



ESL EUROPE

SOLDER PASTES &
THICK-FILM MATERIALS

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NO CLEAN SOLDER PASTE

H-SERIES

A paste family suitable for high performance fine pitch applications, developed by ESL Europe to give the widest possible process window for general-purpose surface mount applications. OptiFlo™ H series solder pastes are available in several alloys with a range of flux chemistries, rheology and solids options allowing ESL to engineer the OptiFlo™ H series solder pastes to meet your specific needs.

Features	Benefits
Fine pitch printing at 0.4mm or less	- suitable for all SMT designs
Long screen and tack life	- improved process window
No slump at ambient (15-25°C)	- improved process window
No hot slump at 150°C	- improved process window
Reduction in mid chip beading	- less rework/wider process window
Low volume residues	- optimised inspection
Clear residues	- excellent cosmetics
Reduced viscosity/temp change	- improved process window
Low VOC content: (less than 1%)	- minimal environmental impact
Refrigeration possible	- extended shelf life.

The OptiFlo™ Series options:

H-2 Outstandingly long stencil and screen life, developed to minimise the tendency to "dry out" on the stencil, plus a very long wet tack life. Added benefits include a wide application process window and good hot slump resistance. Suitable as a no-clean or cleanable solder paste and available in a range of viscosities, High (HV), Medium (MV) and Low (LV), so ESL can meet your optimum processing requirements.

H-5 LS Low solids residue, no clean flux residue with superb cosmetics that are clear and non-sticky. Yet can be penetrated by test probes for ATE. Good stencil life, withstanding high temps up to 32°C. Outstanding tack life for delayed printing. Excellent delayed reflow performance 48 hrs after printing.

H-K Lower viscosity, typically 700 – 750 kcPs, excellent rheology. Suitable for conventional and high speed printing including closed head pressure printing systems coupled with a wide application process window for conventional printing.

Further developments are continually evolving. Contact ESL Europe for latest news and improvements

ESL Europe OptiFlo Series 0507-G

ESL Worldwide

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See Caution and Disclaimer on other side.

PASTE DATA

Solder Alloy: (Meets national & international specifications)	62% Sn / 36% Pb / 2% Ag 63% Sn / 37% Pb Others available on request
Particle Size:	-325 / +500 mesh (45 - 20 microns) Others available on request
Viscosity: (Brookfield TF Spindle, 5 rpm, 25.5°C ± 0.5 °C)	Can be engineered to suit most applications Typically in the range 600 – 1000 Pa.s
Solids:	Typically in range 88 - 90.5 %
Slump: (ambient 10 - 25 °C)	No loss of definition at 0.4 mm pitch
Hot Slump: (at 150 °C)	No loss of definition at 0.4 mm pitch
Shelf Life: (15 °C - 25 °C) (Refrigerated)	Ambient, typically 3 months Refrigerated up to 6 months

TYPICAL PROPERTIES

(175 ± 25 µm wet print thickness)

Approximate Coverage:	12.5 cm ² / g
Printing Resolution: (line / space)	Better than 0.400 mm / 0.400 mm
Screen time:	Up to 10 hours
Tack Time:	Up to 72 hours
Packaging:	250 - 1000 grams in jars 500 - 1000 grams in cartridges

PROCESSING

Screen Mesh, Emulsion:	80 S/S, 150 - 200 µm
Stencil Material, Thickness:	laser cut, nickel formed, etched S/S, 150 - 200 µm
Reflow Temperature:	Standard reflow profiles used for RMA pastes are appropriate. Although this paste is designed to be reflowed in air, it may also be reflowed in N ₂ .
Flux Removal:	Not required. Note: If cleaning is desired; residue can be removed using standard flux solvent or saponifier cleaning methods.
Thinner:	Not recommended

RESIDUE PERFORMANCE DATA:

Test	Specification	Result
Silver Chromate Paper Test: (Test for Halides)	J-STD-004 / IPC-TM-650	Pass
Copper mirror Test:	J-STD-004 / IPC-TM-650	Pass
Surface Insulation Resistance:	J-STD-004 / IPC-TM-650	Pass
Electro-migration:	J-STD-004 / IPC-TM-650	Pass

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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 vapours 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.

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