

Cleaning and Clear Coating Procedure for Printed Parts for ISO 10993 Tests

Supplies and Tools Needed

- Ethyl Alcohol (Ethanol) – Anhydrous Reagent HPLC/Spectro from ChemProducts, product code: C-A0445-40. Alternative grades can be (A) Ethanol Anhydrous Denatured Reagents from ChemProducts, Product code: E0285-62; or (B) Pure 190 proof, meeting USP testing specification, from Sigma-Aldrich, catalog # 493538-4L)
- Coating: Accure SL L-9000 (available from 3D systems)
- 2-Propanol (IPA) – Semi Grade by High Purity Products, Portland, Oregon
- Protective Clothing
- Nitrile Gloves
- 600 mL Glass Beaker



- Sonicator: Yamato 2510 by Branson or similar ultrasonic cleaner with a heated tank operating at 40kHz



- 32 oz. Ethanol Wash Bottle



- Curved Extra Fine Tip Tweezers



- VWR® Reclosable Clear Ziplock Bag (Various sizes)



- Aluminum pan or Similar Tray or Drying Rack



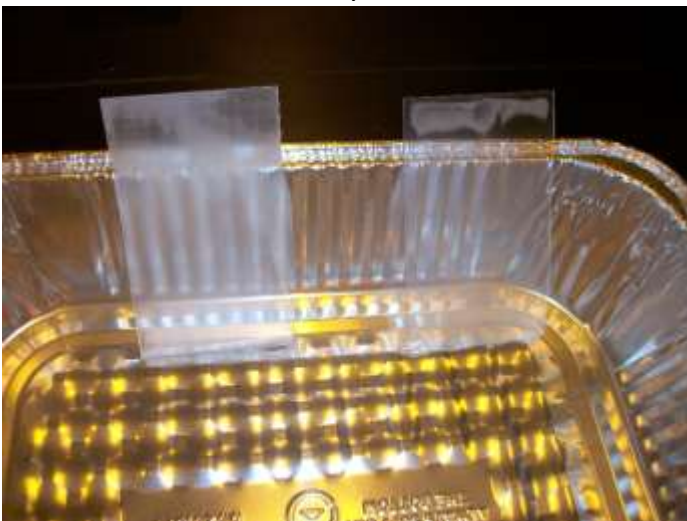
Steps for Cleaning a Part

1. Clean the glass beaker, tweezers, aluminum pan and ziplock bag by rinsing with fresh ethanol.
2. Pour approximately 580 mL ethanol into the cleaned 600 ml glass beaker, and then place it into the tank of the Sonicator. For the first sonication, the ethanol can be either fresh or used to clean similar parts just one time previously.
3. Fill tank of Sonicator to the “operating Level” mark with tap water.

4. Turn on the Sonicator, setting the temperature to 21 °C and the sonication time to 5 min.
5. Place two parts into the ethanol in the cleaned glass beaker and begin sonication for 5 min. at 21 °C. Arrange parts so that they do not touch or shadow one another during sonication.



6. Use the clean tweezers to remove one part from the beaker. Rinse the part with fresh ethanol three times on all sides of the part.
7. Repeat step 5 and step 6 for the other part that has been sonicated.
8. Using fresh ethanol, perform a second sonication following the previous steps 2 through 7, as required.
9. Use clean tweezers to place the parts on edge in a clean aluminum pan or other suitable drying tray or rack and allow to air dry for 15 to 25 minutes.



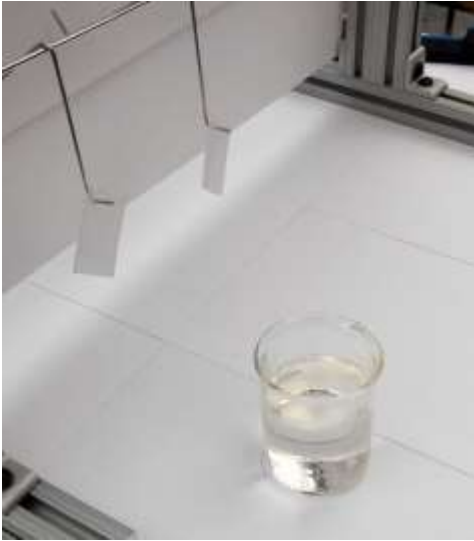
Clear Coating By dipping or Brushing)

Clear coating of the part is done with a mixture of 50% Accure SL L-9000 and 50% IPA.

Coating Procedure:

1. Make a mix of 50% Accure SL L-9000 (available from 3D systems) and 50% IPA

Ensure the two components are thoroughly mixed and pour enough into a container to dip your part in or to use with a brush.



2. Find a method to grip the part that you are coating.

A small hook or alligator clip works well if the part is small enough.



3. Apply the first coat of paint. Leave a small area around where you are holding the part clear of paint.

If dipping: Lower the part slowly into the mix. The goal is to evenly coat with no bubbles or gaps in the coating. As you draw the part out of the mix, move slowly and make sure no areas pool or collect paint.



If brushing: Apply even strokes working to get a consistent thickness on all the surfaces, avoiding the area where you are holding the part.



4. Allow the part to completely dry in air for 24 hours.
5. Grip the part on an already painted surface and coat the remaining uncoated area.

