ECOREL™ EASY 803M 803M T4

INVENTEC PERFORMANCE CHEMICALS

Low residue no-clean solder paste

FEATURES

ECOREL™ EASY 803M range offers a good balance between wettability, printing capability and ability to withstand various thermal profiles.
ECOREL™ EASY 803M range exhibits high printing speed, excellent abandon time and long steady tackiness.

These pastes can withstand high thermal profiles, with and without nitrogen, leading to consistent and shiny solder joints on all standard finishes.

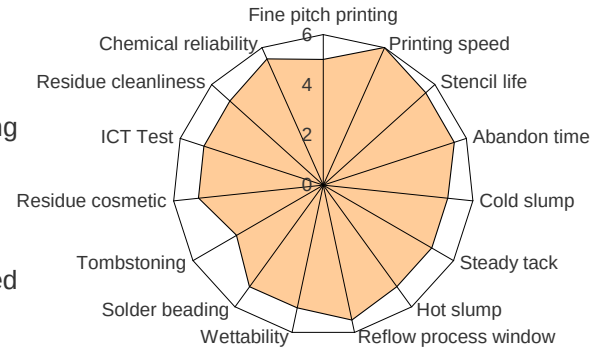
Residues after reflow are non-corrosive and do not need to be removed to ensure the reliability of the PCB's. However, those residues are easily cleanable with a large range of cleaners: hydro-carbonated solvents, halogenated solvents and detergent solutions including the INVENTEC cleaning solutions.

SPECIFICATIONS

ECOREL EASY	Ecorel™ Easy 803M	Ecorel™ Easy 803M T4
Alloy	Sn63Pb37	Sn63Pb37
Powder size distribution (microns)	25-45	20-38
Melting point	183	183
Metal content (%)	89,5 ± 0.5	89,5 ± 0.5
Residue after reflow soldering (%)	47 – 54	47 – 54
Halogen content	no halogen	no halogen
Viscosity* (Pa.s at 20°C) ** Brookfield RVT, TF at 5 RPM*	900 – 1100	900 – 1100

CHARACTERISTICS

Long stencil life: more than 10 hrs
Abandon time on the stencil more than 4 hrs with excellent print restart
Printing speed: 20-150 mm/sec
Solderballing resistance at high % relative humidity
Good wettability on all finishes
Stable tack: more than12 hrs at 22°C between printing and component placement
No slump out by preheat
Slight yellow residue after reflow, ate probe compatible
No halogen
High SIR – No residue deterioration during accelerated ageing
Compatible with major conformal coating of the market including Elantas Bectron PT 4600 (1)
and Elantas Bectron PL 4122 (1)
(1) SIR/EM test at 40°C, 93 % RH, 50 V bias, 500 hours: > 10^8 ohms – no dendrites



FUNCTIONAL TESTS	Results	Procedures
Flux classification	L 0 F-SW 32 113	ANSI/J-STD-004 DIN 8511 ISO 9454
Solderballing test	class 1	ANSI/J-STD-004
Copper mirror	pass	ANSI/J-STD-004
Copper corrosion	pass	ANSI/J-STD-004
S.I.R. Ohms After 21 days 85°C - 85 % RH - 50 Volts End of cycle 20°C – 65°C RH	pass $> 10^9$ $> 10^{10}$	ANSI/J-STD-004

PACKAGING

Jar	250 g or 500 g
Cartridge	700 g or 1400 g
PROFLOW cassette	800 g

STORAGE & SHELF LIFE

To ensure the best product performance, the recommended storage temperature range is 0°C to 10°C. A shelf life of 12 months is achieved under these conditions. For cartridges, shelf life is 9 months.
For an optimal preservation, store cartridges in vertical position, tip downwards.

PROCESS PARAMETERS

Solder paste preparation

Before printing, it is essential to properly mix the solder paste, either manually with a spatula, or by doing several preliminary prints on the stencil.

Printing guideline

Apply on the stencil solder paste to form a roll of 1 to 2 cm of diameter all along the squeegee (about 100g of paste per 10 cm squeegee length). This way, the solder paste will roll easily under the squeegees to offer excellent printing quality.

Printing speed : 20 to 150 mm/sec.
Minimum pitch : 0.3 mm
Pressure : depends on printing speed

Examples of printing speed according to the pressure :

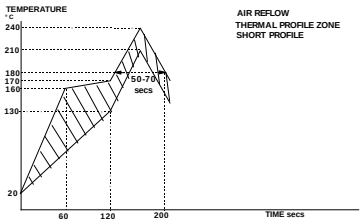
Squeegee length	Printing Speed	Pressure
250	50 mm/sec	4 kg
250	100 mm/sec	9 kg
400	50 mm/sec	6 kg
400	100 mm/sec	11 kg

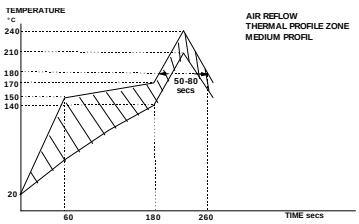
Reflow guideline

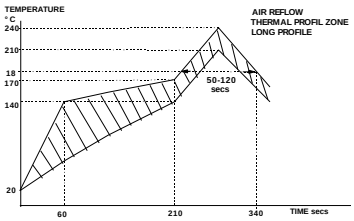
The graph beside indicates, the optimal thermal profile zone according to PCB and component thermal mass.

A linear preheating ramp rate is preferable to a too long soak, in order to avoid solderbeading and to get a shiny joint with a uniform residue distribution.

Nitrogen atmosphere improves wettability inside a larger reflow process window.







Cleaning

After soldering, the remaining flux residue does not have to be removed by a cleaning operation as it is chemically inert.
When cleaning is required (e.g. high reliability assembly, improved conformal coating adhesion), the residue left after reflow can be easily removed with a large range of cleaning solutions, such as detergents, hydro-carbonated solvents or halogenated solvents, including the INVENTEC cleaning range solutions.
In the table below is a quick reference about INVENTEC PCBA defluxing solutions.

PROCESS Type	INVENTEC PCBA 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

HSE

Contains lead. Do not handle without gloves. Read MSDS before use.
No issues when used as recommended.

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