



INFERNOWARE®

Training Manual



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1. Coating Information Guide

1.1 Coating Descriptions

InfernoWare® Shield	InfernoWare® Dissipate	InfernoWare® Reflect
InfernoWare® Shield is a high-performance abrasion and heat-resistant coating that provides a tough barrier of protection. It's a uniquely formulated durable spray coating that features single-part application, air cure, and no special application equipment. Once cured, the coating provides a tough barrier usually only found in more complicated and expensive coating systems. This product is PFAS free.	InfernoWare® Dissipate is a heat dissipating coating that provides a tough heat-sinking and dissipating layer for many applications. It is a proprietary spray coating that features single-part application, air cure, and no special application equipment. Once cured, the coating can dissipate heat efficiently from hot spots using a combination of thermal conductivity and emissivity. This product is PFAS free.	InfernoWare® Reflect is a thermal resistant coating that provides a tough barrier to heat. It's a simple spray coating that features single-part application, room temperature air cure, and no special equipment needed. Once cured, the coating can protect the substrate material from temperatures up to 600 °C (1100 °F). This product is PFAS free.

1.2 Recommended Dry Film Thickness

Majority of our products require **1 mil (25 microns)**; however, some colors may require 2 mil. Refer to the Technical Data Sheet for the specific recommendation of the intended product.



Spraying outside recommended film thickness may cause delamination, curing issues, or performance failure.



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1.3 Cure Time

Tack Free	30-60 min
Recoat Time	2 hours
Full Cure	5 days before heat applications, 20 days before applying harsh solvents



Cooler temperatures or higher humidity may prolong drying and tack-free time.

1.4 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%.
- Wait three weeks before cleaning the coated part with harsh solvents



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2. Substrate & Surface Preparation

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

2.1 Metallic Substrates Preparation

You can degrease with solvents such as acetone or xylenes. Wipe with lint free cloth until it is clean. We do not recommend using water-based cleaning solutions with metal substrates as they may rust.



Safety First! Please always read the SDS of all products you are using and ensure you wear proper PPE during the process.



It is critical for the substrate to be completely clean of grease and other contaminants. They will interfere with coating adhesion causing delamination and will also contaminate the blasting media.

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. Refer to table below for recommendations.

Substrate Type	Media and Grit	Operating Pressure
Steel or other hard metals	100 Grit Aluminum Oxide Media	100 PSI
Aluminum and other soft metals	220 Grit Aluminum Oxide Media	80 PSI
Plastics	100 Grit Aluminum Oxide Media	30-40 PSI

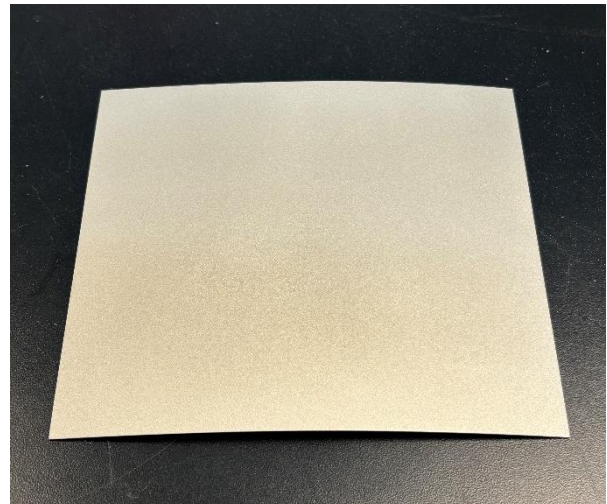
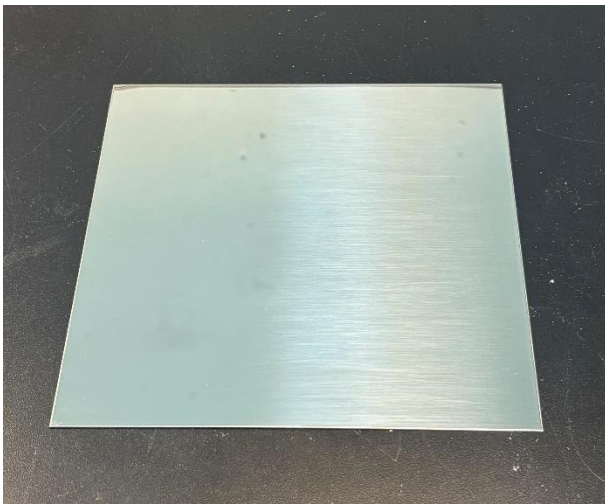


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If the substrate has an existing finish, such as chrome, it must be blasted off. Use the appropriate media based on our recommendations. Do not recycle media used for coating/finish removal as it may contaminate recycled blasting media.

Surface should **not** be shiny and smooth once it has been adequately blasted, see photos below.



