No-clean, halide free soldering flux

Description:

Interflux® **IF 2005K** is a low solids no-clean flux, especially designed for lead-free wave soldering.

IF 2005K can also be used for SnPb wave soldering or selective soldering, however in these cases, respectively IF 2005M and IF 2005C are the first choices.

The IF 2005K activation system has been designed to give optimal wetting on virtually all lead –free surface finishes ,including OSP.

The flux is absolutely halide free, making it a very safe, reliable flux, extremely suitable for high end electronics, as well as for all other branches of the electronics industry.

All flux components can evaporate during the soldering process.

With no rosin nor resin to create sticky residue, there is nothing left behind after wave soldering to foul test pins or prevent electrical contact. Machine and carrier pollution is very little compared to other fluxes.

The flux is classified as OR/L0 according to EN and IPC standards.

Products pictured may differ from the product delivered

RoHS compliant

Key properties

- Absolutely halide free
- For lead-free and SnPb soldering
- Suitable for spray, foam, drop jet and dip fluxing
- Very high compatibility with conformal coatings

Physical and chemical properties

Appearance	Clear colourless liquid
Solid content	2,5% ± 0,3%
Density at 20°C	0,810—0,812 g/ml
Water content	3-4%
Acid number	18 – 22 mg KOH/g
Flash point T.O.C	15°C (59°F)

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Applying the flux

Foam fluxing: To ensure good foaming, the level of flux needs to be at least 2—3 cm over the porous flux stone. The use of an air knife is imperative.

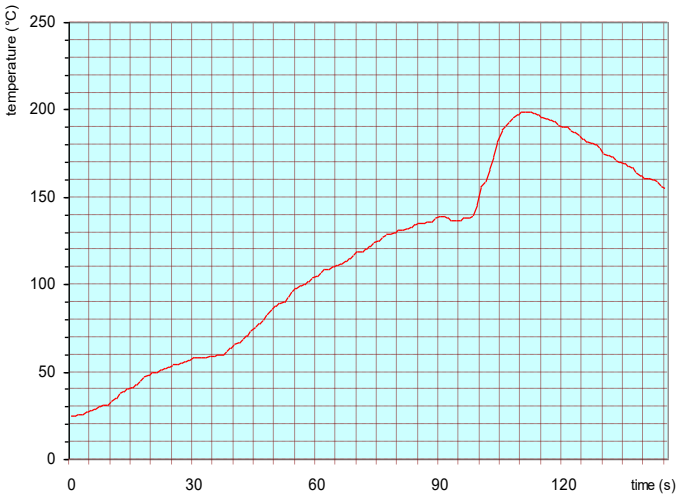
Spray fluxing: It is advised to use a double spray stroke during fluxing, whenever possible and to keep the flux air pressure low. The nozzle traverse speed is set to a value which ensures that every point on the board is sprayed twice, (once from each side). Resulting in a 50% overlap on the spray pattern. This will give the most uniform spray pattern coverage. Spray pattern coverage can be checked by passing a piece of cardboard through the spray fluxer. Remove it before the pre heat unit. Additionally the spray fluxer settings need to be checked by passing a glass plate or empty circuit board through the fluxer. Remove it from the machine before it reaches the pre heater unit and check it on flux quantity. There may be no drops present. Drops are a sign of excessive flux and are difficult to evaporate. Reduce the flux amount until defects typical for a too low flux amount like, webbing, flagging, shorts and icicles are observed. From this point increase the flux level again until defects disappear.

Preheating

The recommended preheat temperature measured on the topside of the boards is 100°C-160°C. This value is retrieved from field experience. The flux can have lower preheating T° as long as the solvent is evaporated before wave contact. Preheating T° above 150°C are to be kept as short as possible in order to prevent flux exhaustion. If possible, avoid hot air convection preheating temperatures above 150°C.

Preheat slope: 1-3°C/s

Always take into account the physical properties of the board, components and soldering application in order to get an optimal final result .



Example of a measured temperature profile

Wave contact

Typical wave contact or dwell time value is 3-4s when using a single solder wave. For double wave soldering systems typical values are 1-2s for the first wave and 2-4s for the second wave. Lower total dwell time limit is 2s. Solder wetting can be optimal at lower contact times however longer contact times facilitate total flux wash off from the boards. The maximum upper limit will be determined by flux exhaustion and physical limitations of the board and components. Indications for flux exhaustion are bridging, icicling, webbing,...

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White residues

There are more causes for white residues than only flux. When caused by IF 2005K, residues can be brushed away or fully evaporated with hot air >160°C. If this is not possible, the cause of the residues is different than only flux. When wave soldering with selective soldering carriers or when selective soldering, the area of flux application is often larger than the area with wave contact. This might result in white residues. Also too much flux application, or condensation of flux vapours might cause white residues. These residues are safe. The residues are not sticky and won't cause contact problems. Less flux application, more heat or more wave contact can reduce these residues. IF 2005M gives less residues but has a smaller process window in activity.

IF 2005K is cleanable with most conventional cleaning agents.

Handling

Storage

Store the flux in the original packaging, tightly sealed at a preferred temperature of +5° to +25°C

Safety

IF 2005K is flammable. Please always consult the safety datasheet of the product.

Density control

For open flux application systems like e.g foam fluxing a flux density control can be useful. The density of the IF 2005K flux shall be checked using a suitable density meter, the value showed by the density meter should be compared, after temperature compensation, with the value in the IF 2005K density table and may only be adjusted with the T 2005M accordingly.

Titration check

For open flux application systems like e.g foam fluxing, a titration check can be useful. The solids content value of the IF 2005K flux can be determined by titration. The liquids for titration are available at Interflux. Adjustments of the solid content may only be done by using T 2005M conditioner.

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Test results

conform EN 61190-1-1(2002) and IPC J-STD-004A/B

Property	Result	Method
Chemical		
Flux designator	**OR L0**	J-STD-004B
Qualitative copper mirror	**pass**	J-STD-004B IPC-TM-650 2.3.32
Qualitative halide		
Silver chromate (Cl, Br)	**pass**	J-STD-004B IPC-TM-650 2.3.33
Quantitative halide	**0,00%**	J-STD-004B IPC-TM-650 2.3.35
Environmental		
SIR test	**pass**	J-STD-004A IPC-TM-650 2.6.3.7
Qualitative corrosion, flux	**pass**	J-STD-004B IPC-TM-650 2.6.15

Packaging

IF 2005K is available in the following packages:

1L HDPE bottle

10L and 25L HDPE drums
200L HDPE barrel

Other packaging available upon request.

Trade name : IF 2005K No-Clean, Halide Free Soldering Flux

Disclaimer

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