

BluSky Armor® 1057-U
Aerospace Clear High- Build Coating
Universal Gloss

Product Description

A high build single stage, cross-linked UV curable thermoset polymer top coat. For use as a finish for wood and synthetic substrates particularly when the substrates have already been stained or coated. Upon exposure to UV, the coating cures tack-free within 120 seconds. The cured coating has excellent adhesion, is harder, more abrasion and solvent resistant than other polyurethane or polyester thermoplastic coatings. The formulation is 100% solids containing zero solvents or HAPs (100% VOC free). The product exhibits no off-gassing, resulting in no “orange-peel” to be sanded off between applications. The product does not need any catalyst or reducer and is ready to use as is.

Storage

Store product at ambient temperature (< 70 °F). Storing at cooler temperatures will increase product lifetime. Storing at higher temperatures will decrease product lifetime.

Product is warranted to be free from defects in performance and design for a period of 6 months from the date of manufacture if stored at < 70 °F without opening.

Any tampering, misuse or negligence in handling or use of the Product renders the warranty void. Further, the warranty is void if, at any time customer stores the product in a manner inconsistent with the recommended conditions.

Method of Use

Product is stable under typical ambient room lighting for 10 – 30 minutes.

Stability can be extended to several hours by using UV Protective Films on lights and windows in the area where the product is being used.

Product may not be mixed with other clear top coat products.

Product may be reduced with isopropyl alcohol (IPA).

Do not use the product in areas exposed to direct or indirect sunlight (i.e. through windows).

Product is unstable and will cure upon exposure to sunlight.

Surface Preparation

Clean the surface area to remove any contamination. Use only dry air or alcohol (such as IPA) to clean the surface. Do not use any solvent based cleaner, degreaser, or tack cloths. Use sand paper or Scotch Brite. Remove dust using compressed air. The product can be applied over completely cured stains, sealers, or primers. Make sure surface is completely dry before application.

For applications on raw wood or veneer, BluSky Armor® 1007-U diluted with 10% IPA is recommended for the first application layer as a self-sealing material.

When using over cured sealers and primers, the substrate first requires sanding with non-stearated sandpaper before applying product.

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Application

Apply in a well-ventilated room, use appropriate PPE including safety glasses and protective clothing (refer to SDS). Wear a respirator when spray coating.

Brush, roll or spray onto substrate at room temperature (>70 °F).

Substrate temperature should be >60 °F.

Any spray equipment may be used. The recommended tip size is 1.0 – 2.0 mm depending on dilution. Follow the manufacturers best practices protocol. After use, unused resin should be stored in an opaque container and may be reused as long as the viscosity has not increased.

Unused resin should not be returned to the original container.

The spray equipment should be cleaned with isopropyl alcohol.

First coat (seal coat) should be applied as per the Application Process below, depending on if the surface is unstained, stained or has a sealer or primer coat.

Apply subsequent build coatings of 1057-U at thicknesses of 5 - 10 mils.

Application Process on Wood and Synthetic Wood Veneer

1. SEAL COAT

When coating wood and wood veneer surfaces the first layer, or seal coat, should be applied using BluSky Armor® 1007-U. Subsequent layers may be applied using BluSky Armor® 1057-U.

a. UNSTAINED WOOD or VENEER

- i. If the wood has not been stained, sand the wood out with non-steared sandpaper before applying any finish. Use shop air with the grain. Lightly wipe the surface with a lint-free damp cloth using isopropyl alcohol. DO NOT USE any solvent-based cleaner, degreaser, or tack cloth.
- ii. Spray a very light mist coat of BluSky Armor® 1007-U diluted with 10% IPA over the entire surface. Allow to soak for at least five minutes. Do not cure this application.
- iii. Apply a second mist coat of diluted BluSky Armor® 1007-U and allow it to soak into the veneer for a minimum of five minutes. Do not cure this application.
- iv. Apply a third mist coat of diluted BluSky Armor® 1007-U and allow it to soak/ settle for a minimum of five minutes. By this coat the application should appear glossy on the surface prior to curing.
- v. Cure the finish by exposing the panel to MSI UV-500 curing lamps for 120 seconds, or until this finish is cured completely tack-free.
- vi. After curing, sand the coating with 600 grit non-steared sandpaper to deburr, straighten, and thoroughly degloss.

b. STAINED WOOD or VENEER

- i. Spray a very light mist coat of diluted BluSky Armor® 1007-U over the entire surface. Allow to soak for at least five minutes. Do not cure this application.
- ii. Apply a second mist coat of BluSky Armor® 1007-U and allow it to soak into the veneer for a minimum of five minutes. Do not cure this application.

