



VEXCON
CHEMICALS, INC.

Protecting and improving concrete since 1974

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STARSEAL® ENVIO SET

High Performance Surface Retarder

VOC Content: 0 gr./liter

DESCRIPTION

STARSEAL ENVIO SET is an aqueous solution of concrete retarding chemicals and conditioners. Apply to fresh concrete to inhibit the setting of a selected surface layer of concrete while the remainder of the concrete cures normally. After the concrete sets or forms are removed, simply remove the StarSeal Envio Set and unhardened mortar to reveal beautifully textured exposed aggregate surfaces. Used on the upper surface of horizontal cast-in-place concrete, StarSeal Envio Set adds a decorative rough textured, non-slip surface to patios, sidewalks, ramps, pool aprons, steps and promenades. When used on precast or tilt-up, StarSeal Envio Set brings rugged, natural elegance to panels, walls or other architectural pieces.

StarSeal Envio Set is available as StarSeal Envio Set F for use as a form retarder. Please consult label for special application information.

BENEFITS

- Meets USEPA AIM and OTC VOC regulations
- Meets Leed point standards for green building
- Allows removal of the top layer of freshly placed concrete to reveal the natural colors of the various aggregates.
- Water borne for environmental concerns and non-flammability
- Forms a reddish brown layer, which helps ensure uniform application.
- Easily exposes aggregate.
- Economical procedure.

APPLICATION

CONCRETE TECHNICAL DATA: The concrete itself is a significant participant in the process. The characteristics of the concrete mix will affect the depth of the etch. Concrete must be carefully mixed and properly vibrated. Depth of etch is influenced by the set time of concrete. Important factors are listed below:

- A). **Type of cement:** Type I and II cements set slower than type III cement, so retarders used with type I and II cements are likely to produce a deeper etch.
- B). **Slump:** Depth of etch will be reduced with stiff mixes that set faster than fluid mixes.
- C). **Water/cement ratio:** Use a workable mix that will not segregate. Segregation adversely affects the appearance of the retarded surfaces. Do not vary the ratio at any time during the project.
- D). **Admixtures:** Do not use admixtures without consulting Vexcon.

ENVIRONMENTAL FACTORS: The depth of the exposed aggregate will be effected by the following environmental factors:

A). **Temperature:** StarSeal Envio Set may be used within normal concrete temperature ranges. However, extreme temperatures will effect cement setting times and the temporary retardation of the concrete surface.

B). **Removal** of StarSeal Envio Set: The water pressure or scrubbing action used to expose the surface may be adjusted to remove more or less concrete.

Test patch: To ensure that StarSeal Envio Set performs as desired under exact job conditions a trial section is required. This section must be prepared duplicating all job conditions, including work crew, thickness and mix design. The sample area must be at least 2 sq. ft. Follow directions below for correct applications and instructions. The trial section should be approved prior to continuing the project.

Retarding: Once the concrete has been screeded and surface water disappears, immediately apply StarSeal Envio Set. Thoroughly mix before applying by brush, roller or sprayer at 100 sq.ft. /gal. (2.5 m²/L) for large aggregate or 150 sq.ft. /gal. (3.8 m²/L) for small aggregate. Apply uniformly leaving no gaps. Product is supplied ready to use, do not dilute.

Exposing the aggregate: The surface material can be removed within 12 to 48 hours when the base concrete has hardened sufficiently. Test a small area to see if the panel or slab has hardened adequately before removing the surface layer. If the depth of the retarded mortar is greater than desired, allow the panel or slab to cure a little longer before exposing the aggregate to the desired depth. Apply one of Vexcons quality cure and seal products to provide a glossy film that protects the beauty of the finish.

STARSEAL ENVIO SET AS AN INTEGRAL ADMIXTURE TO RETARD CEMENT

StarSeal Envio Set can be added to Grouts and site mixed cement to retard setting time and reduce flashing in hot weather. StarSeal Envio Set should be added at 4-5 oz. per 100# (3 ml/Kg) cement in the mix. Add or reduce amount to achieve desired set time.

Typical set reduction per ASTM C 191.

	CONTROL	WITH 5OZ. Envio Set
INITIAL TIME OF SETTING (HR:MIN)	1:00	2:04
FINAL TIME OF SETTING (HR:MIN)	2:00	3:56

SPECIAL NOTES

- Do not cover with polyethylene sheet, as this will effect the ability of the product to retard the surface.
- StarSeal Envio Set is supplied as an emulsion. Not recommended for use at temperatures below 40° F (4°C).
- Keep from freezing and do not store outside in the winter months
- LIMITATIONS: Seal wood and porous forms with a water resistant coating prior to application of the retarder.
- Equipment clean up: Clean application equipment with water. Wash hands and other skin contact areas with soap and water.
- If properly stored in its original sealed container, one year from date of manufacture. Rotate your stock.

PACKAGING

StarSeal Envio Set is available in 55-gallon drums and 5-gallon pails. Contact Vexcon directly to discuss your customized packaging requirements.

VITAL STATISTICS

- Flash Point: None
- Boiling Point: 212° F (100° C)
- Autoignition Temp: ND

HEALTH AND SAFETY

- Use only with adequate ventilation.
- Use of gloves, goggles and other protective clothing is advised when using this product.
- If swallowed, do not induce vomiting.

Vexcon MSDS #OP103 is an integral part of the safety and application of our product. A short synopsis is provided in this product data sheet. Before using this Vexcon product it is advisable to obtain a copy of the MSDS from your distributor or contact Vexcon Chemicals

CONTACT US @

Additional product information, technical assistance and customer service is available by contacting Vexcon Chemicals directly or our distributors.

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