

## Protectosil® CIT

### Advanced corrosion inhibitor for steel reinforced concrete based on organofunctional silanes.

#### Registration

##### Protectosil® CIT

EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes
DSL/NDSL (Canada):	Yes
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECSC (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes

#### Technical Data

Properties and test methods	Value	Unit	Method
Color	clear to slightly amber	-	-
Density	0.882	g/cm <sup>3</sup>	DIN 51757
Viscosity (20 °C)	0.95	mPa·s	-
Flash point	> 60	°C	-
pH	11	-	-

Advanced corrosion inhibitor for steel reinforced concrete based on organofunctional silanes.

#### Safety and Handling

Before considering the use of Dynasytan® and Protectosil® products please read its Material Safety Data sheet (MSDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Material Safety Data Sheet is available after registration on our website [www.dynasytan.com](http://www.dynasytan.com) or upon request from your local representative, customer service or from Evonik Industries AG, Product Safety Department, E-MAIL [sds-im@evonik.com](mailto:sds-im@evonik.com).

#### Packaging and Storage

**Protectosil®** CIT is supplied in 28 l, 205 l as well as 1.000 l container. **Protectosil®** CIT should not come into contact with moisture. **Protectosil®** CIT should be stored at temperatures between -10 °C und 40 °C. **Protectosil®** CIT has a shelf life of 12 months if stored in originally sealed containers.

## Properties and Use

- Low viscous, colorless to yellowish liquid
- > 98 % active ingredient
- Flash point > 60 °C
- Solvent free
- pH of 11

The whole concrete surface including existing repairs should be treated with undiluted Protectosil® CIT. Several consecutive coats should be applied.

### Protectosil® CIT

- dramatically reduces the chloride induced corrosion of steel concrete reinforcement via reaction of active material with the cement phase and the steel surface
- re-passivates steel rebars after chloride induced corrosion
- meets the requirements of EN 1504-2
- is highly reactive and resistant to alkaline environment
- forms colorless and water vapour permeable impregnations
- high reduction of water uptake and of chloride uptake
- is applied undiluted to a concrete surface and is absorbed quickly
- penetrates deeply into the concrete
- is suited for old and new structures
- is suited for every type of steel reinforced concrete
- is effective in marine environments with high relative humidity and areas where deicer salts are used such as jetties, piers, decks, facades, balconies, walkways, bridge decks, beams, columns
- effectively inhibits macrocell (mat-to-mat) and microcell (along rebar) corrosion of steel-reinforced concrete
- reduces corrosion in carbonated concrete steel-reinforced structures
- equalizes the differences in electrochemical potential between polymer concrete and existing concrete when applied to concrete structures repaired with polymer concrete
- Can be used according to principles 1, 2, 8 and 11 of EN 1504-9

The concrete surface must be clean. All traces of dirt, dust, efflorescence, mold, grease, oil, asphalt, laitance, paint, coatings, curing compounds, and other foreign materials that would inhibit penetration have to be removed. Acceptable cleaning methods include shotblasting, sandblasting, waterblasting, grinding, and chemical cleaning.

## Application

Proper application conditions are between 5 °C and 40 °C (40 °-100 °F). Do not apply if rain is expected within four hours following application, or if high winds or other conditions prevent proper application. The substrate should be as dry as possible prior to application. Depending on weather conditions allow 24 to 72 hours for the substrate to dry after rain or cleaning with water.

All delaminated, loose or spalled concrete must be removed and repaired. Shrinkage cracks that are dormant, shallow in depth and with no structural significance can be treated with a multiple coat application of **Protectosil® CIT**. Other cracks should be routed, treated with **Protectosil® CIT** and then sealed with a suitable sealant. **Protectosil® CIT** does not affect the adhesion of most sealants to concrete or that of concrete to rebar.

**Protectosil® CIT** may be applied directly to the cleaned rebar prior to placing repair material. **Protectosil® CIT** does not negatively influence the ability of concrete to adhere to the steel rebar. After the repair measurements **Protectosil® CIT** should be applied to the whole surface.

**Protectosil® CIT** should be applied to concrete using low-pressure pumping equipment with a wet fan-type spray nozzle. Alternate methods include roller, brush or pouring (into a crack, for example). **Protectosil® CIT** should not be atomized.

