

Officially launched in June 2018 by Inventec, the soldering paste expected by the high-tech industry comes to fruition

The Chimie Balard Cirimat Carnot Institute's expertise in the field of materials allows it to fulfil the most stringent requirements for electronic components used in both the aeronautical and space industries.

Supporting Innovation

Inventec has been an established leader in the field of chemical solutions for the high-tech industry for more than 50 years. Its offering as regards electronic assemblies has just grown with the latest introduction of its Ecorel™ Oxal AG product.

While being high-temperature resistant, this silver-oxalate-based soldering paste stands out by its ability to be worked at low temperatures, without emitting any particulate pollutants or nano-scale particles.

It meets the strict requirements of the high-tech electronic industries: miniaturisation, an outstanding electrical and thermal conductivity, mechanical resistance. It is also a lead-free product complying with the highest EU environmental standards (both the Restriction of Hazardous Substances Directive (RoHS) and the Registration, Evaluation, Authorisation and Restriction of Chemicals regulation (REACH)).

It is a key element to ensuring high quality of surface-mount technology (SMT)² solder joints by attributing excellent electrical, mechanical and thermal properties to the soldering.



The client needs

Electronic circuits, in particular aerospace and power electronics, are getting much smaller and are subjected to ever higher temperatures (300° C and above).

In such cases, the brazing material must be highly thermally conductive to enable heat dissipation.

None of the products sold by the competition is really satisfactory.

Cirimat have opened up a new way through the development of an innovative brazing process using silver-oxalate micro-particles. This process has allowed to generate Ecorel™ Oxal AG, a new product which has been showcased in June during the SMTconnect fair in Nuremberg. The competitively priced product responds to strong expectations from the manufacturers of electronic products subject to very high temperature. By anticipating the latest set of regulatory and environmental constraints planned to be introduced in 2021, Inventec guarantees a significant business edge to customers.

Partnership

As a CNRS-affiliated research centre, Cirimat's know-how is based on an extensive expertise in material science. The research team has based the new brazing process by combining his knowledge of metal organic precursor and powder metallurgy. Inventec enjoyed the benefits of a patent license resulting from a partnership between Thales group and Chimie Balard Cirimat Carnot Institute, while participating to the Bravoh* programme, a project supported by the French Government Defense Procurement and Technology Agency (Direction générale de l'armement, DGA) in which were also involved Gaches Chimie** and ISP System***. It is under such context that Inventec could determine the formula of such soldering paste, which is operated at a low temperature for highly thermally conductive and environment compliant solders.

The 2011-registered license patent allows Inventec to market the very innovative brazing material, which constitutes a significant progress and engine for the industry. Hence consolidating, through such novelty, its leading position across the Asia-Pacific, Europe and North-America regions.

* BRASing microVOid free and High thermal conductivity

** French distributor of commodity chemicals

*** French-based key player in the field of mechatronics, precision engineering and robotics