



InfernoWare™ Shield

PSE & SNE Series

Application Instructions

General

Coating Type: Air cure, one part, factory blended

Description: Hybrid Ceramic Coating

Features and Benefits: PFAS Free, Room temperature air cure formula, no catalyst required

Recommended Dry Film Thickness: ~ 1 mil (25 microns), however some colors may require 2 mil, refer to the Technical Data for the specific recommendation. *Spraying more than the recommended film thickness may negatively impact coating performance.*

Cure Time

- Dry to Touch: 30-50 min (depending on coating color, temperature and humidity)
- Recoat: 2 hours
- Full Cure: 7 days (allow 20 days before cleaning with harsh solvents)

Precautions

- Do not dilute, this coating is formulated to be sprayed as is using HVLP gravity fed gun
- Do not heat cure
- Do not repackage
- Storage Temperature: Between 40- 80 °F (4-27 °C)
- Apply coating when air and surface temperatures are between 60-80 °F (15-27 °C) and relative humidity between 30-80%.
- Cooler temperatures or higher humidity may prolong drying and tack-free time.
- Wait three weeks before cleaning the coated part with harsh solvents

Substrate & Surface

This coating can be applied to steel, glass, aluminum, some ceramics, some plastics, or primed surfaces.



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Metallic Substrates Preparation

It is critical for the substrate to be completely clean of grease and other contaminants. Even with blasting the surface, existing contaminants can still be embedded in the surface and will interfere with coating adhesion and may cause delamination and will also contaminate the blasting media. You can degrease with solvents such as acetone or xylenes. You can wipe with lint free cloth until clean. We do not recommend using water-based cleaning solutions with metal substrates as they may rust.

Mask off any area you do not want to be blasted e.g. threads. We recommend you use heavy-duty tape for sand blasting such as 3M 8403 green polyester film tape. Blast the metal surface to remove any rust, scale, or other contaminants. Do not use sandpaper. It is important after degreasing to use the proper blasting media to promote maximum adhesion.

We recommend using clean and dry 80 to 100 grit aluminum oxide blasting media at 100 psi for **steel or other harder metals**.

Use 220 grit at 80 psi for soft metals like **aluminum**.

Using other blasting media may not give the desired results. Surface should **not** be shiny and smooth once it has been adequately blasted, see photo below.



The plate on the left is blasted not blasted and looks shiny and smooth. The plate on the right is blasted and looks dull and rough. That is what you are looking for.

Additionally, ensure that the blasted profile is uniform in finish. If there are patches of the profile that look shinier or duller, the substrate requires more



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blasting until uniform. Do not use oily or contaminated blasting media. Replace media periodically after multiple uses as the media over time will break down and accumulate small contaminants. Test the media by blasting a piece of metal and evaluating the surface to ensure the media is performing the same. After blasting, do not touch any surfaces with bare skin or contaminated gloves where coating will be applied. Blow off the substrates using compressed air. Ensure the air supply is filtered from moisture and oil. Make sure that there is no residue left on the surface. Clean the surface with a solvent such as xylenes, if needed. Safety goggles or a face shield is recommended. Work in a well-ventilated area or wear a respirator.

It is recommended to ultra sonicate the part to remove any residual media that could be lodged into the surface. Especially for difficult to clean surfaces. We recommend sonicating for 15 minutes.

*Important: The surface must be cleaned after blasting to remove contaminants that can interfere with coating appearance and performance.

For best results place substrate in oven at 150 C/ 300 F for 30 minutes and allow it to cool to room temperature before spraying.

Other Surfaces

Careful surface preparation is essential for the maximum performance of this material. Remove grease and other surface contaminants with a degreasing process. For example, use a degreasing solvent such as xylenes. Wipe the surface with the degreaser using a clean cloth followed by dry cloth wipe. Repeat this process several times until the drying cloth does not pick any dirt (color from the surface). Make sure to use clean, soft, absorbent, lint-free cloths and DO NOT dip the cloth into the solvent container. For plastic molded parts, aggressive cleaning is recommended; scrub for 1-2 minutes with brush and xylenes to remove the mold release agent (which is strongly adhered to the plastic surface).

Mixing and Thinning

Mixing

Mix the InfernoWare Shield until no solids remain at the bottom of the container and the product is completely mixed. Incomplete mixing or insufficient



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dispersion of the solids may result in poor coating performance and appearance. We recommend shaking the bottles for 5-10 minutes by hand or with paint shaker if available. Do not dilute, the product is ready to use.

Storage

Store between 40- 80 °F (4-27 °C) in a dry and well-ventilated area. Keep container clearly labeled and tightly closed. Opened containers must be carefully resealed and kept upright to prevent leakage. Keep away from heat, flames, static electricity. Containers are hazardous when empty as they contain product residues. Avoid contact with water.

SNE Series- Bottles may be under pressure, please open slowly pointing bottle away from you and wearing proper PPE. Open and vent the bottles periodically while in storage as they will continue to repressurize.

Thinning (Dilution)

Do not thin. Thinning might result in a change of coating performance.

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Preparation

Do not touch any surfaces with bare skin where coating will be applied. Only use clean gloves, such as powder free nitrile or latex.

Arrange parts for the best access with the spray gun. Ensure the spray gun's air supply is filtered from moisture and oil.

Filter the desired quantity of coating through a 100 micron/ 150 mesh strainer into spray gun.

Spraying

In the case of using a small spray gun like IWATA LPH-80 or similar:

Apply the coating with an HVLP gravity fed gun with a 0.8 mm fluid nozzle. The air pressure should be set to 20-25 PSI with the trigger depressed, resulting in an approximately 3-4" fan pattern. Spray from approximately 3-4 inches from the substrate until the surface is covered. Overlap subsequent passes by 90%, continuing to apply new coating while the previously applied pass is still wet. Spray with sufficient volume so the InfernoWare Shield does not dry spray, which



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is when the coating dries in the air before reaching the part. Allow coating to dry for at least 2 hours at room temperature before applying a second coating using the same parameters listed above.

Ensure the gun is properly cleaned after use to prevent coating from curing inside. Rinse gun between uses if spraying more than one coating.

Coating parameters may need to be adjusted by experience to account for specific spray gun setups and application area airflow. For large substrates, you can use a gun with a larger fluid nozzle and adjust all parameters accordingly.

Spraying a practice part is always recommended for initial spray gun setup.

*Important: When spraying on plastics, test on a sample of the plastic first to check for color/texture and adhesion. The product will have very strong adhesion to certain plastics. Once applied to (including but not limited to: ABS...) it will be very hard to remove.

Allow the parts to air dry (**do not oven cure**). Use caution to avoid touching the coating while it is curing. The parts will be tack-free after 30-50 minutes at room temperature and can be handled and packaged after 1 day.

Please note that low temperatures or higher humidity may prolong drying and tack free time.

Handling After Spraying

Wait 3 weeks before cleaning the coated part.

Avoid harsh solvents such as acetone.

Optimal product performance is based on proper sample preparation and application of coating. Product testing in your facility to ensure performance requirements are met, is highly recommended.

Refer to product SDS for proper handling, disposal, cautions while using. Please contact InfernoWare info@infernoware.net if you have any questions concerning use and application.



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