The plate on the left is 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.



Do not use sandpaper or alternative media, as you may not get the desired results.



Do not use oily or contaminated blasting media.

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 blasting until uniform. Replace media periodically after multiple uses as the media over time will break down and accumulate



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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 to remove any entrapped debris from the blasting media. 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 First! Please always read the SDS of any materials you are using. For blasting, make sure you wear safety goggles and a respirator. Work in a well-ventilated area.



The surface must be cleaned after blasting to remove contaminants that can interfere with coating appearance and performance. 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. Refer to figure below for set up.



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The picture on the left shows the set up for the ultra-sonication. Use a plastic container and place the substrate inside. Fill the container with xylene until the substrate is entirely submerged. Seal a lid on the container and then place container inside the ultrasonicator. Make sure you close the valve that releases the water and fill the sonicator bath with water until it reaches the minimum level recommended for the instrument. You may need to use an additional clean metal piece to weigh the container down to hold it in place. Set the sonicator for 15 minutes with NO heat. Make sure you do not get water inside the xylene container.



Always operate the instrument based on the instructions in the manual for the particular model you are using.



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. It is very important to remove any remaining contaminants. Look at sample carefully and if you see oil or other contaminants, you must repeat the cleaning and blasting process.

2.2 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. The coating will adhere differently to different types of plastic; it is recommended to test a sample to verify which surface



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preparation method is required, whether that is cleaning alone or cleaning and blasting. For glass, it is recommended to clean with hot water and detergent such as Alconox for best adhesion. You can coat after it has been cleaned.



For plastic molded parts, aggressive cleaning is recommended; scrub for 1-2 minutes with a brush and xylenes to remove the mold release agent (which is strongly adhered to the plastic surface).



For float glass (such as window glass) make sure you coat the air side and not the tin side. Use a UV light to verify which side is which. The tin side will glow in UV light.

3. Mixing and Storage

3.1 Mixing

Mix the InfernoWare product until no solids remain at the bottom of the container and the product is completely mixed. Incomplete mixing or insufficient 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 thin or dilute, product is ready to use.

3.1 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, and static electricity. Containers are hazardous when empty as they contain product residues. Avoid contact with water.



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

4. Application Parameters

4.1 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 product through the appropriate sieve. Use the table below for the correct selection.

InfernoWare® Shield	InfernoWare® Dissipate	InfernoWare® Reflect
100 micron/150 mesh	100 micron/150 mesh	30 mesh



Safety First! Please always read the SDS of all products you are using and ensure you wear proper PPE during the process. For spraying, wear a full-face respirator and gloves and work in a well-ventilated area.



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4.2 Spraying

In the case of using a small spray gun like IWATA LPH-80 or similar, refer to table below for recommended spraying parameters for each series.

InfernoWare® Shield	InfernoWare® Dissipate	InfernoWare® Reflect
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. Apply 3 passes to achieve optimal thickness.	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. Apply 3 passes to achieve optimal thickness.	Apply the coating with an HVLP gravity fed gun with a 1.2 mm fluid nozzle. Pigment is too big to flow through a smaller fluid nozzle. The air pressure should be set to 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. Apply 1 pass to achieve optimal thickness.



InfernoWare® Dissipate: It is very easy to pool the coating causing rippling in the finish. The above parameters are what worked for the specific gun outlined. This potential defect can best be avoided by either reducing the pressure of the gun, and/or increasing the distance between the gun and the substrate. It is highly recommended to test spray a sample to adjust the parameters to what achieves the best finish.



InfernoWare® Reflect: It is very easy to dry spray this coating, which is when the coating dries in the air before reaching the substrate. Spray with sufficient volume so the coating wets out and ensure you are spraying close enough to the substrate to achieve wet out. It is highly recommended to test spray a sample to adjust the parameters to what achieves the best finish.



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Allow coating to dry for at least 2 hours at room temperature before applying a second coating using the same parameters listed above, if additional coating is necessary.

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.



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. Use caution to avoid touching the coating while it is curing. The parts will be tack-free after 30-60 minutes at room temperature and can be handled and packaged after 1 day.



Do not oven cure. Oven curing may negatively impact coating performance.

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



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4.3 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.

FAQS

When can I oil the sprayed part?	After 20 days
What is the recommended film thickness?	1 mil, unless otherwise specified in TDS. Spraying outside of recommendation may negatively impact coating performance.
Can I dilute the formula?	No, coating is ready to spray as is. Diluting will negatively impact coating performance and coverage.
Can I oven cure?	No
When can I expose the coating to heat?	Allow coating to cure at least 5 days before applying heat.

DISCLAIMER: The information in this Product Application Guide is believed to be correct as of the date issued. InfernoWare provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions, or alterations in this information, InfernoWare makes no representations as to its completeness or accuracy.