

MSI Coatings Inc.  
16040 Homecrest Circle  
Elbert, CO 80106



***BluSky Armor® 1027-U  
Aerospace Clear Top Coat  
Universal Gloss Technical Data Sheet***

**Product Description**

A single stage, cross-linked UV curable thermoset polymer top coat. For use as a sealer and 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. Use on flat or curved surfaces that are not mechanically buffed and polished, or when minimal spot buffing is required. 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**

The product must be stored 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 opens the product or 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 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.

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For applications on wood, it is recommended to seal the wood with BluSky Armor® 1007-U reduced with 10% isopropyl alcohol (IPA) applied in a mist coat. However, 1027-U can be used as a seal coat as well, applied according to the instructions below.

For use over sealers and primers, the substrate requires sanding with 400 grit non-stearated sandpaper, then wiping with IPA before applying product.

## **Application Conditions and Equipment**

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 – 1.4.

After use, unused resin should be stored in an opaque container and may be reused if 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 at thicknesses of 2 - 5 mils.

## **Application Process on Wood and Synthetic Wood Veneer**

### **1. SEAL COAT**

#### ***a UNSTAINED WOOD or VENEER***

- i. If the wood has not been stained, sand the wood out with non-stearated 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 reduced by 10% with 91% 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 reduced BluSky Armor® 1007-U and allow it to soak into the veneer for a minimum of five minutes.
- iv. Cure this application with MSI UV LED lights for 120 seconds.
- v. Sand the coating with 400 grit non-stearated sandpaper to deburr, flatten, and thoroughly degloss the surface.
- vi. Repeat steps ii. through v.

#### ***b STAINED WOOD or VENEER***

- i. Spray a very light mist coat of BluSky Armor® 1007-U reduced with 10% IPA over the entire surface. Allow to soak for at least five minutes. Do not cure this application.
- ii. Apply a second mist coat of reduced BluSky Armor® 1007-U and allow it to soak into the veneer for a minimum of five minutes.

- iii. Cure the finish by exposing the panel to MSI UV-500 curing for 120 seconds, or until this finish is cured completely tack-free.
- iv. After curing, sand the coating with 400 grit non-stearated sandpaper to deburr, flatten, and thoroughly de-gloss.
- v. Repeat steps i. through iv.

**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.

**2. BUILD COATS**

- i. Apply a layer of full-strength 1027-U clear coat of 2 - 5 mils. Allow a minimum of five-minute dwell time to allow the wet clear coat to self-level. Cure under UV light as described in the previous step.
- ii. Allow product to return to ambient room temperature, a minimum of five minutes. Lightly sand the coating with 400 grit non-stearated sandpaper or a Scotch Brite pad to degloss the surface.

**3. ADDITIONAL LAYERS TO FINAL DEPTH**

- a. Repeat application Step 2.i as many times as needed to achieve desired depth. Sand the intermediate layers with 400 grit non-stearated sandpaper or a Scotch Brite pad to degloss.
- b. After the last build coat application is complete, allow the panels to rest long enough to return to room temperature before proceeding to the sanding and buffing steps below.

**4. SANDING, POLISHING & BUFFING**

- c. After resting the panels, sand the entire surface, beginning with non-stearated sandpaper in the range of 800 - 1000 grit to straighten/flatten the clear coat.
- d. 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.
- e. Continue to sand, stepping up with finer grit non-stearated sandpapers. At 3000 grit begin wet sanding with a foam-padded disc. Continue wet sanding with 5000 grit.
- f. Finish with the 3M Finesse-It or Perfect-It polish system
- g. Perform a final dry buff with a *drylamb'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 or petroleum or wax tack cloth to prepare the surface of the panel. Use 91% isopropyl alcohol (IPA) to prep before application of the seal coat and between coats.
2. Use a spray nozzle tip size of 1.0 – 1.4 to spray 1027-U; or a tip size of 1.6 – 1.8 to spray 1057-U.
3. Use low pressure on the spray gun, approximately 20 PSI. Adjust pressure to keep spray pattern compact and to minimize introduction of air bubbles into the clear coating.
4. 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. 3m’s PPS cup liner system, p/n 50730, is an ideal solution.
5. Avoid over-working the surface with coarse grit paper. Keep moving up in grit fineness.
6. Sand, cut and buff within 18 hours of applying final top coat. The finish hardens as it cures.
7. If saving leftover clear coat, store it in an opaque bottle separate from any unused BluSky Armor® clear coat in its original container.
8. Clean up the spray equipment with isopropyl alcohol.

**Physical Properties**

Vertical Burn	14CFR 25.853(a)	Pass
Pencil hardness	ASTM D3363	6H
Adhesion Wood Veneer	ASTM D3359-09	5B
MEK Double Rubs Alcohol (IPA) Diet Coke Red Wine	ASTM D5402-93	200+ 200+ 200+ 200+
Tensile Modulus Strength Elongation	ASTM D638-10	30,000 psi 70 psi 15%
Shore D Hardness	ASTM D2240-15	70D
Viscosity		32 cps @ 25 °C

**Additional information**

Solids content	100%
Volatile Organic Content	0%
Coverage @ 4 mil @ 10 mil	400 sq. ft./gal 160 sq. ft./gal

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***Product Hazard 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. Product is 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.