



DuPont *i*Technologies

# VACREL® 8100

Dry Film Solder Mask

## Quick Reference Processing Guide

<b>Roll Length</b> on 152.5mm (6") cores	121 m (400 ft.) - US Only 91 m (300 ft.) - Europe and Japan
<b>Roll Width</b>	15-61 cm (6" to 24" in .25" increments)
<b>Product Thickness</b>	<b>8120</b> - 2 mils thick <b>8130</b> - 3 mils thick <b>8140</b> - 4 mils thick
<b>Color</b> (Initial) (After Cure)	Matte Medium Green (Transparent) Matte Green for Bake/UV Cure, and Yellow Green for UV/Bake
<b>Spectral Sensitivity</b>	320-700 $\mu$ m
<b>Exposure Range</b>	350-450 $\mu$ m
<b>Resolution</b>	= 125 $\mu$ m (= 5 mils)
<b>Artwork Reproduction</b> of 1.27 mm (50 mil) pad openings with recommended exposure	1.24-1.27mm (49-50 mils)
<b>Material Storage</b> (Unused Rolls) (Partially Used Rolls)	5-21°C (40-70°F) & 50 $\pm$ 20% RH Last Lap Must Be Taped to Keep Roll Integrity

## PROCESS STEPS AND REQUIRED RANGES

<b>Dry Panels</b> (After Prelamination Cleaning)	15-20 mins @ 110 ±5°C (230 ±10°F)	
<b>Vacuum Lamination</b> Cycle Time Board Exit Temperature	<u>TYPICAL RANGE</u> 50-70 seconds 60-77°C (140-170°F)	<u>TYPICAL</u> 60 sec. 68°C (155°F)
<b>Post Lamination Hold Time</b>	1 Hr., but < 3 days	Recommended < 4hrs
<b>Exposure</b> (with DuPont PC-130) Stouffer Step (last step with >50% coverage) Energy* Time	<u>RANGE</u> 10-12 150-300 mJ/cm <sup>2</sup> 18-40 secs.	<u>OPTIMUM</u> 11 Equipment Dependent
<b>Post-Exposure Hold Time</b>	=10 min., but < 3 days	Recommended < 8hrs.**
<b>Development</b> Breakpoint Temperature and Pressure Chemistry	40-60% of Developing Chamber 40 ±2°C (105 ±5°F) & > 1.4 Bar (20psi) 0.85% Anhydrous Sodium Carbonate (Soda Ash) or 1% Sodium Carbonate Monohydrate	
<b>Cure</b> (Sequence can be either Bake followed by UV, or UV first) 1. Bake 2. UV	140 -150°C (285-300°F) for 1 hour <b>at temperature</b> 4 ±1 Joules/cm <sup>2</sup>	

\*The mJ/cm<sup>2</sup> is measured under the phototool, with an International Light type radiometer.

\*\* The **TOTAL** time between lamination and development is recommended to be less than 8 hours



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