TSF-ULR18

Ultra Low Residue Tacky Soldering Flux

Product Description

Kester TSF-ULR18 is a no-clean ultra low residue tacky flux. The product was developed to support the increasing trend in high density, miniaturization, ultra-fine copper pillar and micro-ball bump flip chip IC package where the flux cleaning effectiveness to remove the residue becomes more challenging. Another segment where TSF-ULR18 is highly recommended is in the Flip Chip on Lead frame (FCOL, FCQFN, etc) package, the kind of device where flux cleaning is not required. The flux residue that may remain after reflow can interfere with subsequent underfilling or over-molding encapsulation which can possibly affect the reliability of the package. In response to this market need, Kester has developed an ultra low residue tacky flux with post reflow residue below 10% wt, incredibly 3x reduction versus traditional rosin based tacky flux. The trace amount of residue left is highly reliable and is compatible with post process materials.

Recommended Package Type

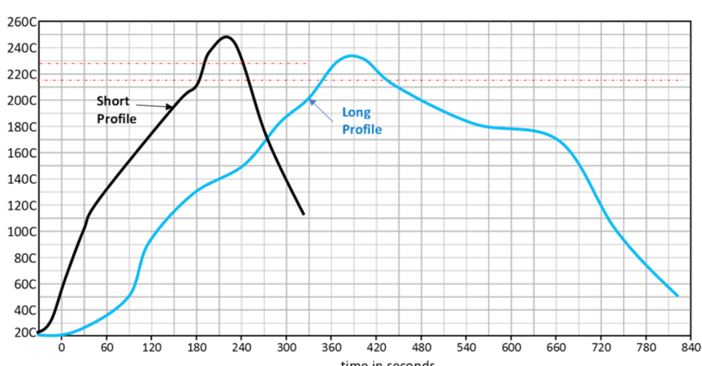
Flip Chip on Lead Frame, Ultra Fine Pitch Cu Pillar Bump and Micro-Solder Bump, 2.5D, 3D Packaging, Flip Chip MEMs, and others Flip Chip Packaging that do not require flux cleaning.

RoHS Compliance

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive. Additional RoHS information is located at https://www.kester.com/downloads/environmental.

Recommended Reflow Profile

The typical convection reflow profile for TSF-ULR18 use for various lead-free alloys such as Sn96.5Ag3.5, Sn99.3Cu0.7, SnAg1.8, Sn100 and other various SnAgCu alloys is shown here. This profile is simply a guideline. TSF-ULR18 was engineered to be versatile and robust for customer reflow process. The optimal profile varies depending on device, component design, fixture, package design and device defect challenges. Please contact Kester Technical Support if you need additional profiling advice.



Global Headquarters: 800 West Thorndale Avenue, Itasca, IL USA 60143 ▪ Phone: +1 800.2.KESTER ▪ Fax: +1 630.616.4044
Asia-Pacific Headquarters: 61 Ubi Avenue 1 #06-01 UB Point, Singapore 408941 ▪ Phone: +65 6.449.1133 ▪ Fax: +65 6.242.9036
European Headquarters: Ganghofer Strasse 45, 82216 Gernlinden, Germany ▪ Phone: +49 (0) 8142 4785 0 ▪ Fax: +49 (0) 8142 4785 61
Asia Manufacturing: Hengqiao Road, Wujiang Economic Development Zone ▪ Suzhou, Jiangsu Province, China 215200 ▪ Phone: +86 512.82060807 ▪ Fax: +86 512.8206 0808
▪ Website: www.kester.com ▪

Product Technical Summary

Attributes	Description & Typical Values	Unit
Product Name	TSF-ULR18	
Product Classification	No-Clean Tacky Flux	
Halogen Classification	Halogen-Free	
Halide Content	None	
Application	Dipping / Printing	
Viscosity (typical)	350-500	Poise
Tackiness (typical)	140-160	gram
ACID # (typical)	20-50	mg KOH/gram
Residue post Reflow	Below 10%	Wt %
Alloy Compatibility	Lead-free alloys such as SnAg, SnCu, Sn, SnAgCu, SnAgBi, others	
Surface Metallization Compatibility	Cu, Cu-OSP, Immersion finishes and ENIG, PPF/Au, SAC305	
Reflow Environment	Convection and nitrogen	
Cleaning	Flux cleaning not required	
Shelf Life	6 months at 0-25°C 12 months at 0-5°C	Months
Pot Life @ 25°C	24	Hours
Storage Condition	0-25	°C
Thaw Conditions	1 (for 30cc syringe) (minimum)	Hours

Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet and warning label before using this product. Safety Data Sheets are available at https://www.kester.com/downloads/sds.