



SOLDERING

# ECOREL™ SINTEC AP90

AG SINTERING PASTE  
LOW PRESSURE SINTERING PROCESS  
ONE STEP DIE-& SUBSTRATE-ATTACH

## BENEFITS

ECOREL SINTEC AP90 is a low pressure sintering paste, with silver as its main component and dedicated for stencil printing process. It has been developed for die-attach and high power packages and allows only 1 step for complete module assembly. It offers lead free interconnections for large base plate sintering or components with die size up to 400mm<sup>2</sup> onto DCB materials, gold, nickel, copper and silver surfaces.

Compatible with the temperature requirement mission profiles of wide band gap material SiC and GaN.

The sintering paste does not contain halogen nor nano particle and exhibits a very high shear strength. Besides, it can be stored at room temperature without evolution of characteristics.

PERFORMANCE	<ul style="list-style-type: none"> <li>▪ High thermal conductivity to offer great heat dissipation</li> <li>▪ Higher silver content than state-of-the art sinter pastes without agglomeration risk</li> <li>▪ Stable over long print-runs without degradation</li> <li>▪ Very good wetting on all surface finishes</li> <li>▪ High shear strength for improved reliability</li> <li>▪ TCT -55°C-+ 125°C &gt;1000 cycles</li> </ul>
COST	<ul style="list-style-type: none"> <li>▪ All-in-one sintering reduces overall process cost</li> <li>▪ Increase lifetime and reliability of your product, hence reduces risk of premature failures</li> <li>▪ Room temperature storage</li> </ul>
HSE	<ul style="list-style-type: none"> <li>▪ Lead free</li> <li>▪ No CMR containing substances</li> <li>▪ No halogen</li> <li>▪ No nano particles</li> </ul>

## CHARACTERISTICS

CHARACTERISTICS	ECOREL SINTEC AP90
Alloy	Ag + additives
Sintering temperature (°C/°F)	Typically 250°C/482°F

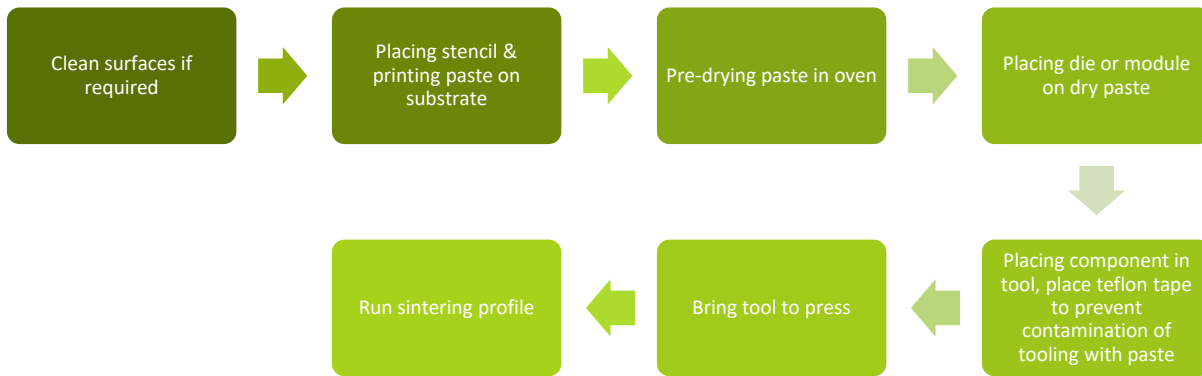
## PERFORMANCE

PERFORMANCE	ECOREL SINTEC AP90
Shear Strength	Up to 95 MPa
Heat Conduction	>300 W/mK
Electric conductivity	40 MS/m

# 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.

## LOW PRESSURE SINTERING PROCESS OUTLINE



## PASTE PREPARATION

- Automatic paste mixing is neither required nor advised.

## PRINTING GUIDELINE

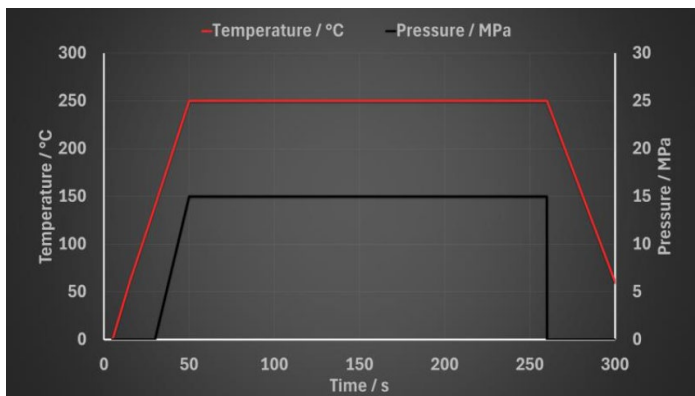
PARAMETER	RECOMMENDED VALUE
Stencil thickness	80 µm
Squeegee pressure	10 N
Printing speed	10 mm/sec
Lift-up	0,8 mm/sec

## PLACEMENT AND DRYING GUIDELINE

- Option A – Dry placement: Pre-drying : 20 min @ 120 °C Dye placement with force 0,5N <1s - Pressure Sintering
- Option B – Wet placement: Dye placement with force 0,1N <1s Pre drying: 25 min @ 120°C – Pressure sintering

## SINTERING GUIDELINE

PARAMETER	REMARKS
Sintering profile with hard tool	<ul style="list-style-type: none"> <li>Vacuum and flushing with nitrogen gas</li> <li>Pre-heating the tool with the components to 200°C</li> <li>Bringing the tool to the pressure stage</li> <li>Apply 5-25 MPa force for 3-4 min (top 250°C; bottom 270°C)</li> <li>Vacuum and flushing with nitrogen gas</li> <li>Cool down to 60°C</li> <li>Fast cool down is not ideal</li> </ul>
Sintering with soft tool	Temperatures might need to be increased by 10°C to compensate for the lower heat conductivity of the soft tool.



## CLEANING

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When cleaning is desired or required before sintering, Inventec has a broad range of own formulated 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.*

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## PACKAGING, STORAGE & SHELF LIFE

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- To ensure the best product performance, the recommended storage is at room temperature (25°C+/77°F) in a dry environment.
- Prevent the paste to be exposed to light when stored.
- Shelf-life is 6 months. When the packaging is opened, there is no effect on shelf-life.

### AVAILABLE PACKAGING



JAR  
250g & 500g

## HEALTH, SAFETY & ENVIRONMENT

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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 contain 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](http://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

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Inventec has a worldwide dedicated Technical Support team to help you along the various 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 prior 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.

Inventec is unique in the world by developing not only soldering materials but also cleaning and coating solutions. These materials are very closely linked with each other from a process point of view. Talking to our Technical Team, who understands very well these 3 different product groups, will help you greatly to overcome technical challenges within your overall process.

Contact our technical support via [contact@inventec.dehon.com](mailto:contact@inventec.dehon.com) or your local sales representative.

## ABOUT INVENTEC

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Inventec is a global provider of SOLDERING, CLEANING, COATING, COOLING materials for Electronic, Semiconductor and Industrial 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.

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](http://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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