



SOLDERING

ECOREL™ FREE LT 140-17A

Sn42Bi57.6Ag0.4 SOLDER PASTE
DISPENSING PROCESS
LOW MELTING POINT

BENEFITS

ECOREL FREE LT 140-17A is a no clean dispensing solder paste combining the metallurgical properties and benefits of a low melting point alloy with high performance chemistry of the ECOREL™ flux chemistries, assuring that the assembled electronics can reach their best reliability. Low melting point solder pastes are recommended for thermal sensitive components such as LED's, MEMS, CMOS and flexible circuits.

The paste has easily cleanable flux residue while having a melting point of around 140°C. Compared to state-of-the art low melting point alloy like SnBi, ECOREL FREE LT 140-17A achieves better wetting and solder joint strength due to the presence of silver.

PERFORMANCE	- Excellent solder joint strength - Very good wetting on all surface finishes, including OSP
COST	Reduced energy consumption
HSE	- Lead Free - Free of CMR containing substances

FEATURES

DISPENSING OPTIONS

SPECIFICATIONS	ECOREL FREE LT 140-17A
Alloy	Sn42Bi57,6Ag0,4
Melting point	140°C/284°F
Metal content (%)	87.5 – 88.5
Post reflow residues	Approximately 6-7% by w/w
Halogen content (%)	0.10-0.12
Powder size	25-45 microns / Type 3
Viscosity* (Pa.s 20°C)	400-550*

*The equipment used is * Brookfield RVT, Helipath T Mobile - 5 rpm

CHARACTERISTICS

CHARACTERISTICS	VALUES	METHOD
Flux Classification	ROM1	ANSI/J-STD-004
	112	ISO 9454
Copper mirror	Pass	ANSI/J-STD-004
Copper corrosion	Pass	ANSI/J-STD-004
SIR (IPC) after cleaning After 21 days 85°C - 85 % HR - 50 Volts 20°C - 65 % HR	Pass > 10 ¹⁰ > 10 ¹²	ANSI/J-STD-004

PROCESS RECOMMENDATION

The best process will depend on factors such as operating conditions, equipment, board or component design. Our team is ready to advise you.

SOLDER PASTE PREPARATION

- Put the paste at room temperature for at least 4 hours prior to use.

DISPENSING GUIDELINE

Apply the paste in dots using a micro-dispenser, with needles having an inner diameter greater than 0.5 mm.

REFLOW GUIDELINE

Although this paste performs very well under air, a nitrogen atmosphere will even improve the wettability whereas achieving a larger reflow process window.

Linear preheating ramp rate is recommended; however high-density boards may require a soak zone during preheating to stabilize the temperature over the circuit board before peak reflow.

REFLOW STEPS	REMARKS
Preheating ramp rate with linear preheating	0.7 to 2°C/sec. (according to the circuit board size and density) - From 20 to 90°C: temperature rise rate 1-2°C/s - Plateau between 90-120°C for 30 to 120 s
Peak ramp rate 120°C to liquidus	1,0 to 2°C/s
Peak temperature	170-210°C (338 to 410°F)
Time above liquidus	30 to 60sec.
Cooling ramp rate	1.8 to 7°C/sec.

CLEANING POST SOLDERING

This product is a no-clean solder paste, so cleaning is not required to meet IPC standards. The chemistry is specially designed so that any remaining flux residue is chemically inert and will not impact on your assembled board or packaging under normal conditions. However, when cleaning is desired or required (e.g. high reliability assembly or to improved conformal coating adhesion), the flux residue can be easily removed with INVENTEC's own formulated flux cleaners.

*Inventec has over 60 years' experience in high-tech cleaning for aqueous and solvent based systems.
Our solder materials are aligned with our cleaning solutions, which guarantees excellent cleaning.*

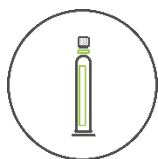
PROCESS TYPE	PCBA DEFLUXING SOLUTIONS
Manual	Quicksolv™ DEF90, Quicksolv™ DEF70, Promoclean™ TP61
Aqueous (Immersion or spray)	Promoclean™ DISPER 607, Promoclean™ DISPER 707, Promoclean™ DISPER 800
Co-solvent	Topklean™ EL 80 + Promosolv™ rinsing solvents
Mono-solvent (vapor phase)	Promosolv™ 70ES, Promosolv™ 70IS

Other products are available, depending on specific customer requirements. Check also our maintenance cleaning solutions.

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 syringes in a vertical position, tip downwards.
- Shelf-life is 6 months for syringes.

AVAILABLE PACKAGING



SYRINGE
120G (30cc)

HEALTH, SAFETY & ENVIRONMENT

No issues when used as recommended.

In accordance with the Annex II of Directive 2011/65/UE (RoHS), including its amendments, we certify that this product does not contains quantities above 0.1% of Hg, Pb, Cr VI, PBB, PBDE, DEHP, BBP, DBP, DIBP and above 0.01% of Cd. INVENTEC PERFORMANCE CHEMICALS also fulfils its direct obligations under the REACH and Conflict Mineral regulations.

Please refer always to the Safety Data Sheet (SDS or MSDS) prior to use. Our SDS can be downloaded at www.quickfds.com. We will request to provide your email address, so we can automatically send you a new version of the SDS when a future update would occur.

TECHNICAL SUPPORT & FREE-OF-CHARGE TESTING

Inventec has a worldwide dedicated Technical Support team to help you along the different stages of our cooperation.

Depending on your request, we provide online or onsite support

- to select the right product based on your specific needs.
- to assist you in your product qualification process.
- to guide you with the initial set up of your process at all your worldwide manufacturing facilities.
- to provide fast response on technical issues which could occur at any time during mass production.

When cleaning is required, customers are also welcome in our CLEANING CENTERS to see the process in action and to get convinced by our solutions. We cover water and solvent based processes.

For the electronics manufacturing industry, Inventec offers a unique advantage by formulating and supplying soldering, cleaning, and coating solutions. These materials are closely interconnected from a process standpoint. Our Technical Team's expertise across all three areas helps you more effectively overcome technical challenges across your entire production process.

Contact our technical support via contact@inventec.dehon.com or your local sales representative.

ABOUT INVENTEC

Inventec Performance Chemicals is a global B2B provider of Electronic Assembly Materials, Precision Cleaning Fluids, Protective Coatings and Thermal Management Fluids for electronic, semiconductor and precision manufacturing applications. For over 60 years we have shown leadership in innovation by putting HEALTH IMPACT, SUSTAINABILITY and RELIABILITY at the core of our product development.

With ISO 9001 & 14001 production sites in France, Switzerland, USA, Mexico, Malaysia and China we can guarantee a smooth and cost-effective supply chain across the globe. We supply to many industries but the excellent performance of our products in applications which demand high reliability, leads us to focus especially on the AUTOMOTIVE, AEROSPACE, SEMICONDUCTOR, ENERGY and MEDICAL industry.

www.inventec.dehon.com



SOLDERING
CLEANING
COATING
COOLING

This data is based on information that the manufacturer believes to be reliable and offered in good faith. In no event will INVENTEC PERFORMANCE CHEMICALS 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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