

Tech Tip 5

Controlling Photopolymer Washout

The consistent high quality of MacDermid photopolymers can help you monitor the effectiveness and productivity of your washout processing equipment.

The three-dimensional image of a MacDermid photopolymer plate is created by exposing the polymer to UV light. The back of the plate is exposed to establish the floor thickness and relief depth. The face of the plate is exposed through a photographic negative to create the image and the shoulder angle.

The printing image is produced by washing out the unexposed polymer with brushes and a washout solution. Washout begins at the face and proceeds gradually deeper until the cured floor is reached and the full relief and shoulder structure created by the UV exposure is revealed.

The amount (thickness) of unexposed polymer removed per minute is called the “wash rate.”

Washout characteristics and solutions differ for various MPS photopolymer types; BUT, *the wash rate is consistent from lot to lot for each type material*. Many platemakers regularly check the MPS wash rate for early indication of changes in equipment efficiency and solution effectiveness. Here are some Tech Tips on improving washout and monitoring your equipment.

Washout Tips

1. Always check solution level before processing and restore to proper level if low.
2. Always check solution freshness before starting and change or replenish if necessary.
3. Always check the drum or brush to see that it is properly adjusted for the type and thickness of plate materials being processed.
4. Do not greatly exceed recommended wash times. If washout is excessive, additional solvent will be absorbed and longer drying time will be required.

Rinsing

Each plate must be thoroughly rinsed and blotted after washout and before drying. Rinsing removes polymer residue and assures a smooth-finish plate surface.



For solvent-processed plates, rinse each plate with clean, fresh washout solution. A squeeze bottle is a convenient method. Aqueous processed plates are rinsed with clean, soft water. After rinsing, blot with absorbent lint-free towels.

Rinsing may be done in the washout unit.

Checking Washout Rate

The thickness of unexposed photopolymer removed per minute is called the wash rate. Since the wash rate of each type of MacDermid material is consistent from lot to lot, regular wash rate checks will give early indication of changes in equipment and solution effectiveness. Monitoring wash rate is a simple procedure.

1. Take several unexposed sheets from a lot of MPS material that you use on a regular basis and cut into 6-inch squares.
2. Store these test samples, lying flat, in a totally dark box. Mark the box with material type and gauge.
3. When ready to check wash rate, adjust washout unit for the materials you will be using.
4. Remove the coversheet from a test sample, mount it in the processor and wash for 10 minutes.
5. Remove the sample, rinse it and dry for 10 minutes.
6. Measure the relief (thickness of material removed) to the nearest one-thousandth of an inch. Record measurement on table provided below.
7. Divide this relief measurement by 10 to determine wash rate. Record this on the Table.
8. If the wash rate has changed substantially from the previous test, begin troubleshooting procedures.

Wash Rate Control

1. Wash test sample 10 minutes.
2. Rinse and dry 10 minutes.
3. Measure relief depth to nearest one-thousandth of an inch and record.
4. Divide measurement by 10 and record as wash rate.
5. If wash rate has changed substantially, begin troubleshooting.



Photopolymer							
Gauge							
Lot No.							
Date							
Relief Depth							
Wash Rate							
Date							
Relief Depth							
Wash Rate							
Date							
Relief Depth							
Wash Rate							
Date							
Relief Depth							
Wash Rate							

