

Tech Tip 121

M Clean Washout Formulation

Proper processing of MacDermid liquid photopolymer printing plates is very important to ensure the quality of the final plate product. Use of an all-liquid bath formula provides more consistent plate development, as no dissolving of powders is required. The following table provides the recommended bath formulas for MacDermid photopolymers based on estimated bath volumes. For a precise makeup for your equipment, determine exact water fill and adjust chemistry according to the formula below:

Component	% by Weight	3048 System	4460 System	4080 & 5280 Systems
Water	--	70 gallons	120 gallons	150 gallons
M Clean Developer	3.0	17.5 lbs (24.5 cups)	30 lbs (42 cups)	37.5 lbs (52.5 cups)
M Clean Detergent	2.0	11.5 lbs (17.5 cups)	20 lbs (30 cups)	25 lbs (37.5 cups)
M Clean Defoamer	1.25	7.25 lbs (12.5 cups)	12.5 lbs (21.25 cups)	15.5 lbs (27 cups)

** The above formulation is utilized for ranges of water hardness levels below 180 (Hard). For conditions where hardness levels are above 180 (very hard), or below 17 (soft), please consult your MacDermid technical representative as Developer levels may need to be adjusted.*

PROCEDURE

- Based on your bath volume and using the guidelines above, calculate the required amount of detergent, developer and defoamer (see reverse side for calculations).
- Using the automatic fill switch, fill the developer unit with water.
- Using the amounts calculated in the previous step, add M Clean Detergent and M Clean Developer while the bath is filling with water.
- Shake M Clean Defoamer briefly before measuring. Add calculated quantity to a small amount of water in a bucket and mix. Add the premixed defoamer/water mixture to the developer unit while the unit is filling with water.
- Run the developer unit through one to two cycles to thoroughly mix all components after the batch is filled.

TEMPERATURE

The bath temperature must be maintained at 90-100°F (32-38°C).

CHANGING THE BATH

Typical bath life in batch operation is 8-15 plates, depending on copy, thickness of plate, and efficiency of reclaim. Maintain a record of the number of plates processed in every bath and work with your MacDermid Technical Representative to determine the maximum number of plates that should be processed for best quality and efficiency.



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Calculating Bath Quantities

A. WATER FILL

$$\frac{\text{_____}}{\text{gallons added}} \times 8.34 = \frac{\text{_____}}{\text{lbs added}}$$

or

$$\frac{\text{_____} \times \text{_____} \times \text{_____}}{\text{Length height width (in inches) of water in bath}} \div 231 \times 8.34 = \frac{\text{_____}}{\text{lbs added}}$$

B. M Clean Detergent

$$\frac{\text{_____}}{\text{lbs water}^1} \times 0.02 = \frac{\text{_____}}{\text{lbs Detergent}} \times 1.5 = \frac{\text{_____}}{\text{cups Detergent}}$$

C. M Clean Developer

$$\frac{\text{_____}}{\text{lbs water}^1} \times 0.03 = \frac{\text{_____}}{\text{lbs Developer}} \times 1.4 = \frac{\text{_____}}{\text{cups Developer}}$$

D. M Clean Defoamer

$$\frac{\text{_____}}{\text{lbs water}^1} \times 0.0125 = \frac{\text{_____}}{\text{lbs Defoamer}} \times 1.7 = \frac{\text{_____}}{\text{cups Defoamer}}$$

1) From "A" above

