HMT Solder™ HMT4-LF

Datasheet revision 1.1 www.HMTsolder.com

Low Residue Soldering Flux

Product Applications

HMT4-LF Lead-Free, VOC-Free, No-Clean flux is a halide-free, rosin-free, no-residue flux specifically developed wave soldering applications for surface mount, mixed technology, and through-hole electronics assembly. HMT4-LF is a water-based, non-flammable formulation that eliminates the need for special storage requirements, while dramatically reducing VOC emissions from plants engaged in wave soldering.

Product Benefits

A liquid flux that is non-flammable
No-Clean ORL0
Water-Based, leaves no residues
VOC Free, Halide Free, Rosin Free
Ideal for all rework, solder, and de-solder applications
Excellent wetting
Easily cleaned with isopropyl alcohol (IPA)
Can be used with Leaded and Lead-Free applications
RoHS 3 and REACH compliant

Specifications and Test Results

Test J-STD-004 or other requirement (as stated)	Test Requirement	Result
Copper Mirror	IPC-TM-650: 2.3.32	L: No Breakthrough
Corrosion	IPC-TM-650: 2.6.15	L: No Corrosion
Quantitative Halides	IPC-TM-650: 2.3.28.1	L: <0.05%
Electrochemical Migration	IPC-TM-650: 2.6.3.7	L: <1 decade drop (not cleaned)
Surface Insulation Resistance 40°C, 90% RH @ 168 Hours	IPC-TM-650: 2.6.3.7	L: ≥ 100 MΩ (No Clean)
Free/Thaw Test		Pass
Visual	IPC-TM-650: 3.4.2.5	Clear and Free from precipitation
Conflict Minerals Compliance	Electronic Industry Citizenship Coalition (EICC)	Compliant
REACH Compliance	Articles 33 and 67 of Regulation (EC) No 1907/2006	Contains no substance >0.1% w/w that is listed as SVHC or restricted for use in solder materials.
Specific Gravity	N/A	1.015 ± 0.01
Density	N/A	6.88 lb/gal
Acid Value	N/A	38.0 ± 4.0
Solids Content	N/A	4.0% ± 0.1
Flash Point TCC	N/A	None

Product Use Guidelines

Wave Soldering

HMT4-LF The following items are critical when setting the conveyor speeds for VOC-Free fluxes:

- Conveyor speed and preheat settings should be adjusted to ensure complete water removal from the PCBs before contact is made with the solder wave.
- In most machines, a conveyor speed of 4-6 ft/minute is acceptable, where the preheat section is a 4 ft. minimum. However, conveyor settings must be established by operators to meet the process needs of PCBs requiring special attention. The following procedures are recommended for optimum performance.
- Make certain that the PCB surfaces are free of any oil, grease, or other impurities.
- Maintain a consistent foam head by narrowing the flux chimney, or using dual flux stones.
- Add fresh flux to maintain proper flux level in flux tank.
- Replace the flux daily unless a sealed, self-contained system is used.
- Regularly clean the fluxing equipment. Never leave foaming stone in flux when pressure is not applied.
- Clean fluxing stone in Superior No. 95T flux thinner.
- When foam fluxing, flux properties can be maintained by monitoring the specific gravity. However, control by checking the acid value is recommended as the most accurate measure. Titration kits are available from Superior Flux.
- Add De-Ionized or Distilled water as a flux thinner when needed. For foam fluxing, flux properties can be maintained by monitoring the specific gravity. Controlling the acid value is the most accurate measure and recommended by using a titration kit.

Storage and Shelf Life

Product should be stored in original sealed containers below 50°C. Shelf life under stated conditions is (2) years.

Packaging

Container Sizes	1-gallon container, 5-gallon pail, 55-gallon drum, Flux Pens

Health and Safety

HMT7-LF is a flammable product and should be handled with care and the normal precautions taken when working with chemical products. Recommended handling procedures are provided in the SDS.

Please refer to the Safety Data Sheet (SDS) before use. Safety data sheets can be found at www.hmtsolder.com

This data is based on information that the manufacturer believes to be reliable and offered in good faith. In no event will HMT be responsible for special, incidental and consequential damages. The user is responsible to the Administrative Authorities (regulations for the protection of the Environment) for the conformity of his installation.