

## Application Notes

### 396-DRX+

**BALVER ZINN<sup>®</sup>**  
**COBAR<sup>®</sup>**

EC Date.....: 20/04/2011  
Release.....: 01.0

### Description product

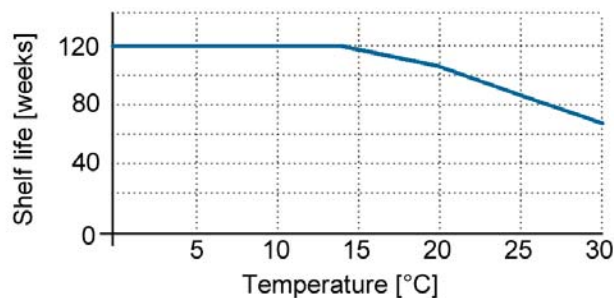
396-DRX+ is a VOC-free flux for wave soldering applications. The flux has very clean residues and good solder properties for use with industrial applications.

See the Product Data Sheet (PDS) for the specification of this product. An up to date version of the PDS for most current products is available through our website at [www.cobar.com](http://www.cobar.com). See the Material Safety Data Sheet (MSDS) before handling and/or using this product.

### Receiving and storage

Exposure to heat, frost or rain should be avoided. Do not leave shipments outside. An air-controlled room usually is adequate for storage. Shelf-life is best guaranteed at temperatures below 20 °C and RH below 70%. Fluxes are shelf-life items and should be managed as a FIFO-supply.

Figure 1: Storage temperature versus shelf-life



Flux that has been exposed to frost should be placed in a room with central heating for at least 4 hours and shackled before use.

### Handling

The recommended ambient conditions for applying the flux are 18-25 °C. Prior to use the flux: tank, spray nozzle, fingers, pallets/carriers and tubes should be cleaned properly. If pneumatic air is used to apply the flux, the air must be dry, free of oil and temperature controlled. A water and oil separator for the supplied air is strictly necessary.

It is important to start with components and board materials that meet requirements for solderability and ionic cleanliness.

### Flux applications

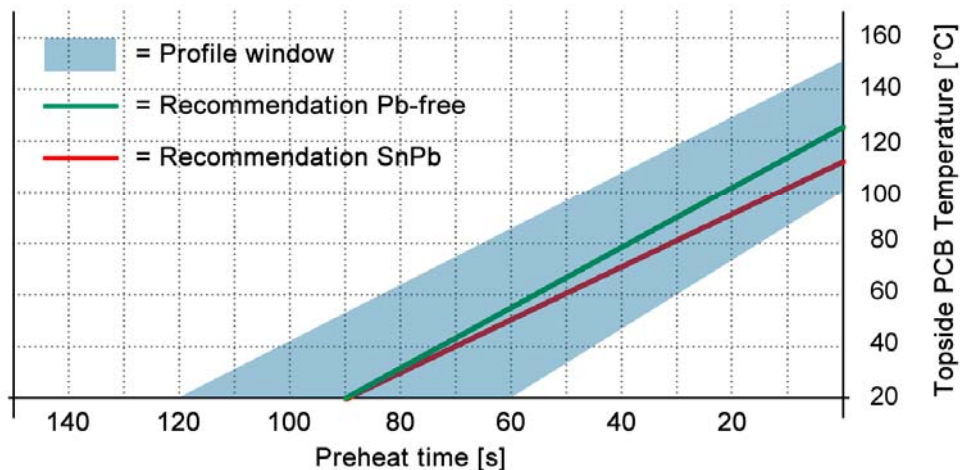
Spray fluxing is the preferred application to apply this flux. Make sure that the unit has a stable and uniform spray-cone. The flux should have the finest droplets at the lowest possible setting for the atomizing air pressure. (Low air pressure gives bigger and unstable droplets; high air pressure cause bouncing effects of the flux against the PCB surface).

Use a scrap/bare board to set-up the spray parameters. Turn the board upside down after spraying for inspection. It is essential that a continuous, uniform spray pattern has been deposited all across the board.

### Preheat profile

The top side (component side) board temperature measured at the end of the preheat zone should be between 100-150°C. To ensure a smooth and complete evaporation of the flux a linear profile with a temperature gradient  $< 2\text{ }^{\circ}\text{C/s}$  is recommended. For optimal activation of the flux the preheating curve should fit in the profile window of the next graph:

Figure 2: Preheat recommendation



### Soldering

In order to obtain clean and well-soldered assemblies, a contact time in the solder wave between 2.5 and 4 seconds is recommended. This time is temperature depended. For a typical SnPb process (solder temperature 250 °C) the initial setting is approximately 2.5 seconds. For lead-free (solder temperature 260 °C) up to 4 seconds depending on the application.

### Residues/cleaning

396-DRX+ is a no-clean flux. When properly applied it has a minimum of residues that are no sticky and do not need to be removed for typical applications.  
For ultrasonic cleaners use: MCI-2330 or ACA-5462.  
For washing machines use: ACA-5462 or MCA-1424

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### Conformal coatings

When properly processed, this flux is compatible with many conformal coatings based on acrylic, polyurethane and silicone resins.

#### **Disclaimer:**

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