+ Efficient Plate Production

Tech Tip #1

Creating solutions that flex.

Proper design and layout of your photopolymer plate production area will increase platemaking efficiency and provide a comfortable, pleasant workplace.

We recommend an enclosed area in order to facilitate proper ventilation and elimination of dust. Floor, wall and ceiling surfaces should be non-dusting. The area should be well lighted and easy to clean.

Space Requirements

The space needed for platemaking will depend on the exact equipment required by the nature of your shop and the types of plates to be processed. MacDermid representatives can advise you on the type and size of equipment best suited to your needs. A basic facility will include:

+ Digital imaging device
+ Exposure unit
+ Processing unit
+ Drying unit
+ Finishing unit
+ Plate cutting equipment
+ Work table
+ Light table to inspect negatives
+ Shelves for material and plate storage
+ Measuring instruments

Equipment should be arranged for efficiency. Work and inspection tables should not interfere with processing equipment. Digital imaging device, exposure, washout, drying and finishing units should be positioned for good workflow. Remember to provide room for free movement of solvent tanks and drums.

A MacDermid representative can aid in planning an efficient equipment layout. As a guide, we suggest these minimum space requirements for plateroom.

Maximum Plate Size Capability of Equipment	Suggested Plateroom Area*
52 x 80 in.	1150 sq. ft.
42 x 60 in.	966 sq. ft.
36 x 44 in.	550 sq. ft.
24 x 32 in.	350 sq. ft.

*not including digital imaging device

Position processing units for good workflow and maximum operator convenience.

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MacDermid GRAPHICS SOLUTIONS

Efficient Plate Production

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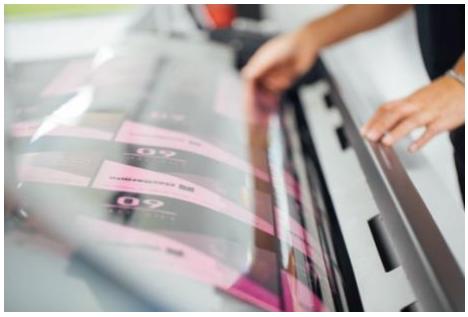
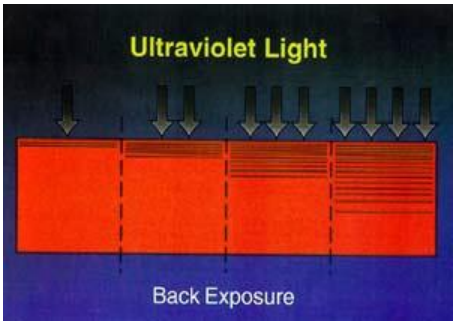
MacDermid GRAPHICS SOLUTIONS

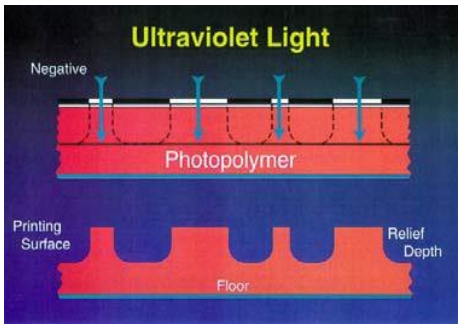
Preparation
Prepare the digital files and cut photopolymer plate material to proper size.



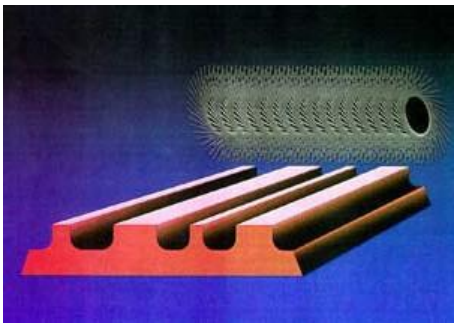
Back Exposure
Establish thickness of plate floor (relief depth) by curing part of photopolymer plate with UV light.



