



■ M40 & M46 SP Series Solder Pastes

The M40 low silver-content solder paste has been adopted for TVs and other electronics products made by Panasonic Corp. for more than one year. The M40 has enabled cost reduction, while ensuring mounting conditions identical to those of the conventional 3% Ag (M705) solder, and features improved thermal fatigue properties.

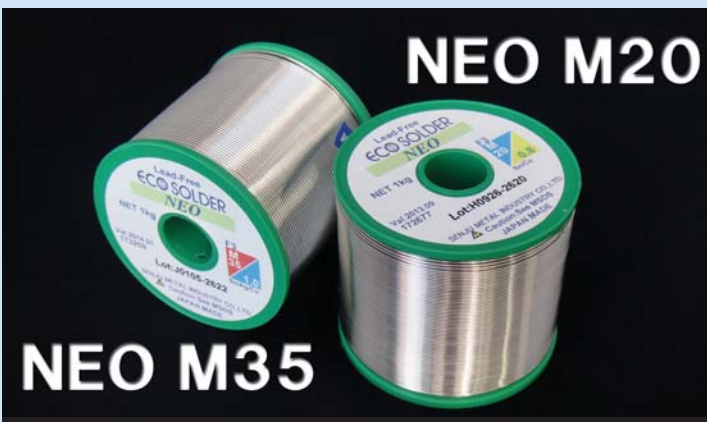
Prices of raw materials keep rising and manufacturers have been intensifying their cost-reduction strategies. Against this backdrop, low-cost solder materials have been sought. One of the measures for reducing cost is the reduction of silver (Ag), which is expensive. Simply reducing the silver content from 3 percent results in

the rise of melting points (liquidus temperatures), and it becomes necessary to raise the mounting temperature. This causes thermal fatigue properties to deteriorate. Senju Metal Industry Co., Ltd. (SMIC) has reduced the Ag content to 1 percent. Instead, the company has made a solid solution alloy by adding minute amounts of bismuth (Bi) and indium (In) to tin (Sn), then added a minute amount of antimony. This resulted in the improvement of thermal fatigue properties, while suppressing the rise of melting points.

SMIC recommends the M46 with 0.3% Ag to customers who seek low-priced halogen-free low Ag-content solder pastes.

Although the M46 has a melting point about 5°C higher than that of the M40, it features a low melting point compared to similar products of other companies through the addition of minute amounts of Bi and In. Although it is necessary to slightly raise the mounting temperature, the M46 is very attractive for products with allowance in thermal resistance.

Many manufacturers also aim to reduce costs by improving production efficiency. Thus, SMIC has developed the SP Series, which enables high-speed printing and reflow in a short time, thereby increasing the production efficiency of mounting by about 30 percent.



■ M35 & M20 NEO Resin Flux Cored Solders

Featuring even better workability over its predecessors, NEO resin flux cored solders suit next-generation mounting. The M35 is a low-silver type with 0.3% Ag, while the M20 does not include silver at all. Achieving cost reduction of 50 percent, both products are epoch-making low-cost products. Furthermore, as they feature quick initial wetting and wetting spreads smoothly, they allow soldering in a short time. Thus, they have reduced soldering time by about 33 percent from conventional products and contribute to improved workability. As general-purpose products, they serve a wide range of applications.