ACCELERATOR PM™-964

For Industrial Finishing Applications

Regional Product Availability			
N. America	Japan/Korea	Asia	Europe
✔			✔

DESCRIPTION

Accelerator PM-964 was developed for straight-thru ABS plastics. It is an effective accelerator that removes catalyst from plating racks and stop-off paint while leaving the plastic fully catalyzed for consistent and complete electroless coverage. Accelerator PM-964 is referenced in PM Plating on Plastics Processes.

ADVANTAGES

- Eliminates stop-off paint and rack plating
- Permits electroless copper straight-thru plating without process adjustment
- Reduces production interruption through long bath life, also, has high tolerances to chrome, iron and increases production yields through high consistency in performance

BATH MAKE-UP

Chemicals Required	Metric	(U.S.)
Deionized Water:	800 ml/l	(80% v/v)
Concentrated Sulfuric Acid*:	22 ml/l	(2.2% v/v)
Accelerator PM-964:	60 g/l	(8.0 oz./gal.)

* For 41° Baumé battery grade (water-white) sulfuric acid, multiply the sulfuric acid additions by 2.5.

BATH MAKE-UP

1. Add deionized water to tank.
2. Slowly add sulfuric acid with constant stirring to avoid splashing.
3. Add Accelerator PM-964 and mix thoroughly.
4. Dilute to final volume.

Bath Operation	
Operating Temperature	46°C (115°F)
Immersion Time	1–5 minutes (2 preferred)
Agitation	Mild air agitation
Filtration	As with all Accelerators, Accelerator PM-964 should be continuously filtered

BATH MAINTENANCE

Maintain the normality between 1.1 and 0.9N total acidity.

NORMALITY—(TOTAL ACIDITY) CONTROL PROCEDURE

I. Equipment

a) Transfer pipettes

b) 250 ml Erlenmeyer flask

c) 100 ml Graduated cylinder

d) 10 ml Class A volumetric flask

II. Reagents

Phenolphthalein indicator; 1% in ethanol

III. Titrant

1.0N sodium hydroxide

IV. Procedure

a) Pipette 10 ml of bath into a 250 Erlenmeyer flask.

b) Add 75 ml distilled water.

c) Add 3–5 drops phenolphthalein indicator.

d) Titrate with 1.0N sodium hydroxide to a pink end point.

V. Calculation

Normality = ml NaOH × N NaOH × 0.1

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Replenishment—Metric		
Bath Normality	**Concentrated Sulfuric Acid**	**Accelerator PM-964**
1.1	—	—
1.0	2.5 ml/l	6 g/l
0.9	5.0 ml/l	12 g/l
0.8	7.5 ml/l	18 g/l

Replenishment—U.S.		
Bath Normality	**Concentrated Sulfuric Acid**	**Accelerator PM-964**
1.1	—	—
1.0	0.25% v/v	0.05 lb./gal.
0.9	0.50% v/v	0.10 lb./gal.
0.8	0.75% v/v	0.15 lb./gal.

FOR EACH 100 GALLONS OF BATH:

Bring to level with deioinized water after bath removal and replenishment.

Replenishment (Steady-State Operation)			
Bath Normality	**Bath Removal Gas**	**Concentrated Sulfuric Acid 66° Baumé gal.**	**Accelerator PM-964 Storage lbs.**
1.1	—	—	—
1.0	1.0	0.28	5.5
0.9	2.0	055	11.0
0.8	3.0	0.83	16.5

PRODUCT DATA

For the specific Product Data values, please refer to the Certificate of Analysis provided with the shipment of the product(s).

EQUIPMENT

Tanks:	Polypropylene or PVC-lined mild steel
Heaters:	Steam coil or jacketed tank; Teflon™ fluoropolymer carbate or tantalum coil
Pump:	Plastic
Filter:	5 micron polypropylene
Plumbing:	PVC, PVDC or polypropylene

EQUIPMENT PREPARATION

Prior to make-up, the process tank and ancillary equipment should be thoroughly cleaned and then leached. This is especially important when the equipment is brand new or if it has been used for another type of processing.

I. Cleaning Solution

a) Trisodium phosphate: 15 g/l (2 oz./gal.)

b) Sodium hydroxide: 15 g/l (2 oz./gal.)

II. Leach Solution

Sulfuric acid: 100 ml/l (10% v/v)

III. Procedure

a) Rinse down equipment with water and discard wash water; make sure filter cartridges are removed from the filter chamber.

b) Fill system with clean water and re-circulate to remove water soluble materials; discard water.

c) Add the cleaning solution to the system and heat to 55–60°C (130–140°F) and circulate for at least 4 hours; discard solution.

d) Fill system with clean water and re-circulate for 10–20 minutes; discard water.

e) Add the leaching solution to the system and re-circulate for 10–20 minutes. Leave the leaching solution in the system for at least 8 hours; discard solution.

f) Fill system with deionized water and re-circulate for 10–20 minutes; discard solution.

g) Repeat step 6.

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HANDLING PRECAUTIONS

Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

CAUTION! Keep combustible and/or flammable products and their vapors away from heat, sparks, flames and other sources of ignition including static discharge. Processing or operating at temperatures near or above product flashpoint may pose a fire hazard. Use appropriate grounding and bonding techniques to manage static discharge hazards.

CAUTION! Failure to maintain proper volume level when using immersion heaters can expose tank and solution to excessive heat resulting in a possible combustion hazard, particularly when plastic tanks are used.

STORAGE

Store products in tightly closed original containers at temperatures recommended on the product label.

DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Rohm and Haas Electronic Materials Technical Representative for more information.

ELECTRONIC MATERIALS

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CMP Technologies

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Microelectronic Technologies

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