- iii. Apply a third mist coat of diluted BluSky Armor® 1007-U and allow it to soak/settle for a minimum of five minutes. By this time the application should appear glossy on the surface prior to curing.
- iv. Cure the finish by exposing the panel to MSI UV-500 curing light for 120 seconds, or until this finish is cured completely tack-free.
- v. After curing, sand the coating with 600 grit non-stearated sandpaper to deburr, straighten, and thoroughly degloss.

c. SEALED and/or PRIMED WOOD or VENEER

- i. All sealers and primers must be completely cured using the Manufacturer's protocol.
- ii. Sand the surface with non-stearated sandpaper to achieve a mechanical bond.
- iii. Follow the same steps as stated in Step 2. **BUILD COATS** application below.

ci. BUILD COATS

- a. Apply a layer of clear coat of 5 - 10 mils. Allow a minimum of five-minute dwell time to allow the wet clear coat to self-level.
- b. If desired for a faster build, a second application may be applied wet-on-wet.
- c. Cure under UV light as described in the previous step. *BluSky Armor® 1057* may be diluted using isopropyl alcohol (IPA) to desired consistency for spraying.
- d. Allow product to return to ambient room temperature, a minimum of five minutes. Sand the coating with 600 grit non-stearated sandpaper to deburr, straighten, and thoroughly degloss.

cii. ADDITIONAL LAYERS TO FINAL DEPTH

- a. Repeat application Step 2.a as many times as needed to achieve desired depth. Lightly sand the intermediate layers to flatten or deburr the surface area.
- b. After the last build coat application is complete, do not sand the surface of the final coat. Allow the panels to rest overnight to allow the clear coat to complete the curing process.

ciii. SANDING, POLISHING & BUFFING

- a. After resting the panels overnight, wet-sand the entire surface, beginning with non-stearated sandpaper in the range of 800 - 1000 grit to straighten/flatten the clear coat.
- b. The appearance of pin holes or surface defects can be eliminated with spot application and curing of the BluSky Armor® clear coat product. Sand back to the surface level.
- c. Continue to wet sand, stepping up with finer grit non-stearated sandpapers from 1500 to 3000 grit, and up to 5000 grit if desired.
- d. Finish with the 3M Finesse It or Perfect It polish system, using a foam pad.
- e. Perform a final dry buff with a dry lamb's wool pad to achieve a superior durable high-gloss finish.

Clean Up

Use isopropyl alcohol to clean tools and equipment.
For skin contact, wipe with IPA, then wash with soap and water.

Some key “Do’s and Don’ts”:

1. Do not use a degreaser, acetone or a standard tack cloth to prepare the surface of the panel. It is acceptable to use a SurgicalBlue® Super Tacrag™, made by MWB Industries.
2. Use 91% isopropyl alcohol (IPA) to prep before application of the seal coat and between coats.
3. Use a spray nozzle tip size of 1.0 – 1.6 to spray the product MSI 1007-U and 1027-U, and a gun pressure of 21 - 30 psi. Actual pressure will be determined by make and type of spray gun, booth temperature and relative humidity.
4. Use a spray nozzle tip size of 1.6 - 2.0 to spray BluSky Armor® 1057-U High Build, and a gun pressure of 28 - 35 psi. Again, actual pressure will be determined by make and type of spray gun, booth temperature and relative humidity.
5. Make sure that the can or the cup liner in the sprayer is opaque to block any light from activating the clear coat in the sprayer. We suggest liners found in the 3M PPS Kit # 50730.
6. Wet sanding is critical to the speed of finishing and to achieving the optimum high-gloss finish that BluSky Armor® offers.
7. Avoid over-working the surface with coarse grit paper. Use a light hand pressure to avoid creating deep sanding marks. Keep moving up in grit fineness.
8. Wet-sand, cut and buff within 18 hours of applying final top coat. The finish hardens as it cures.
9. If saving leftover clear coat, store it in a separate opaque bottle from any unused BluSky Armor® clear coat in its original container.
10. Clean up the spray equipment with isopropyl alcohol.

Physical Properties

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|---|---------------|--------------------------------------|
| Pencil hardness | ASTM D3363 | 6H |
| Adhesion to wood veneer | ASTM D3359-09 | 5B |
| MEK Double Rubs Alcohol (IPA) Diet Coke | ASTM D5402-93 | 200+ 200+ 200+ |
| Tensile Modulus Strength Elongation | ASTM D638-10 | 203,000 psi 4,200 psi 7% (2.3) |
| Shore D Hardness | ASTM 2240-15 | 75 |
| Viscosity | | 290 cps @ 25 °C |
| Density | | 1.14 kg/L 9.53 lb/gal |

Additional information:

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|--------------------------|----------------|
| Solids content | 100% |
| Volatile Organic Content | 0% |
| Coverage @ 10 mil | 155 sq. ft/gal |

Product Hazards and Safety information

See SDS for complete information.

Although the product is VOC free it should be used in a well-ventilated area.

If skin contact occurs immediately wash with soap and water.

Harmful if swallowed.

Causes skin and eye irritation and may cause an allergic skin reaction.

Harmful to aquatic life with long lasting effects.

This product complies with the *European Parliament & Council Directive 76769EEC* and does not contain decabromodiphenyl ether, pentabromodiphenyl ether or octabromodiphenyl ether.

Limitation of Liability: The technical data and suggestions for use contained herein are correct to the best of our knowledge and offered in good faith. The statements of this literature do not constitute a warranty, whether expressed, or implied as to the product performance and merchantability for a particular purpose. MSI Coatings may guarantee this product to conform to our standards of quality, and our liability, if any, shall be limited to replacement of defective materials. Any and all technical information is subject to change without notice and it is the responsibility of the end user to verify that they have the most current available technical and safety information.