



Smart Coatings & Functional Materials

# Allocorr™ Protective Ceramic Alloy

Keeps Carbon Steel Surfaces Rust-Free

## PRODUCT DESCRIPTION:

**Allocorr™ Protective Ceramic Alloy** is a waterborne single-coat protective coating which forms two layers, a protective alloy and a ceramic coating. The carbon steel substrate is passivated to form a non-rusting, insoluble metal alloy and a tough ceramic layer forms over the passivated carbon steel. The ceramic layer exhibits properties of a self-healing coating: it may be scratched or damaged down to the steel substrate surface without re-rusting of the exposed steel.

## TECHNICAL DATA:

Components	Two
Mix Ratio	1:1 (Plural feed application)
Type	Chemically-Bonded Phosphate Ceramic
Curing Mechanism	Low Exotherm
Thinner/Clean-up	Do Not Thin; Clean-up with potable water
Color	White
Finish	Flat
Dry Time (20 mils DFT) (50% R.H., 70° F (20° C))	To touch: 60 minutes To overcoat: 12 hours with <b>Siloxacorr</b> Full cure: 24 hours
Substrate Temperature During Application	60 - 100° F (15 - 38°C)
Humidity During Application & Cure	50 - 95% R.H.
Volume Solids	90%
Theoretical Coverage at 1 mil DFT At 25 microns DFT	1,444 sq ft / gallon 38 sq m / liter
VOC	Zero
HAPS Content	Zero
Flame Spread / Smoke Generation UL 723	Zero
Weight	14 lbs per gallon
Packaging	5 gallon plastic cans
Storage Temperatures	50 - 110° F (10 - 43° C) Do Not Freeze
Shelf Life	Maximum 6 Months

# **Allocorr™ Protective Ceramic Alloy**

## **SUITABLE SUBSTRATES:**

**Allocorr™ Protective Ceramic Alloy** is specifically designed for use only on carbon steel. Stainless, high-alloy and galvanized steels do not form the required passivation interaction. For color and UV protection use **Siloxacorr™ Hydrophobic Siloxane**. (See separate Data Sheet)

## **SURFACE PREPARATION:**

Carbon steel surface to be passivated must be clean and free of contaminants, including mill scale and old coating. Prepare per SSPC SP-1, then dry abrasive blast to SSPC-SP10/NACE 2 or better with an anchor profile of 1.0 to 3.0 mils. Do not use rust inhibitors. SSPC-SP 11 is acceptable for small areas. Vapor blasting to equivalent surface is acceptable. Water-jetting is acceptable where an anchor profile already exists. Light flash rusting after surface preparation and before application of **Allocorr** is acceptable in accordance with SSPC SP-12/NACE 5, WJ2M, moderate flash rust.

Contact **Advanced Polymerics Inc.** for additional information regarding surface preparation.

## **MIXING:**

Use mechanical agitation and a clean mixing blade to stir each component before loading into a heated plural application pump; use separate mixer blades or thoroughly clean the mixing blade with clean water to prevent contamination of the two components of **Allocorr**. Do not mix the 2 components together.

## **APPLICATION EQUIPMENT:**

**Allocorr** is quick setting and must be applied using a plural-component airless spray pump with separate fluid lines connected to a tip-mix or "polyurea" spray gun. Best results are achieved with a heated plural application system with tip-mix gun such the Binks 43P spray-gun with reversible .017" - .021" spray tips.

## **CLEANUP:**

Flush the plural application pump and all components with potable water immediately after completing application of **Allocorr**. Dispose of clean-up water in accordance with all applicable restrictions and regulations.

**Allocorr** is waterborne and mildly acidic. All hoppers, hoses, gun and all components of the spray pump system should be made from stainless steel or non-ferrous materials.

Because of the extremely short pot life, application of **Allocorr** by conventional spray, brush or roller is not possible. A touch-up application system using **Allocorr** material packaged in caulking tubes is available and is suitable for coating of small areas. Normal touch-up, tie-in and repair of transportation damage may be done with the regular **Allocorr** application equipment.

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Contact **Advanced Polymeric Inc.**, for specific application equipment recommendations, to check suitability of available application equipment, and for additional details.

## RECOMMENDED SYSTEMS:

**Allocorr** is specifically formulated to be top-coated with **Siloxacorr™ Hydrophobic Siloxane** (recommended DFT range of 10-15 mils, not to exceed 15 mils).

**Allocorr** may also be used as a replacement for Inorganic Zinc primer, Epoxy Zinc-Rich primer, or any inhibitive primer. Contact **Advanced Polymeric, Inc.** for additional information.

## APPLICATION:

Apply by spray using recommended equipment. (See Allocorr™ Application Guide for full details) Keep the spray gun perpendicular to surface being coated and at 18" to 36" distance. Apply multiple passes and overlap as needed to reach specified DFT. Applied **Allocorr** exotherms (gives off heat) and hardens within minutes of application. Wet film thickness must be checked immediately after application to get correct readings. **Allocorr** dry sprays (Dry-Fall) at distances greater than 4 feet from the spray gun tip.

## DRYING AND RECOAT INTERVALS:

Dry Time (30 mils DFT) (50% R.H., 70°F (20°C))	To Touch:	20-60 minutes
	To Handle:	90 minutes
	To Overcoat:	12 hours
Excessive air circulation over coated surfaces will speed the evaporation process; however rapid moisture loss (i.e. high wind conditions or high substrate temperatures) will cause the ceramic layer to crack. Lower temperatures and higher humidity will extend drying times.		

## TOPCOAT

**Siloxacorr™** can be used as part of a total coating solution giving corrosion resistance and durable color. Due to the porous nature of Allocorr, Siloxacorr should be applied as a mist-coat/full-coat application to minimize any out-gassing from the ceramic layer. See separate data sheet for details). Overcoating intervals should be observed

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## **PRECAUTIONS:**

This product is for use only by professional applicators in accordance with information in this data sheet, contractor training, and applicable SDS. Consult Safety Data Sheets for **Allocorr** Part A and Part B. Wear appropriate personal protective equipment when mixing and applying **Allocorr**. Apply this product in accordance with all relative federal, state and local health, safety and environmental regulations and in compliance with all pertinent regulations as well as good safety practices and recommendations in SSPC PA 1, "Shop, Field and Maintenance Painting of Steel." Dispose of any spills, cleanup water, empty cans and other waste in compliance with all local guidelines and regulations.

## **WARRANTY:**

Advanced Polymerics, Inc. warrants that its products are free from defects in material and workmanship. Advanced Polymerics, Inc.'s sole obligation and buyer's exclusive remedy shall be limited to replacement of products not conforming to this warranty. Any claim for replacement product must be made within one year from the delivery date. Advanced Polymerics, Inc. makes no other warranties, expressed or implied, such as warranties of merchantability or fitness for a particular purpose. Advanced Polymerics, Inc. products are intended for Buyers with the knowledge and skills to evaluate the suitability of Advanced Polymerics, Inc. products for Buyer's intended use. In no event shall Advanced Polymerics, Inc. be liable for consequential or incidental damages. Warranty documentation is available on request.