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# Sumitomo Metal Mining Develops 100nm Nano Copper Powder with Good Oxidation-resistant

## Exploring Mass Production for Power Semiconductor Materials such as Bonding Materials

Tokyo, Japan – Sumitomo Metal Mining Co., Ltd. (TSE: 5713) has announced the successful development of a 100nm oxidation-resistant nano copper powder. This innovative material is expected to play a key role in power semiconductor applications, particularly as a bonding material. In addition, the company is accelerating sample evaluations of its previously developed 200nm grade with multiple customers toward product qualification, while preparing for mass production targeted for the fiscal year ending March 31, 2027.

Bonding materials are essential for joining semiconductor substrates to each other, as well as attaching chips to substrates, and silver powder-based pastes are currently mainly used for these purposes. However, the recent rise in silver prices has increased demand for copper powder alternatives. Traditionally, copper powder has posed challenges due to its susceptibility to oxidation, making it more difficult to handle compared to silver.

Sumitomo Metal Mining has leveraged its proprietary expertise in nano metal powder synthesis to create a nano copper powder that offers excellent resistance to oxidation, outstanding low-temperature sinterability, and uniform particle size distribution. These features have been highly rated for their compatibility with power semiconductor including Silicon Carbide (SiC) Substrate.

In the future, with the addition of the newly developed 100nm grade, which enables even lower-temperature sintering, Sumitomo Metal Mining aims to broaden the applications of this nano copper powder, utilizing its extensive particle size range and exceptional characteristics. In addition to bonding materials, the company will accelerate its efforts to expand into various applications in other semiconductor-related materials, wiring for electronic substrates, and electrodes for solar cells.

Oxidation-resistant Nano Copper Powder by Sumitomo Metal Mining

For further information: https://crossmining.smm-g.com/material/fine_copper_powder/

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