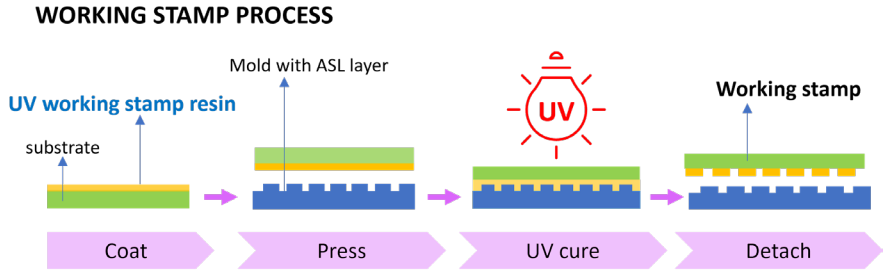
PA-106

UV Working Stamp Resin for Working Mold for UV-NIL Applications



PA-106: UV working stamp resin. PFAS FREE, solvent free, acrylic, radical polymerization

PRODUCT USE: PA-106 is used for fabrication of working mold or working stamps for UV-NIL applications.

FEATURES:

- Excellent release performances
- High Tg and high chemical inertness for repeated imprints with minimum height gain
- Low viscosity, low coating thickness, no stress or curling on treated PET film

TYPICAL PROPETIES of PA-106:

Before cure (liquid)	**PA-106**
Viscosity (cps, 25 °C)	24 to 30
Density (g/mL)	1.1
Shelf life (15 - 25 °C)	6 months
Working life (20 - 30 °C)	3 months
After curing - cured film	**PA-106**
Tg (DMA, °C)	140
% Transmission (400 to 900 nm)	>90

APPLICATION NOTES:

Master mold or Sub-Master mold preparation:

- To protect the master mold or submaster mold surface the use of an antistick layer (ASL) is recommended.
- ASL: Fluorinated base silane coupling or hydrocarbon base compounds
- Master mold materials: Ni, Si, Quartz, or polymer

Substrate conditions:

- To obtain the optimal performance for PA-106, adhesion treated PET film (example: Toyobo's COSMOSHINE® treated PET film) or adhesion treated glass should be used.
- Adhesion promotors for glass substrates: acidic or basic adhesion promotors including acidic or amino silanes can be used to prime the glass surface. Alternatively, plasma treatments can be used to improve adhesion.

Dispense process: Spin coating or droplet dispensing.

- 1000 rpm/60 sec: 6 microns
- 1500 rpm/60 sec: 4 microns
- 2000 rpm/60 sec: 3 microns

Recommended Layer thickness for working stamp: 3 to 4 microns

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UV CURING CONDITIONS: UV dose (J/cm^2) = 10 to 20

- Metal halide / Mercury UV: UV-A (320-400 nm), intensity: 50-1,000 mW/cm^2
  Suggested curing conditions: 200 mW/ cm^2 x 100 sec
- or LED-365 nm, UV light intensity: 100 to 1,000 mW/ cm^2
  Suggested curing conditions: 200 mW/ cm^2 x 100 sec
- Atmosphere: cure between two substrates or in an inert atmosphere (oxygen-free)

GENERAL USAGE INFORMATION:
Storage: room temperature storage (15-30°C) in the original container is required.

SAFETY AND HANDLING
The uncured resin can be cleaned with isopropyl alcohol (IPA), methyl ethyl ketone (MEK), acetone, or xylene. Avoid direct skin and eye contact. Use only in well ventilated areas. Use protective clothing, **gloves and safety goggles**. Read Safety Data Sheet before handling.

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