Liquid Flux: Lead Free, Water Soluble
837LFWS Technical Data Sheet

837LFWS-Liquid

Description

The 837LFWS *Liquid Flux: Lead Free, Water Soluble* is a neutral, water-removable soldering flux. The organic activating system in 837LFWS has a neutral pH at room temperature and becomes activated at soldering temperature. The 837LFWS is formulated to be effective over a broad preheat range and may be used for both leaded and lead-free applications. It cleans easily with hot or cold water.

Application & Usages

The 837LFWS is excellent for prototyping and rework/repair of printed circuit boards. It works well on chip carriers, heat sinks, surface mounted device pads, switches, and sockets.

Features and Benefits

- **Excellent wettability**
- **Neutral pH**
- **Cleans with water**
- **Yields bright, shiny joints**
- **Good soldering properties**
- **RoHS compliant**

Flux Paste Properties

Flux Properties	***Method***	***Value***
Flux Classification	J-STD-004	ORH1
Flux type		Organic
Flux Activity		High
Halides %(wt)		2.2% ±0.3%
Copper Mirror	IPC-TM-650 2.3.32	Complete removal of copper film
Corrosion Test	IPC-TM-650 2.6.15	Pass (Cleaned)
Surface insulation resistance (SIR)	IPC-TM-650 2.6.3.3	1.8×10^{10} Ω
Physical Properties	***Method***	***Value***
Color		Colorless
pH		7.3 ±0.5
Solids%	IPC-TM-650 2.3.34	17.5% ±1%
Density	ASTM D 4212	0.85
Flash Point	Closed cup	12 °C [54 °F]

Storage and Shelf Life

Store at around room temperature and protect from direct heat or sunlight.

Properties	*Value*
Shelf Life after DOM Storage Temperature	2 y 18 to 27 °C [65 to 80 °F]

DOM = date of manufacture

Health and Safety

Please see the 837LFWS **Safety Data Sheet** (SDS) for more details on transportation, storage, handling and other security guidelines.

Application Instructions

Apply flux directly on the intended surface via spraying or wave fluxing. Ensure that the compressed air supply is free of oil and water to avoid contamination and density changes. Change in flux density result in non-uniform deposition.

For wave fluxing, keep take full at all time. Keep flux surface 1.5 in above the stone. Adjust pressure to form optimum foam height. Use an air knife to remove excessive foam from the assembly.

Recommended Operating Parameters

Parameter	*Foam Wave*	*Spray*
Amount of Foam Solids	1000–2000 µg/in^2	750–1500 µg/in^2
Foam Stope Pore Size	20–50 µm	—
Foam Level Above Stone	25–40 mm [1.0–1.5 in]	—
Chimney Opening	10–13 mm [0.38–0.5 in]	—
Top Preheat Temperature	85–110 °C [190–230 °F]	85–110 °C [190–230 °F]
Bottom Preheat Temperature	35 °C [65 °F]	35 °C [65 °F]
Conveyor Speed	1.2–1.8 m/min [4–6 ft/min]	1.2–1.8 m/min [4–6 ft/min]
Contact Time in the Solder	2.5–4.5 s	2.5–4.5 s
Solder Pot Temperature		
Sn96.5/Ag3.5	260–276 °C [500–530 °F]	260–276 °C [500–530 °F]
Sn95/Ag5	260–276 °C [500–530 °F]	260–276 °C [500–530 °F]
Sn99.3/Cu0.7	265–276 °C [510–530 °F]	265–276 °C [510–530 °F]
Sn/Ag/Cu	271–276 °C [520–530 °F]	271–276 °C [520–530 °F]
Sn95/Ag5	280–296 °C [536–565 °F]	280–296 °C [536–565 °F]

Flux Cleaning

After soldering, use hot or cold water to clean flux residue. No neutralizers are need. Spray pressure of water of 20—30 lb/in^2 is recommended for con conveyor speed of 0.9–1.8 m/min [3–6 ft/min]. After cleaning, rinse with de-ionized water to achieve better than MIL-28809A levels of cleanliness.

Packaging and Supporting Products

Cat. No.	*Form*	*Net Volume*		*Net Weight*	
837-P	Pen	10 mL	0.338 fl oz	8.4 g	0.27 oz
837LFWS-1L	Liquid	1 L	33 fl oz	846 g	1.87 lb

Suitable Flux Cleaners

- *Heavy Duty Flux Remover*: Cat. No. 413B-1L, 413B-4L, 413B-20L, 413B-425G
- *Flux Remover for PC Boards*: Cat. No. 4140-P, 4140-400G, 4140-1L, 4140-4L, 4140-20L

Technical Support

Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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