



No-clean, halide free, lead-free dip solder paste

Description

μ-dlFe 7 is a halide free, no-clean and lead-free dip solder paste.

This solder paste has been designed for processes where the paste is applied by dipping, which is most suitable for components with ball grid arrays, gull wing and J-leads.

In rework, as with the ERSA Dip&Print Station, applying a solder paste by dipping, will give a repeatable and selective paste volume. This can result in a serious reduction of residues after soldering as well as of process time.

The amount of paste that sticks to the component when dipping, in general, is less than when stencil printing. This can avoid typical failures like bridging between the balls of (μ-)BGAs and CSPs.

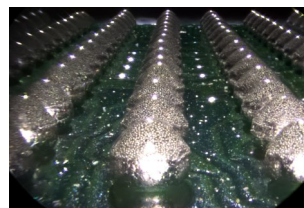
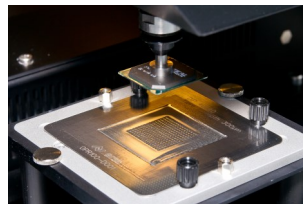
The maximum immersion depth in the dip paste is determined by the height of the component. The body of the component cannot make contact with the dip paste.

μ-dlFe 7 is absolutely halide free, providing optimal reliability after soldering.

The paste is classified as RO/L0 according to IPC and EN standards.



Products pictured may differ from the product delivered



Key properties

- Selective application
- Low residue
- Reduced process times in rework
- Reduced bridging when assembling (μ-)BGAs and CSPs.
- Absolutely halogen free

Availability

alloy	melting point	metal content	powder size	packaging
Sn96,5Ag3Cu0,5	~217°C	70%	type 5	Syringes with plunger: 5CC/10CC/30CC





Profile recommendations for μ-dlFe 7

Rework units usually have the capability to generate a heating profile that quite closely resembles the desired profile.

In general a profile with limited soak is advised. Also ramp profiles and soak profiles are possible. Soak profiles may be used when temperature differences across a board, due to a high mix of components or large board sizes, need to be levelled out or when voids, if present, need to be decreased.

When soldering an assembly in a lead-free reflow soldering process, care must be taken not to overheat components especially when using air convection or IR ovens. It is very important to know the temperature limitations of the components used on the board. To get a good thermal mapping of the board it is advised to use thermocouples and a thermal measuring tool. Measure on small outline, big outline and temperature sensitive components. Measure on the board side near the conveyor chain, in the middle of the board and close to, or on heat sinks.

Preheat

To allow absorbed moisture in the components to evaporate slowly and avoid component cracking, keep a steady heating rate between 1-3°C/s until about 200°C. For that purpose try to avoid a hot air temperature setting in the first heating zone above 150°C.

Soak

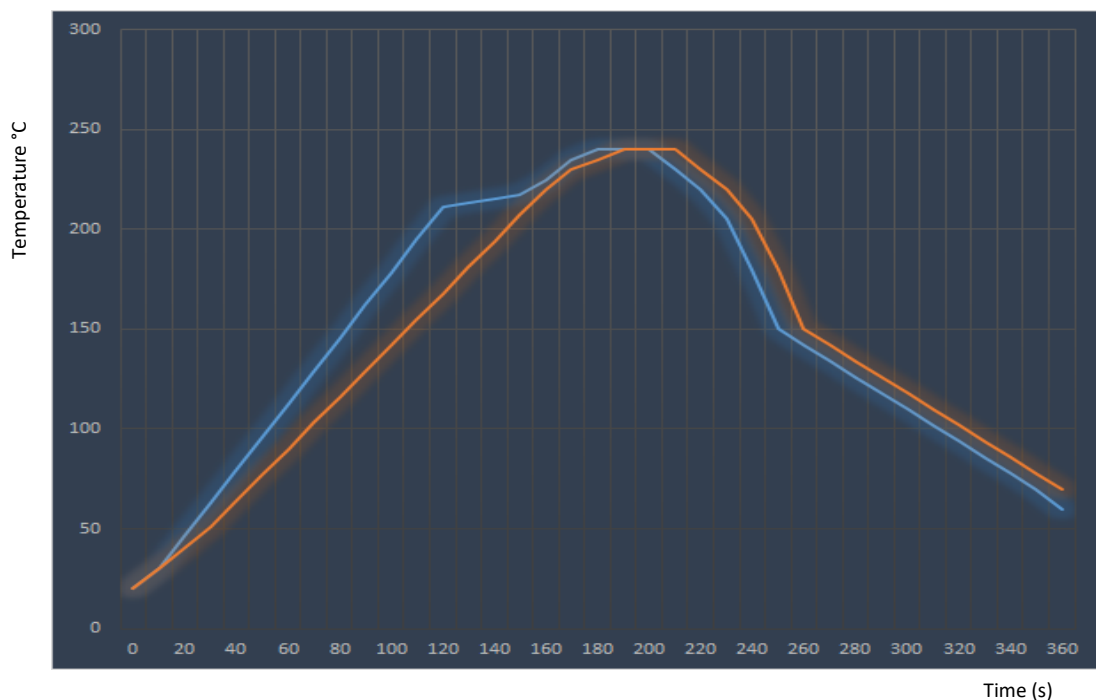
A soak zone between 200°C and 215°C for 0-90s at 0-1°C/s can be used to level out temperature differences and/or reduce voiding.

