

# ECOFREC™ 77



**VOC free, no-clean, low residue flux**  
**Recommended for lead free soldering**

## FEATURES

ECOFREC™ 77 is recommended for lead free soldering with alloys as SnAgCu, SnCu, pure Sn.

- Low residue
- No-clean
- True VOC free flux
- Excellent soldering performances, specially with the dipping process

## SPECIFICATIONS

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Appearance                        | colourless liquid               |
| Density 20°C (g/cm <sup>3</sup> ) | 1.009 – 1.017 g/cm <sup>3</sup> |
| Solid content (%)                 | 5 %                             |
| Acid index (mg KOH/g)             | 43 – 45                         |
| Halogen content                   | no halogen                      |
| Flash point                       | none                            |

## CHARACTERISTICS

The activation system of ECOFREC™ 77 is eliminated during soldering.

- Free of halide (Fluoride, Chloride, Bromide) and amine
- Free of organic solvent
- Formulated to meet the volatile organic compound (VOC) emission regulations

| Standards tests     | Results | Procedures     |
|---------------------|---------|----------------|
| Flux Classification | ORLO    | ANSI/J-STD-004 |
| SIR (IPC)           | pass    | ANSI/J-STD-004 |
| Copper mirror       | pass    | ANSI/J-STD-004 |
| Chromate paper      | pass    | ANSI/J-STD-004 |

## PROCESS PARAMETERS

ECOFREC™ 77 must be applied by dipping or by spray.

Topside preheat temperature of 100 to 130°C is recommended to boil off the water and non-volatile solvents before entering wave soldering.

The temperatures obtained during preheating and solder wave will eliminate the residue to give good cosmetics.

Unlike alcohol-based fluxes, ECOFREC™ 77 is a ready to use flux : it does not require acid index and density control.

### Process Guideline

In case of typical wave soldering process, the recommended values are described above :

| Parameters              | Recommended Values  |
|-------------------------|---------------------|
| Flux amount deposit     | 40-80 g/m2          |
| Preheating PCB Top Side | 120°C maximum       |
| PCB Bottom Side         | 145°C maximum       |
| Conveyor Speed          | 0.8 – 1.8 m/mn      |
| Conveyor angle          | 4 - 7° (7° typical) |
| Chip Wave Contact Time  | 0.5 – 1 sec         |
| Main Wave Contact Time  | 2.5 – 4 sec         |
| Solder bath Temperature |                     |
| - SnAgCu                | 260 – 270°C         |
| - SnPb                  | 245 – 255°C         |

This guideline is the result of laboratory test and process optimisation at production lines. This information's goal is mainly to make the flux implementation easier. The actual settings may vary depending on the actual products being run, the equipments, components and boards being used, etc...  
The optimum parameters may be slightly different from the table above.

## PACKAGING, STORAGE & SHELF LIFE

To ensure the best product performance, the recommended storage temperature range is room temperature. Avoid storage less than 0°C.

|              |     |           |
|--------------|-----|-----------|
| Plastic drum | 20L | 12 months |
|--------------|-----|-----------|

## HSE

Use in well-ventilated areas. Safety glasses and gloves should always be worn when handling the flux. No issues when used as recommended. Please refer to Material Safety Data Sheet before use.

INVENTEC Material Safety Data sheets can be found at [www.quickfds.com](http://www.quickfds.com)

***Although the conformity to ROHS 2011/65UE applies EQUIPMENT put on the market and not a component in particular, we warranty that this product contains less than 0.1% of mercury, lead, chromium VI, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) and less than 0.01% for the cadmium, in accordance with the decision of The European Commission dated 18/08/2005, fixing the maximal concentration values.***

*This data is based on information that the manufacturer believe to be reliable and offered in good faith. In no event will INVENTEC be responsible for special, incidental and consequential damages. The user is responsible to the Administrative Authorities (regulations for the protection of the Environment) for the conformity of his installation.*

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