

S-500 LEW 77 (TR50612)

THERMAL CURE SOLDER MASK

- ④ **Bright White for LED Applications**
- ④ **Superior Color Retention through Assembly**
- ④ **Excellent Light Reflectance for LED Back Panels**
- ④ **Screen Print Application**
- ④ **Excellent Screening Properties**
- ④ **RoHS Compliant**
- ④ **Halogen-Free**
- ④ **Compatible with Lead-Free Processing**
- ④ **Wide Processing Window**
- ④ **Withstands ENIG & Immersion Tin**

PROCESSING PARAMETERS FOR S-500 LEW77 (TR50612)

S-500 LEW77 (TR50612) COMPONENTS:

	<u>S-500 LEW77</u>	/	<u>HD-50 LEW51</u>
Mixing Ratio	87 parts		13 parts
Color	White		Clear
Mixed Properties			
	Solids		74 %
	Viscosity		300 – 360 ps
	Specific Gravity		1.7

MIXING

S-500 LEW77 (TR50612) is supplied in pre-measured containers with a mix ratio by weight of 87 parts, 0.87 kgs **S-500 LEW77 (TR50612)** and 13 parts, 0.13 kgs, **HD-50 LEW51**. **S-500 LEW77 (TR50612)** can be mixed by a mechanical mixer at low speeds to minimize shear thinning for 10 – 15 minutes.

The mixed pot life is 24 hours at room temperature.

PRE-CLEANING

Prior to solder mask application, the printed circuit board surface needs to be cleaned. Various cleaning methods include Pumice, Aluminum Oxide, Mechanical Brush, and Chemical Clean. For full body gold an alkaline cleaner is recommended. All of these methods will provide a clean surface for the application of **S-500 LEW77 (TR50612)**. Hold time after cleaning the printed circuit board should be held to a minimum to reduce the oxidation of the copper surfaces.

SCREEN PRINTING

Method: Single Sided

- Screen Mesh: 35 – 59 threads/cm (90 – 150 tpi)
 - Screen Mesh Angle: 22.5° Bias
 - Screen Tension: 20 - 28 Newtons
 - Squeegee: 60 – 80 durometer
 - Squeegee Angle: 27 – 35°
 - Printing Mode: Flood / Print / Print
 - Flood Pressure: 20 – 30 psi
 - Printing Speed: 2.0 – 9.9 inches/sec
 - Printing Pressure: 70 – 100 psi
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PROCESSING PARAMETERS FOR S-500 LEW77 (TR50612)

THERMAL CURE **S-500 LEW77 (TR50612)** requires a thermal cure to insure optimal final property performance. Thermal curing can be done in a batch oven or conveyORIZED oven.

- Temperature: 275 – 300°F (135 – 149°C)
 - Time at Temperature: 20 – 40 minutes
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For Process Optimization please contact your local Taiyo America Representative

Taiyo America, Inc. (TAIYO) warrants its products to be free from defects in materials and workmanship for the specified warranty period **S-500 LEW77 (TR50612) / HD-51 LEW51 Warranty period is 6 Months** provided the customer has, at all times, stored the ink at a temperature of 68°F or less. TAIYO accepts no responsibility or liability for damages, whether direct, indirect, or consequential, resulting from failure in the performance of its products. If a TAIYO product is found to be defective in material or workmanship, its liability is limited to the purchase price of the product found to be defective. TAIYO MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE. TAIYO'S obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay. If requested by TAIYO, products for which a warranty claim is made are to be returned transportation prepaid to TAIYO'S factory. Any improper use or any alteration of TAIYO'S product by the customer, as in TAIYO'S judgment affects the product materially and adversely, shall void this limited warranty.

FINAL PROPERTIES FOR S-500 LEW77 (TR50612)

Item	Test Method	Result
Adhesion	Taiyo internal method: Cross hatch peeling	100 / 100
Pencil hardness	Taiyo internal method: No scratch on copper	6H
Solder heat resistance	Rosin flux 260°C / 10 sec, 2 cycles	Pass
Acid resistance	10vol% HCl 20°C / 30min. (Dip) Tape peeling test	Pass
Alkaline resistance	10wt% NaOH 20°C / 30min. (Dip) Tape peeling test	Pass
Solvent resistance	PGM-Ac 20°C / 30min. (Dip) Tape peeling test	Pass
Electro less gold plate	Taiyo Internal Test Method Ni: 3 μ, Au: 0.03 μ	Pass
Insulation resistance	IPC comb type B pattern Humidify: 25-65°C, 90% RH, DC100V for 7 days Measurement: DC500V / 1 min value at room temperature	Initial: 1.0×10^{13} Ohm Conditioned: 1.0×10^{12} Ohm
Reflectance ratio (Reference value)	Taiyo Internal Test Method color system, XYZ color spaces 455 nm Dry thickness : 22 μ (on Cu)	96