

Tech Tip 12

Cleaning Photopolymer Plates

Cleaning plates correctly is important for maintaining good print quality and long plate life. There are two basic parts to cleaning a plate. One is the physical action when the plate is actually scrubbed with a brush. The other part is the chemical action when a cleaner is brought into contact with the plate.

Physical Cleaning

Each of the following factors is important in determining how well a plate can be cleaned after a run.

Brush/Rag Type

The cleaning brush should be soft with fine bristles. Brush bristles should be soft nylon or natural fiber bristles such as horse hair. Be sure that the brush bristles are tight and do not shed. Never use a brush that has bristles made of metal to clean a plate. Metal bristles will cause major damage by scratching and gouging the plate.

Avoid using rough rags or shop towels for cleaning because they may also scratch the plate. Some shop towels contain lint and contaminants from the laundry process that can release onto the plate surface and affect ink transfer.

The rule of thumb for cleaning plates should be, "If you wouldn't scrub your hands with it, don't scrub a plate with it." After brushing, blot excessive cleaning solution with a lint-free towel or cloth.

Brush Pressure

To properly clean a plate, it isn't necessary to scrub the plate hard. Too much pressure can cause plate surface damage. After wetting the plate with the cleaning solution, moderately brush the entire plate surface. Be sure to give fine screens and reverses adequate brushing. During brushing keep generous portions of cleaning solution on the plate to minimize brush scratching. After satisfactory brushing, be sure to inspect the plate for fibers and other types of contamination.

Drying Time

If ink is allowed to dry on the plate after the run it can cause cleaning issues. Ink starts to dry



on the plate immediately after the press stops. Volatile components in the ink begin to evaporate, leaving behind the solid components of the ink. The time in which ink dries on the plate is dictated by the volatility of these ink components. Generally solvent-based ink formulas dry faster than water-based ink formulas. Such factors as ambient temperature and humidity may have effects on the ink drying. Dried water-based ink has low rewettability and can be difficult to clean. Both solvent and water-based inks require the operator to clean the plate promptly after the press run has completed.

Chemical Cleaning

Plate cleaner may be in a liquid or powder form. Some are concentrates that need to be diluted with water. Always follow the safety and usage directions on the container. When the plate is wetted with cleaner, the ink film will dissolve and becomes easier to remove with brush agitation. When cleaning plates, wet the plate with cleaner solution and allow the plate to soak momentarily prior to brushing. To prevent plate damage during the cleaning process, avoid plate soaking for an extended time and only use recommended plate cleaner.

When Plate Cleaning is Neglected

Plates that are improperly cleaned prior to storage can stick together, develop surface cracks, and be even more difficult to clean upon reuse. Plates may stick together if the plates are stacked immediately after the press run and are not allowed to dry completely after cleaning or are not separated by an interleaf. Attempts to separate plates that are stuck together may result in damage to the printing surface. Plates are also more sensitive to ozone damage if not properly cleaned before storage. Cracks always develop first where the ink is present on the plate. Dried ink on the plate always requires more aggressive cleaning methods, which increases the chance of plate damage.

Chemicals to Avoid

There are many plate cleaners on the market today. Some may work better than others, depending on your particular application.

Listed below are chemicals for sheet and liquid photopolymers that should generally be avoided. If in doubt, call MacDermid's Technical Service Department at 1-800-348-7201 and we'll be glad to help.



Chemicals to Avoid

Solvent Processed Sheet Photopolymer

Acetone
Cellusolve (>20%)
Ethyl Acetate (>20%)
Heptane
Hexane
Isopropyl Acetate (>20%)
Methyl Ethyl Ketone (MEK)
Normal Propyl Acetate (>20)
Toluene
VM & P Naptha
Xylene

Water-Wash Sheet Photopolymer

2-Nitropopane
Acetone
Butyl Cellosolve
Cellosolve
Ethyl Acetate
Ethyl Alcohol
Ethylene Glycol
Heptane
Hexane
Isopropyl Acetate
Isopropyl Alcohol
Methyl Alcohol
Methyl Ethyl Ketone (MEK)
Normal Propyl Acetate
Normal Propyl Alcohol
Propylene Glycol
Toluene
VM & P Naptha
Xylene

Liquid Photopolymer

Butyl Cellosolve-Glycol
Ethanol-Alcohol
Isopropanol
Mineral Spirits
Naptha
Propylene Glycol
Rubbing Alcohol