Reflow

Peak temperature used is related to component specifications. In general between 235°C and 250°C. The time in liquidus (over melting point of the alloy used) could be between 30s and 90s.

Cooling

It is advisable to cool not faster than -4°C/s because of differences in thermal expansion of different materials (component and boards). Faster cooling in general gives stronger solder joints.





Handling

Storage

Store the solder paste in the original packaging, tightly sealed at a preferred temperature of 3° to 7°C. Shelf life is 6 months.

Handling

Allow the solder paste to reach room temperature in a closed condition.

Dipping

When dipping the component into the dip paste, it is advisable not to allow con-

tact between the body of the component and the paste. The maximum immersion depth depends on the physical dimensions of the component. Once this depth is determined, it can be achieved by e.g. printing a volume of paste with a stencil that has the thickness of the immersion depth, and then dipping the component.

Some Pick and Place machines have dipping units. Also here the right immersion

depth is important. An equalizing of the surface of the paste before dipping is advisable.

Dipping in general applies less paste than stencil printing.

When reworking a component, usually a hollow soldering tip is used to clean the pads, leaving a certain amount of solder on the pads.

Reuse

Open time of the paste is about 4 hours at 20°C and

40-60% R.H.

Do not put used paste back into refrigeration. Test before reuse.

Maintenance

ISC8020 in pre saturated wipes or as a liquid is recommended as cleaning agent for tools, etc.. that have been in contact with the paste .

Test results

Property	Result	Method
Chemical		
qualitative copper mirror	pass	J-STD-004A IPC-TM-650 2.3.32
halide content	0,00%	J-STD-004A IPC-TM-650 2.3.28.1
silver chromate (Cl, Br)	pass	J-STD-004A IPC-TM-650 2.3.33
flux classification	ROLO	J-STD-004A
spread test	82,15 mm²	J-STD-004 IPC-TM-650, 2.4.46
Environmental		
SIR test	pass	J-STD-004A IPC-TM-650 2.6.3.3
Mechanical		
solder ball test after 15min	pass	J-STD-005 IPC-TM-650 2.4.43
slump test after 15min at 25°C	pass	J-STD-005 IPC-TM-650 2.4.35
after 10min at 150°C	pass	J-STD-005 IPC-TM-650 2.4.35





Health and safety

Please always consult the safety datasheet of the product.

Trade name : μ- dlFe 7 No-Clean, Lead Free Ball Dip Paste

Disclaimer

Because Interflux[®] Electronics N.V. cannot anticipate or control the many different conditions under which this information and our products may be used, we do not guarantee the applicability or the accuracy of this information or the suitability of our products in any given situation. Users of our products should make their own test to determine the suitability of each such product for their particular purposes. The product discussed is sold without such warranty, either express or implied.

Copyright:

INTERFLUX[®] ELECTRONICS N.V.

**Latest version of this
document on:**

www.interflux.com

