

## Application Note

### 120-TEM Tacky flux

#### Description product

**120-TEM** is a low residue, halide free, tacky flux, formulated for the assembly of Direct Attach Components, repair & touch-up, and other **Pb-free applications** in the electronics industry.

The tacky flux is applied by dispensing, dipping or screen printing, and has sufficient tackiness to hold components in place prior to the reflow/soldering operation.

The application of **120-TEM** tacky flux eliminates the need to clean, and provides an aesthetically pleasing appearance. Residues that remain after reflow are minimal. They are noncorrosive, non-conductive and show excellent SIR values. Residues are not adversely affected by temperature and humidity.

**120-TEM** tacky flux is suitable for fine pitch assemblies, as well as standard lead spacing.

It provides 8 hours of screen life and 8 hours of tack time. It exhibits excellent print characteristics and resists moisture absorbance and drying. **120-TEM** tacky flux does not require the use of modified reflow ovens. Inert atmospheres are not required, but can be used if desired.

#### Receiving and storage

Storage of **120-TEM** tacky flux at temperatures between 4 °C and 10 °C is recommended. Under these conditions the product, if kept in hermetically sealed packages, has a shelf life of at least 6 months.

Before the opening of packages, prior to the use of the tacky flux, the package should be brought to ambient temperature during a period of 24 hours.

#### Handling

No more tacky flux should be deposited on the screen as one could use in approx. 4 to 6 hours.

Used tacky flux should preferably not be mixed with unused tacky flux. Open jars should be closed immediately after tacky flux has been taken out.

Should there be no need for the use of more tacky flux within the next few days, the tacky flux preferably should be stored again at temperatures of approx. 4 - 10 °C.

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Avoid prolonged and repeated breathing of the vapors during operation. Avoid contact with skin, eyes or clothing. Wear plastic gloves while handling the product. Wash hands thoroughly with soap and warm water after handling. Additional toxicity and safety data is provided in our material safety data sheet, which automatically is supplied with each delivery.

### Dispensing or Printing applications

**120-TEM** tacky flux has a stable rheology, meeting the specific requirements for dispensing and screen-printing. The rheology properties of tacky fluxes generally are expressed as 'viscosity'. The viscosity of a tacky flux is dependent on several factors, such as solids content, rheology additives, ambient humidity, and temperature as well as on shear-rate. If properly applied, **120-TEM** tacky flux will assure accurate deposits at all times.

### Open times

The "open time", in particular the interval between application of the tacky flux and the placement of the components is dependent on several factors, such as the ambient humidity and temperature, heat from light sources, thinning as well as on the working disciplines with regard to storage and handling. In order to achieve the best results, the following cumulative intervals could be considered as a guideline:

- Tacky flux on screen..... : 4- 6 hours
- After application/before placement : 4- 8 hours
- After placement/before reflow ..... : 8-10 hours

The shorter the intervals, the less tendency for complications. Intervals, generally, can be longer when assemblies are stored in a humidity-free refrigerator, during the intermediate periods.

### Reflow profile

A variety of methods may be used to reflow **120-TEM** tacky flux, such as forced convection, infra-red, vapor phase, soldering iron, contact heating, etc.

Almost all profiles are applicable but peak temperatures for the **120-TEM** are limited to 280 °C

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### Residues/cleaning

The synthetic resin flux used has been developed to be equivalent activity of an RMA flux, and provides excellent solder ability. After soldering/reflow, only trace amounts of a hard, tough, clear colorless, non-corrosive flux residue remains.

**120-TEM** tacky flux features minimal amounts of residues, which are non-corrosive and have excellent dielectric properties. Therefore, they may be left on the assemblies in most of the applications.

The tacky flux, however, will also make a great cleaning performance in most current organic, and semi-aqueous solvent systems.

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