THE MARKET LEADER – PROVEN RELIABILITY

Over 90% of the World’s HOS™ (Heaters on Steel) have been made using ESL materials. Millions are being used successfully worldwide.

CERMET SILVER/PLATINUM CONDUCTOR

for HOS™ (Heaters on Steel)

The 9501-CH is a low cost, high speed printing silver/platinum conductor material, which exhibits high conductivity and excellent adhesion and solderability. ESL 9501-CH may be used as contact pads for 29XXX Series resistors in HOS™ (Heaters on Steel) applications.

PASTE DATA

RHEOLOGY: Thixotropic, screen printable paste

VISCOSITY: (Brookfield RVT, 10 rpm, ABZ spindle, 25.5°C±0.5°C) 150±20 Pa·s

BONDING MECHANISM: Mixed bonded

SHELF LIFE: (20°C) 6 months

PROCESSING

SCREEN MESH/EMULSION: 325/20 µm

LEVELING TIME: (20°C) 10-15 minutes

DRYING AT 125°C: 15 minutes

FIRING TEMPERATURE RANGE: (in air) 850°C-930°C

OPTIMUM: 850°C

TIME AT PEAK TEMPERATURE: 10 minutes
**CAUTION:** Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapors emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

**DISCLAIMER:** The product information and recommendations contained herein are based on data obtained by tests we believe to be accurate, but the accuracy and completeness thereof is not guaranteed. No warranty is expressed or implied regarding the accuracy of these data, the results obtained from the use hereof, or that any such use will not infringe any patent. Electro-Science assumes no liability for any injury, loss, or damage, direct or consequential arising out of its use by others. This information is furnished upon the condition that the person receiving it shall make their own tests to determine the suitability thereof for their particular use, before using it. User assumes all risk and liability whatsoever in connection with their intended use. Electro-Science’s only obligation shall be to replace such quantity of the product proved defective.

**RATE OF ASCENT/DESCENT:** 50°C-60°C/minute

**SUBSTRATE FOR CALIBRATION:** 96% alumina

**THINNER:** ESL 401

**TYPICAL PROPERTIES**

**FIRED THICKNESS:**
(measured on a 2.0 mm x 2.0 mm pad on 96% alumina) 10.5±2.5 µm

**APPROXIMATE COVERAGE:** 60-70 cm²/g

**RESISTIVITY:** 2-4 mΩ/sq.

**PRINTING RESOLUTION:**
(Line/Space) 250 µm/250 µm

**SOLDER WETTABILITY:**
(RMA flux, 5 sec. dip, 62 Sn/36 Pb/2 Ag, 220°C±5°C) 95%-100%

**SOLDER LEACH:**
(No. of 10 sec. dips to double resistance of 0.25 mm wide x 100 mm long conductor) 5-10 dips

**ADHESION:**
(90° pull, 2.0 mm x 2.0 mm pads, 62 Sn/36 Pb/2 Ag, 220°C±5°C)

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Aged 48 hours at 150°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68-88 N</td>
<td>58-88 N</td>
</tr>
</tbody>
</table>

---

9501-CH  9901-New