

PERMACORR™

Provisional Data Sheet 08.12.2021

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| DESCRIPTION | PERMACORR™ hybrid polymeric phosphate-cementitious coating is a waterborne single-coat protective coating which forms two layers, a protective iron phosphate and a cementitious coating. |
| RECOMMENDED USES | PERMACORR™ is specifically designed for use on carbon steel as an anti-corrosive coating |
| PRODUCT FEATURES | Carbon steel substrates are passivated to form a non-rusting, insoluble metal phosphate and a tough cementitious layer forms over the passivated carbon steel. The cementitious 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

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| COMPONENTS | Two (Part A, Part B) |
| MIXING RATIO | 1:1 (See application details; plural feed application only) |
| VOLUME SOLIDS | 85%* (*because of the chemical reaction, final thickness is greater than the solids volume would indicate) |
| DRYING TIMES | Touch: 0.5-5 minutes Overcoat: 8-12 hours with solvent-based, 4 hours with waterborne Full cure: 24 hours |
| COVERAGE | 128 sq ft per gallon* (3.5M ² per liter) at 10 mil/250micron |
| DFT Recommendation | 10 mil/250 micron minimum |
| VOC | Less than 1g/l |
| HAPS CONTENT | Zero |
| WEIGHT PER GALLON | 14lbs (Mixed) 1.3kg/l |
| POT LIFE | Approx. 1-2 minutes |
| PACKAGING | 4.5-gallon plastic pails (9-gallon unit; 2 pails, Approx. 50lbs per pail) 18L |
| SHELF LIFE | 12 months from date of manufacture |
| STORAGE | Protect from frost, do not store below 32°F. |
| THINNER/CLEANER | Distilled/filtered or mains water (Thinning is not recommended) |
| OUTLINE APPLICATION DETAILS See separate application instructions | <p>Spray: Plural feed high pressure spray with short mixer tube or impingement mixer gun (e.g. PMC PX7, Binks 43P*). Pressure: 140-180 bar spray nozzle: 17-27 thou. *Stainless/acid resisting ceramic valve seats. (Contact Advanced Polymerics Inc. for details)</p> <p>Cartridge gun: e.g. Sulzer Mixpac spray. Atomization air pressure 60psi</p> <p>Note: The mixed components are semi-transparent and turn opaque on curing. Curing involves an exothermic chemical reaction; the substrate can become measurably warmer to the touch.</p> <p>Due to pot-life limitations, the product cannot be applied by brush or roller.</p> |

APPLICATION INSTRUCTIONS

Application Conditions:

Temp/Humidity: Material: 50°F Minimum 85°F Maximum (Where possible material should be protected from direct sunlight)

Substrate surface: 40°F Minimum, 100°F maximum (3°F above dew point) Visibly wet surfaces or rain precipitation is not allowed.

Note: Permacorr™ is only to be applied to carbon steel. Stainless, high-alloy and galvanized steels do not form the required passivation interaction. Do not apply over zinc-epoxy or zinc silicate.

Surface Preparation:

Grit blast: NACE 3 / SSPC-SP 6 / Swedish/ISO Std Sa2 (Hand tool cleaning by agreement)

Water Jetting, Wet Abrasive Blasting, Vapor Blasting: is acceptable by agreement.

Light to Moderate flash rust with damp surface is accepted. (See NACE No. 5/SSPC-SP 12)

Visible mill scale is not accepted.

Airless Spray:

1:1 ratio plural spray pump with 30:1 ratio or above (e.g. Graco XP70, Wiwa Duomix 230 or equivalent)

Note: Mixed components have a very short pot-life. Mixing manifold and/or whip-lines are not recommended.

Note: Airless pumps should be specified acid resistant (Stainless steel components, valves, screens, and hoses) wherever possible. Unused materials should not be left in the equipment for prolonged periods and should be flushed with water daily)

Other equipment as recommended by manufacturer.

Gun: PMC PX7 or equivalent with impingement mixing. Binks 43P* with very short (2-3" max) stainless mixer tube.

Spray Tip: 25-45 thou aperture

Cleaning/flushing procedure: Equipment should be cleaned/flushed with clean water for a minimum of 30 minutes followed by flushing with clean water. Acidic residues will damage pump seals and eventually metal components.

Hoses: Standard ¼" or ½" pressure hoses are suitable with standard connectors. Metal parts and connectors (unless stainless) can become clogged during use, due to an accumulation of reactive components. Connections should be visibly checked during cleaning to remove such accumulations. Always purge hoses with water prior to first use.

Low Pressure Spray:

Low Pressure plural component spray systems by agreement. (Contact Advanced Polymerics Inc. for details)

Cartridge Gun: (Small areas only)

Sulzer MIXPAC/MIXCOAT SPRAY; Nordson EFD (or equivalent) with air atomizer and shortest mixer tube (For details contact Advanced Polymerics Inc.)

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Note: PERMACORR™ cures with an exothermic reaction. There will be a noticeable rise in temperature on the substrate of a few degrees after application. When purging material through lines and spraygun, the residue may become very hot and give off steam. Take care when handling or use thermal gloves. The off gassing is in the form of water vapor and is non-hazardous.

Topcoats:

Whilst the cementitious layer hardens very quickly, it can still release moisture for several hours after application. It is important to follow recoat intervals especially when using solvent-borne topcoats.

Repair Procedure:

Damage, misses, un-cured or under-cured material.

Chip back to firm edge using suitable tools and wire brush. Do not burnish the underlying steel. Re-apply PERMACORR™ according to original specifications/application instructions. Feather edges of repair prior to applying topcoat. For small field repairs, contact Advanced Polymerics Inc.

Cleaning of tools:

Tools and ancillary equipment can be cleaned with water or water-based cleaning agents. Steel tools, nonferrous metals and plated metals may show a degree of permanent discoloration.

Mixing Prior to use:

Part A and Part B both require mixing before use. Do not use steel mixers or steel containers for mixing. Stainless steel mixer paddles are preferred. Both part A and Part B require a high torque mixer for efficient stirring. e.g. ¼ HP air motor or equivalent. Continuous mixing for approx. 5 minutes is required. When mixing in plastic buckets or original containers, take care not to damage the plastic with the mixer paddle. Plastic shards can and will block the spray equipment. Passing through a 30 mesh filter screen is recommended.

Waste disposal:

Although the components are low toxicity products, local disposal regulations for paint products must be followed. Not regulated for transport.

Warranty:

Limited product warranty can be found on www.api-smartcoat.com

No specific warranty is implied.