

ECOFREC™ 303



VOC FREE, NO-CLEAN FLUX HIGH RELIABILITY

FEATURES

ECOFREC™ 303 is a low residue, no-clean, VOC (Volatile Organic Compound) free flux.

- Lead and lead free application
- Good soldering performance on any finish
- High reliability: high SIR values and complies with the BONO corrosion test
- VOC free flux: zero solvent, not flammable as opposed to some other so-called VOC free fluxes on the market

SPECIFICATIONS

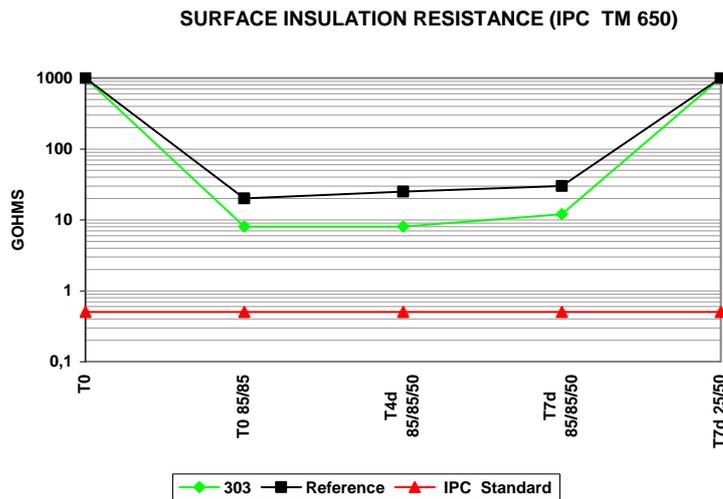
| | |
|--|-------------------|
| Appearance | colourless liquid |
| Specific gravity 20°C (g/cm ³) | 1,005 – 1,013 |
| Solid content (%) | 3.5 |
| Halogen | no halogen |
| Acid index (mg KOH/g) | 32 |
| Flash point | none |

CHARACTERISTICS

ECOFREC™ 303 is a water-based no-clean flux that contains no organic solvents and is formulated to meet all volatile organic compound (VOC) emission regulations. It is a flux developed for wave soldering through hole, mixed technology, and SMT assemblies. PCB cleaning after soldering is not necessary due to its very low solids content.

ECOFREC™ 303 is halogen free and amine free.

| Standards tests | Results | Procedures |
|--|---------------|---------------------|
| Flux Classification | ORL0 | ANSI/J-STD-004 |
| | 2.1.1 | ISO 9454 |
| SIR (IPC) | pass | ANSI/J-STD-004 |
| Copper mirror | pass | ANSI/J-STD-004 |
| Chromate paper | pass | ANSI/J-STD-004 |
| Bono Corrosion test 85°C / 85% HR – 15 days | Pass: FC=1.1% | INVENTEC BRY-MO-058 |



PROCESS PARAMETERS

ECOFREC™ 303 must be applied by spray.

Topside preheat temperature of 110 to 130°C is recommended to boil off the water and non-volatile solvents before entering wave soldering.

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

Unlike alcohol-based fluxes, ECOFREC™ 303 does not require acid index and density control.

Process Guidelines

| | SAC 305/387/405 & SnCu0.7 | SnPb 63/37 |
|-------------------------|--|--|
| Flux Amount Deposit | 20 - 80 g/m ² | 20 - 80 g/m ² |
| Preheating PCB Top Side | 120°C maximum | 120°C maximum |
| PCB Bottom Side | 145°C maximum | 145°C maximum |
| Conveyor Angle | 4 - 7° (7° typique) | 4 - 7° (7° typique) |
| Conveyor Speed | 0.8 - 1.8 m/min (1,1 - 1,4m/min typique) | 0,8 - 2,0 m/min (1,1 - 1,4 m/min typique) |
| Contact time Main Wave | 2.5 - 4 s | 2.5 - 4 s |
| Chip Wave | 0.5 - 1 s | 0.5 - 1 s |
| Solder Bath Temperature | 255 - 270°C (260 - 265°C pour SAC 270°C pour SnCu) | 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.

Monitoring

As the ECOFREC™ 303 can be used only on spray systems, no solvent evaporation should occur. So the ECOFREC™ 303 properties should not change during its use so flux control is usually unnecessary.

Cleaning

After soldering, the flux residue remaining of ECOFREC™ 303 does not have to be removed by a cleaning operation as it is chemically inert. However, if cleaning is required, the residue left after reflow can be easily removed if needed with a large range of cleaning solutions, such as detergents, hydro-carbonated solvents or halogenated solvents, all included in the INVENTEC cleaning range.

| PROCESS Type | INVENTEC Defluxing solutions |
|-------------------------------------|--|
| Manual | Topklean™ EL10F/ Topklean™ EL60/ Quicksolv™ DEF90 EL |
| Aqueous system (Immersion or spray) | Promoclean™ DISPER 605 and DISPER 607 |
| Co-solvent system | Topklean™ EL 20 series |
| Under vacuum system | Topklean™ EL 20D |
| Mono-solvent (Azeotropic) | Promosolv™ 70ES |

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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

Although the conformity to ROHS 2011/65/UE applies to EQUIPMENT put on the market and not to 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.