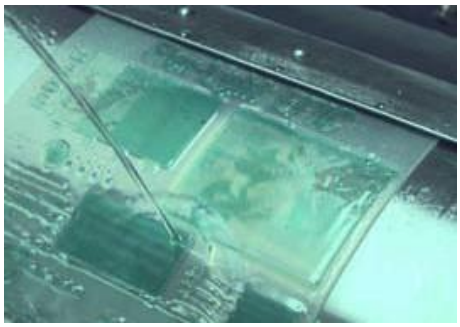
Face Exposure
Create cured 3-D image in photopolymer layer with UV light.



Processing
Remove uncured photopolymer with solvent and brushes or temperature and blotter leaving cured image.



Rinsing (solvent processing)
Rinse plate thoroughly to remove uncured photopolymer residue.

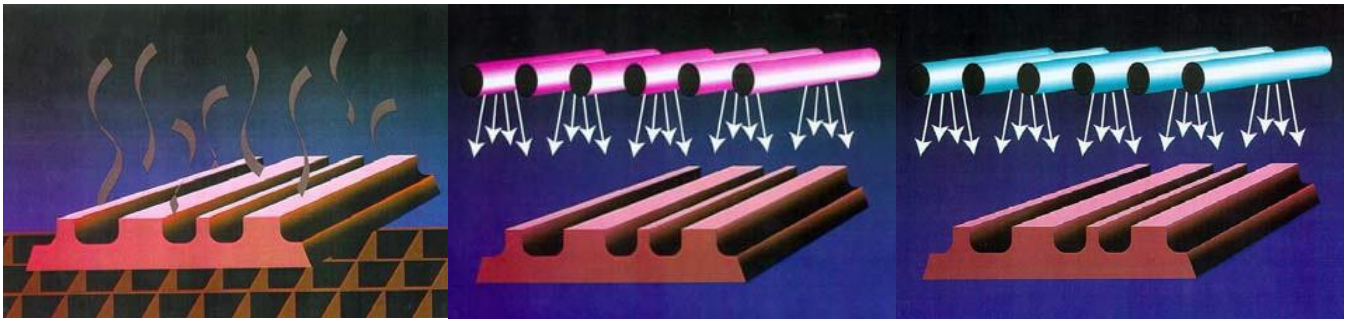


Blotting (solvent processing)
Blot rinsed plate with lint free towel (automatic with some equipment) to remove excess solvent.

Pre-Dry and Inspection
Examine surface of plates for defects and polymer residue. If necessary, wipe lightly with fresh solvent.

Finishing
Detack plate to increase wear life and prevent surface stickiness.

Post Exposure
Crosslink (cure) any uncured polymer, increasing press life and resistance to ink solvents (simultaneous with finishing in some machines).



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Ventilation

Always consult with a qualified heating/ventilation contractor to ensure that government standards for worker exposure to processing chemicals are met.

In general, platemaking facilities should meet these minimum requirements:

+ Room air change: one change every 6 minutes.
+ Washout area air change: Solvent System - one change every 3 minutes
  Aqueous System - one change every 6 minutes.
+ Heating/air conditioning system must supply sufficient makeup air to replace air exhausted by processing equipment and ventilation system.
+ Room air should not be recirculated.
+ Ventilation system should not introduce fumes to other parts of the building.
+ Room exhausts should be located at floor level and close to processing equipment.
+ Exhaust discharge should be away from ventilation intakes and pedestrian areas.
+ Solvent vapors should not come in contact with open flames, sparks or high temperature sources.
+ Electrostatic dust filters are helpful in removing dust from the air.

Lighting

A bright, well-lighted plateroom will help platemakers produce the highest quality. However, unprocessed photopolymer can be "cured" by long-term exposure to the ultraviolet contained in ordinary light. Plateroom lights should be covered with an ultraviolet filter. Most customers use standard cool white fluorescent lamps with clear UV shields. Natural light from windows and skylights should also be filtered through UV filters.

Walls, Ceilings and Floors

Walls and ceilings of the plateroom should be sealed and painted with a non-chalking, non-dusting paint. A smooth surface will be easier to keep dust free.

For durability, we suggest that floors be finished with a seamless chemical-resistant coating such as epoxy and polyurethane. It is a good idea to apply the finish a few inches up the wall for extra protection. Consult a qualified flooring professional for recommendations on coatings with resistance to the types of solvents and chemicals you plan to use.