off. Excessive Crystal Lok® from puddles leaves hard white CSH crystalline deposits requiring blasting,

grinding or acid etch to remove. Same crystallization as inside the concrete. May rinse with water as soon as product is absorbed into concrete.

- Will permanently etch glass, aluminum, porcelain, enamel on contact. Protect from exposure to spray or run-off.
- Do not apply over painted surfaces. Softens paint on contact.
- If concrete will not absorb water, it will not absorb Crystal Lok® Test by sprinkling water on surfaces.
- Will not penetrate if concrete has had prior treatment with similar materials. Test sample area for suitability.
- Do not apply onto concrete below 45° F and above 110° F. Use water to break surface tension on hot surfaces.
- Not compatible with Class C fly ash formulation as that is considered to be self cementitious and pozzalanic. Class F fly ash & silica fume are usually OK. Test first.
- CRYSTAL LOK LLC. does not warrant application of topcoats over Crystal Lok® - treated surface.

**WARRANTY, LIMITATION OF REMEDIES AND LIABILITY: MANUFACTURER WARRANTS THAT THE MATERIAL IS MADE OF THE CONSTITUENT PARTS DESCRIBED. THE MANUFACTURERS LIABILITY IS LIMITED TO THE REPLACEMENT OR REFUND OF PURCHASE PRICE UPON RETURN OF UNUSED PORTION WITH PROOF OF PURCHASE. THERE ARE NO GUARANTEES, EITHER EXPRESSED OR IMPLIED WHICH EXTEND BEYOND THE DESCRIPTION IN THIS PARAGRAPH. USER/ APPLICATOR IS SOLELY RESPONSIBLE FOR DETERMINING WHETHER CRYSTAL LOK® IS FIT FOR A PARTICULAR PURPOSE AND IS SUITABLE FOR USERS APPLICATION AND FOR RESULTS OBTAINED.**

**Technical Services:** call Crystal Lok LLC 916-716-2757 or e-mail to [crystallok@crystal-lok.com](mailto:crystallok@crystal-lok.com) For detail see [www.crystal-lok.com](http://www.crystal-lok.com) Made in the U.S.A. by Crystal Lok LLC. Manufacturing, warehousing, shipping: Portland, Oregon

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