A liquid film of **Protectosil® CIT** must remain in contact with the substrate for several seconds. Horizontal surfaces should have a shiny, wet appearance for 3-5 seconds. Vertical surfaces should exhibit a 30-50 cm shiny curtain of liquid.

All equipment and containers must be clean and dry. After use they can be cleaned with any organic solvent (methylated spirit, petrol or thinners).

Apply **Protectosil® CIT** to the entire concrete surface, including repaired areas, in a multiple coat application. Allow a minimum of 15 minutes (or until visibly dry) between coats. **Protectosil® CIT** should not be applied to wet concrete.

Substrates in tidal or splash zones should dry as long as possible before **Protectosil® CIT** is applied. As the substrate will still be wet the ability to absorb is decreased. Therefore, **Protectosil® CIT** has to be applied in several coats (6 coats or more) in order to achieve the necessary consumption rate of 500 g/m<sup>2</sup>.

Non-absorbent substrates such as window frames, metal, plastic fittings, window glass, etc., should be covered before application. Surfaces which accidentally come into contact with **Protectosil® CIT** can be cleaned with alcohol (spirit) or aqueous soap solution. Cleaning should be carried out as quickly as possible (within a few hours), otherwise formation of a silicone resin film can make cleaning more difficult. Silicone resin films are best removed using ethanol (or spirit). Plant life should be protected from overspray.

**Protectosil® CIT** should not come into contact with asphalt as it would dissolve. Applied sealants should be fully cured before **Protectosil® CIT** is applied. **Protectosil® CIT** should not accumulate on horizontally applied sealants since it could act as a solvent.

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. EVONIK DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, WHETHER EXPRESS OR IMPLIED, AND SHALL HAVE NO LIABILITY FOR, MERCHANTABILITY OF THE PRODUCT OR ITS FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE), OR OTHERWISE. EVONIK SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.

#### **Europe / Middle-East / Africa / Row**

##### **Evonik Industries AG**

Inorganic Materials  
Rodenbacher Chaussee 4  
63457 Hanau-Wolfgang  
Germany  
PHONE +49 6181 59 13636  
FAX +49 6181 59 13737  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Degussa (SEA) Pte. Ltd.**

Inorganic Materials  
3 Internatioanl Business Park  
#07-18, Nordic European Centre  
Singapore 609927  
PHONE +65 6890 6830  
FAX +65 6899 6630  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Taiwan Ltd.**

Inorganic Materials  
Artist Construction Bldg  
9F, No. 133  
Min Sheng East Road, Sec 3  
Taipei, 105 Taiwan, R.O.C.  
Taiwan  
PHONE +886 227 17 1242  
FAX +886 227 17 2106  
protectosil@evonik.com  
www.protectosil.com

#### **North America**

##### **Evonik Degussa Corporation**

Inorganic Materials  
P.O. Box 677  
299 Jefferson Road  
Parsippany, NJ 07054-0677  
USA  
PHONE (TOLL FREE) +1 800 828 0919  
PHONE +1 973 929 8513  
FAX +1 973 929 8503  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Degussa (Shanghai) Co. Ltd.**

Inorganic Materials  
55, Chungdong Road  
Shanghai 201108  
P.R. China  
PHONE +86 21 6119 1053  
FAX +86 21 6119 1075  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Japan Co. Ltd**

Inorganic Materials  
12th Floor Monolith Building  
2-3-1, Nishi-Shinjuku-ku  
Tokyo 163-0912  
Japan  
PHONE +81 353 23 7300  
FAX +81 353 23 7399  
protectosil@evonik.com  
www.protectosil.com

#### **Latin America**

##### **Evonik Brasil Ltda.**

Inorganic Materials  
Alameda Campinas, 579  
01404-000 São Paulo-SP  
Brazil  
PHONE +55 11 3146 4123  
FAX +55 11 3146 4148  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik Korea Ltd.**

Inorganic Materials  
94, Galsan 1-dong  
Bupyeong-gu  
Incheon, 403-081, Korea  
PHONE +82 32 510 2433  
FAX +82 32 505 2510  
protectosil@evonik.com  
www.protectosil.com

#### **Asia / Pacific**

##### **Evonik India Pvt. Ltd.**

Inorganic Materials  
Krislon House  
Saki Vihar Road, Anderi (E)  
Mumbai - 400 072  
India  
PHONE +91 226 7238 809  
FAX +91 226 7238 811  
protectosil@evonik.com  
www.protectosil.com