ESL EUROPE
SOLDER PASTES & THICK-FILM MATERIALS
8 COMMERCIAL ROAD READING, BERKSHIRE, RG2 0QZ, UK
T: +44 (0) 118 918 2400
F: +44 (0) 118 986 7331
www.solderpaste.co.uk

OPTIFLO ™ Series

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 Worldwide
ESL ElectroScience (USA) • 416 East Church Road • King of Prussia • PA 19406-2625 • U.S.A • Tel: +1 610-272-8000 • Fax: +1 610-272-6759 • Sales@ElectroScience.com
ESL Nippon • Sukegawa Bldg. 6th floor, 3-4 Yanagibashi 1-chome, Taito-ku, Tokyo 111, Japan • Tel: +81-3-3864-8521 • Fax: +81-3-3864-9270 • Sales@ESL-Nippon.co.jp
ESL China • Room #2712, Far East International Plaza, No.317 Xianxia Road, Changning District, Shanghai, China 200051 • Tel: +86-21-6237-0336 • Fax: +86-21-6237-0338 • ESLChina@eslshanghai.net
ESL Taiwan • 14F, No. 168, Tun Hwa N. Road, Sungsan District, Taipei, Taiwan • Tel: +886-975-553-612 • dshih@esl-taipei.com
ESL in Korea • AMT, #109-405, 85(4/2), Bakdal 2-Dong, Manan-Ku, Anyang-Si, KyunggiDo, South Korea • Tel: +82-31-466-0651 • Fax: +82-31-466-0658 • yumikim@esl-amt.co.kr

See Caution and Disclaimer on next page.

PASTE DATA

Solder Alloy:	62% Sn / 36% Pb / 2% Ag
(Meets national & international specifications)	63% Sn / 37% Pb
	Others available on request
Particle Size:	-325 / +500 mesh (45 - 20 microns)
	Others available on request
Viscosity:	Can be engineered to suit most applications
(Brookfield TF Spindle, 5 rpm, 25.5°C ± 0.5 °C)	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)	Ambient, typically 3 months
(Refrigerated)	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