

NANOMYTE® SuperAi-UVP

NANOMYTE® SuperAi-UVP is a nanocomposite coating with enhanced weatherability that imparts anti-icing and UV-protective properties to the underlying substrate. The transparent coating also provides a hard, dense and smooth finish. Surfaces treated with SuperAi-UVP are protected from the effects of UV radiation and exhibit reduced ice adhesion, thereby preventing ice buildup. The single component, ambient-cure coating can be applied to a variety of substrates, including plastics, metals, glass, and ceramics.

Technical Data

Color:	Clear
Curing Temperature:	20° – 150 °C
Cured Film Thickness:	5 – 15 µm
Coverage:	110 m ² (1200 ft ²) / gallon
Solids Content:	18 – 20 %
Water Contact Angle:	100 – 105°
Weatherability:	1,000 hours (minimum, DFT = 0.5 mils) by ASTM D4587 (G154, Cycle 1)

Surface Preparation

Ensure surfaces to be coated are clean, dry, and in sound condition. Before applying SuperAi-UVP, remove all oil, grease, dust, dirt and other foreign material by using an appropriate cleaner. To ensure that the surface is completely free of oil and grease, use a lint-free white cloth with a solvent such as alcohol or acetone, and wipe the surface. If the cloth remains white, the surface is clean; if the cloth turns dark, continue cleaning until it remains white. Once clean, SuperAi-UVP can be applied by following the instructions below.

Coating Application

It is recommended that coating application be performed in a clean environment to minimize surface defects. The coating can be applied by immersion, spraying, rolling, or brushing. Only one coat is required to cover the substrate. Under ambient conditions (25°C / 77°F, 50% RH), a single coat is 5 – 15 µm (0.2 - 0.6 mil) thick. Dilute with isopropanol as needed.

Spraying:

When surface preparation is complete and surface is dry and free of dust, begin application using a high volume, low pressure (HVLP) spray gun with a 1.0 mm tip and a pressure of approximately 25 to 30 psi. On a piece of cardboard, first test spray to achieve a 6" to 8" elongated pattern approximately 1" wide in the middle and fluid enough to cover but not puddle. Wind may affect the quality of the finish as it can disrupt the spray pattern from your HVLP gun. It can also contribute to contamination of the finish with blowing dust. It may be necessary to erect a windscreen to protect the area. Once the desired spray pattern is achieved, spray one coat in a cross-pattern; left to right, then up and down. This will provide sufficient coverage and will help prevent holes in coverage. The desired minimum wet film thickness (WFT) is approximately 2.0 to 2.5 mils (spraying undiluted solution).

If using spray application in an enclosed space, make certain to tent off the area being sprayed with plastic tarps to prevent spray dust from traveling and contaminating other surfaces. Tented and enclosed areas always require PPE, a positive supply of fresh air, and strong exhaust ventilation. Never spray near any open flame or any possible source of ignition such as a pilot light, or anything that may spark, as this may cause ignition and explosion of fumes and vapors.

Rolling:

Make certain the surface is clean as per preparation instructions. Using an ultra-smooth high-density foam roller, pour SuperAi-UVP into a roller pan and completely saturate the roller. Apply in a cross-pattern; left to right, then up and down, as quickly as possible, as the coating dries fast. Limit pressure on the roller to achieve a better looking finish.

Brushing:

Make certain the surface is clean as per preparation instructions. Select the appropriate size brush width for the surface being coated. Using only a good quality brush, apply SuperAi-UVP in a cross-pattern; up and down, then left and right. For best results, do not overwork the coating, as it dries fairly quickly. Do not bear down with the brush. Use light strokes using the tip of the brush to smooth out the coating. Desired minimum wet film thickness (WFT) is approximately 2.0 to 2.5 mils.

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Curing

Ambient Curing:

Under ambient conditions (25°C / 77°F, 50% RH), a single coat will be dry to the touch in 1 hour and completely cured in 24 hours.

Accelerated Curing:

In order to accelerate curing, let the coated surface dry in ambient air for 10 minutes and then heat to at least 105°C for a minimum of 5 minutes, preferably ~15 minutes. An oven, blow dryer, or heat gun may be used (maximum temperature is 150°C).

Application Notes

Test Area:

Given the wide variety of metals and the various methods and environments of application, it is advisable to first apply SuperAi-UVP to a test piece or in an inconspicuous area to evaluate the resulting adhesion and appearance. There will often be some enhancement in luster (gloss) from the original surface. SuperAi-UVP is a translucent coating which may impart a hazy appearance, particularly at high thicknesses.

Clean Up:

Clean tools and flush equipment immediately after application is completed with acetone thoroughly before product dries. Once coating is dry, the tools will not clean with acetone or any other solvent.

Weatherability and UV Protection:

For best performance, when applying to UV-sensitive surfaces (e.g., plastics, composites), apply as thick a coating as possible, and/or ensure a minimum DFT of 0.5 mils (10-15 microns). Select the appropriate surface preparation protocol (cleaning and/or surface treatment, priming) and test to ensure coating adhesion has been maximized. Some surfaces (e.g., certain paints, plastics and composites) may require a primer, such as **NANOMYTE® SR-Primer**. Samples intended for weatherability testing should be conditioned for a minimum of 1 week at 25°C with at least 50% relative humidity.

Storage & Handling

Precautions for Safe Handling:

Appropriate personal protective equipment should be used at all times. Provide good ventilation or extraction. Avoid prolonged or repeated breathing of vapor. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks, flames and other sources of ignition. Wash hands thoroughly after handling.

Conditions for Safe Storage:

Avoid storage over 100° F and contamination with incompatible materials. Keep containers tightly closed in a cool, well ventilated place. Protect from moisture. Residual vapors might explode on ignition. Do not apply heat, cut, drill, and grind or weld on or near this container.

Refer to SDS for complete information on the safe handling of this product.

Additional Information

WARNING: This product should not be used, stored, or transported until all handling precautions and recommendations stated in the Technical Data Sheet (TDS) and Safety Data Sheet (SDS) for this coating are understood. Exposure should be minimized and direct contact should be avoided through the observance of proper precautions, use of appropriate engineering controls, and proper personal protective clothing and equipment.

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