ECOREL™ EASY 802 M T4

INVENTEC PERFORMANCE CHEMICALS

Low residue no-clean solder paste SnPbAg Alloy

BENEFITS

ECOREL™ EASY 802M T4 offers a good balance between wettability, printing capability and ability to withstand various thermal profiles.

- It exhibits high printing speed, excellent abandon time and long steady tackiness.
- The fine particle size distribution of its type 4 powder enhances the printing quality for small apertures.
- 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

Alloy	Sn62Pb36Ag2
Particle size (microns) / Type	20-38 / Type 4
Melting point (°C)	178
Metal content (%)	89.5 ± 0.5
Halogen content	No Halogen
Viscosity* (Pa.s 25°C) ***Spiral pump Malcom - 10 rpm***	160 Typical value
Post reflow residues	approximately 5 % w/w

CHARACTERISTICS

Standards tests	Results	Procedures
Flux Classification	ROL0	ANSI/J-STD-004
	113	ISO 9454
Solder balling test	pass	ANSI/J-STD-005
Copper mirror	pass	ANSI/J-STD-004
Chromate paper	pass	ANSI/J-STD-004
Copper corrosion	pass	ANSI/J-STD-004
SIR (IPC)	pass	ANSI/J-STD-004
SIR (Bellcore)	pass	Bellcore
Electromigration (IPC / Bellcore)	pass	ANSI/J-STD-004 / Bellcore

- No slump out by preheat
- Slight yellow residue after reflow, ate probe compatible

PROCESS PARAMETERS

Store at room temperature at least four hours before use.

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 2cm of diameter all along the squeegee or around 100g per 10cm of squeegee length. This way, the solder paste will roll easily under the squeegees to offer excellent printing quality

Printing speed:	20 to 150mm/s (1 to 12in/s)
Minimum pitch:	0.3mm
Pressure	depends on printing speed and printing equipment

Typical speed / pressure set up:

Squeegee length	Printing Speed	Pressure
250	50 mm/s	4 Kg
	100 mm/s	9 Kg

- Stencil life in continuous printing process: > 10hrs
- Abandon time as time between two prints with good re-start > 4hrs
- Steady tackiness > 12hrs

Reflow guideline

Nitrogen atmosphere improves wettability inside a larger reflow process window.
Linear preheating ramp rate is recommended. But high density board may require soak zone during preheating to homogenize temperature over the circuit board before reflow peak.

Preheating ramp rate with linear preheating	0.8 - 1.2°C/s according the circuit board size and density
Preheating steps in case of preheating soak zone	- From 20 to 150°C: ramp rate 1-2°C/s - soak zone between 140-180°C for 60 to 120s
Peak ramp rate	1.0 - 2.0 °C/s
Peak temperature	210 - 235°C
Time above liquidus	50 - 120s

Cleaning

After soldering, the flux residue remaining of **ECOREL™ EASY 802 M T4** 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. This is also a best practice for a robust adhesion if conformal coating is to be applied on the board. 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
Novec™ HFE + Co-solvent	Topklean™ EL 20A and EL 20R
Under Vacuum System	Topklean™ EL 20D
Azeotropic Solvent	Promosolv™ 70ES

PACKAGING, STORAGE & SHELF LIFE

To ensure the best product performance, the recommended storage temperature range is from 0°C to 10°C. For an optimal preservation, store cartridges in vertical position, tip downwards.

Jars	250g or 500g	12 months
Cartridges	700g or 1400g	9 months
Proflow cassette	800g	9 months

HSE

Contains lead. 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

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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