ROGERS CORPORATION

Advanced Circuit Materials

Advanced Circuit Materials Division
100 N. Dobson Road
Chandler, AZ 85224
Tel: 480-961-1382 Fax: 480-917-5256
www.rogerscorporation.com

Data Sheet

R/flex® 8080
Liquid Photoimageable Covercoat

Description

Rogers R/flex® 8080 Liquid Photoimageable Covercoats help achieve the ultra-fine patterns needed for today's high density flexible printed circuits. Offering uniform coverage and reliable performance in mass production processes, R/flex 8080 materials allow manufacturing of high precision patterns unattainable through conventional screen printing.

Contact photo exposed and alkaline developable, R/flex 8080 products provide excellent resistance to all plating processes, including electroless nickel and gold plating. Processing stability, along with long shelf life and pot life, make R/flex 8080 covercoats dependable solutions to meet industry performance requirements.

R/flex 8080LP3, 8080LP5, 8080LP6, and 8080LP7 are silicone-free formulas.

Product Features

- Ideal for high density, ultra-fine feature flexible printed circuits
- Suitable for mass production processes
- Long shelf life and pot life with excellent process stability
- Exceptional adhesion, heat resistance and electrical insulation properties
- Excellent plating resistance, including electroless Ni and Au plating processes
- Outstanding flexibility and creaseability

R/flex 8080 Part Numbering System
To determine the part number for 8080, use the following system.

R/flex 8080LP 1 G 0640-R

1. Product Type
2. Product Color
3. Net Weight (g)
4. Resin or Hardener

For example, a product with the part number listed above would have the following characteristics:

1. Product Type — The first number indicates the product types for R/flex 8080:

Product Type	Critical Mixing Ratio Resin/Hardener	Weight Mix Ratio Resin/Hardener
8080LP1	100g/38g	1/0.38
8080LP2	100g/46g	1/0.46
8080LP3	100g/46g	1/0.46
8080LP4	100g/38g	1/0.38
8080LP5	100g/46g	1/0.46
8080LP6	100g/43g	1/0.43
8080LP7	100g/43g	1/0.43

The example is product type 1.

2. Product Color — The letter "G" indicates Green. "A" indicates Amber. Pigment is in the resin portion.

3. Net Weight (g) — Net weight of the container is expressed in grams. The example product weight is 640 grams.

4. Resin or Hardener — R/flex 8080 is a 2 part system. The letters "R" and "H" designate whether the product is a resin or hardener. The example product is a resin.

Mixing Calculation

For product types 1 or 4, multiply the weight of base resin used by the hardener weight factor of 0.38 to determine the required quantity of hardener needed. For product types 2, 3 and 5, use hardener weight factor of 0.46 and for product types 6 and 7, use a hardener weight factor of 0.43."

Example:

If 0.155 Kg or (155 grams) of TYPE 1 or 4 resin is used, then multiply by hardener weight factor of 0.38. ie., 0.155 Kg x 0.38 = 0.0589 Kg (or 58.9 grams).

Typical Values

Specific Properties	8080LP1	8080LP2, 3, 5, 6 & 7	8080LP4
Viscosity @ 25°C (77°F)	190-230PS	190-230PS	190-230PS
Pot Life @ ambient	approx. 3 days	approx. 3 days	approx. 3 days
Approx. shelf life @ 5°C (41°F)	6 months	6 months	6 months
Approx. shelf life @ 25°C (77°F)	3 months	3 months	3 months
Drying after screening s/s (167°F)	75°C, 30 min	75°C, 30 min	75°C, 30 min
Photoexposure	400-600mj/cm²	400-600mj/cm² **	500-700mj/cm²
Development Time/Rinse Time	1 min each	1 min each	1 min each
* Final Cure (do not exceed 60 min.)	150°C/302°F/30 min	150°C/302°F/30 min	150°C/302°F/30 min
Solder dip test			
10 seconds @ 260°C/500°F	Pass	Pass	Pass
Thermal Decomposition Temp.	358°C (676°F)	382°C (719°F)	382°C (719°F)
Pencil hardness	5H	5H	5H
Dielectric Strength	500 to 700 V/mil	500 to 700 V/mil	500 to 700 V/mil
Water absorption immersion			
24hr/23°C (73°F)	1.29%	1.29%	1.29%
4hr/85% /85°C (185°F)	0.73%	0.73%	0.73%

*** 8080LP5 requires an exposure of 530-750mj/cm², LP6 requires an exposure of 460-690mj/cm² and LP7 requires an exposure of 600-900mj/cm².*

Rated Properties	8080LP1	8080LP2, 3, 5, 6 & 7	8080LP4
	Note: Rogers relative scale factor 1 to 10 with 10 being Excellent		
Brittleness in Process	2 to 4	2 to 4	2 to 4
Final Flexibility	10	7	7 to 5
Tackiness at Photo	5	5 to 7	10
Heat Resistance	7	10	7
Photosensitivity	10	7	7
Final UV Resistance	10	7	7
Developability	10	7	7
Electro-chemical migration	7	7	10
Plating Resistance to Ni/Au	7	10 (LP5 & LP7 are 8)	10

Notes:

1. ***Do not use UV heating systems for curing/baking. Use convection oven with good turnover. Total cure time not to exceed 60 minutes.
2. Avoid creasing product between coating, photo and final cure to avoid cracking. Full properties develop at final cure.
3. UV lamp wavelength in exposing unit should be 365 nm. Do not use collimated light. Artwork and cover must be UV transparent polyester.

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