



November 28, 2016

NEWS RELEASE

## **Increased Production Capacity for Ultra-Thin Electrodeposited Copper Foil with Carrier**

— Expansion into new opportunity, increased monthly production capacity to 2.7 million square meters —

Mitsui Mining & Smelting Co., Ltd. (President: Keiji Nishida; “Mitsui Kinzoku,” hereafter) is pleased to announce that it has decided to increase monthly production of its ultra-thin electrodeposited copper foil with carrier product from the current 2.0 million square meters to 2.7 million square meters.

MicroThin™ ultra-thin electrodeposited copper foil with carrier product is much suitable for making fine circuit due to foil thickness of 1.5μm - 5 μm and various surface treatments. With the availability of roll width up to 1300mm and stable carrier peeling strength, the product is highly regarded by customers for its contributions to improved productivity and higher process yields.

To date, MicroThin™ has primarily been used for package substrates of application processor, memory and modules in smartphones. Now, with smartphones becoming more sophisticated, consideration is advancing to apply MSAP\*<sup>1</sup> technology to HDI\*<sup>2</sup> printed circuit boards for smartphones with fine circuit ( $L/S \leq 30/30\mu\text{m}$ ). As use expands into these new opportunities, ultra-thin electrodeposited copper foil demand is expected to undergo further growth moving forward.

Current production volume averages approximately one million square meters per month, and while Mitsui Kinzoku believes it can adequately accommodate new and additional demand in 2017 through the capacity of its existing facilities, as demand is expected to expand continuously from 2018 onward, the company will increase monthly production capacity at the Ageo plant from 1.4 million to 1.5 million square meters while also boosting its production capacity at the Malaysian plant (Mitsui Copper Foil (Malaysia) SDN. BHD.). As the first stage at the Malaysian plant, monthly production capacity including the BCP line\*<sup>3</sup> will increase from 0.6 million square meters to 1.2 million square meters.

Mitsui Kinzoku will maintain stable quality and adequate supply to current customers using the product for package substrates. At the same time, a supply framework to accommodate these new opportunities will be established as the company pursues improved technological response and development capabilities alongside close coordination with customers.

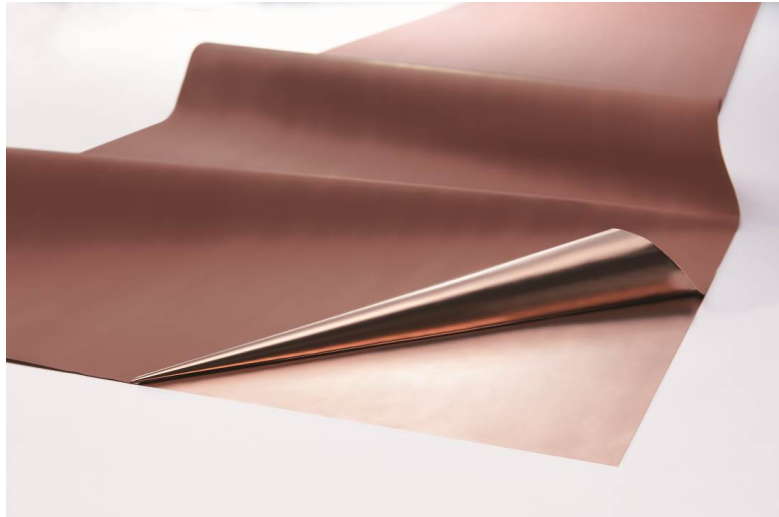
By increasing MicroThin™ production capacity, Mitsui Kinzoku will respond to the rapid increase in demand while accelerating the development of future-oriented products under its slogan of Material Intelligence.

[Inquiries]

Investor Relations and Corporate Communications Department, Corporate Planning & Control Sector

Mitsui Mining & Smelting Co., Ltd.

Email: [PR@mitsui-kinzoku.co.jp](mailto:PR@mitsui-kinzoku.co.jp)



MicroThin™ ultra-thin electrodeposited copper foil with carrier

(Note)

\*1: MSAP

Abbreviation of Modified Semi-Additive Process; Techniques for forming printed circuit boards, include the Subtractive Process and Semi-additive Process (SAP). While the Subtractive Process etches lines across the entire substrate surface of copper foil, removing only the non-circuit parts to form the circuit, SAP forms resistance in the non-circuit parts in advance, and then forms only the circuit parts as a plated seed layer (palladium, etc.). While MSAP employs similar techniques to SAP, as it uses ultra-thin copper foil, there is no need to form a seed layer of palladium or other materials, making it possible to form fine circuits with comparative ease.

\*2: HDI

Abbreviation of High Density Interconnect

\*3: BCP Line

A backup MicroThin™ manufacturing line set up at a plant in Malaysia as a business continuity planning (BCP) measure in the event Japanese sites can no longer operate (see June 7, 2011 news release titled “Backup system for procuring MicroThin™, ultra-thin electrodeposited copper foil with carrier”).

(Reference)

Ageo Plant

- (1) Name Ageo Plant, Copper Foil Division, Engineered Materials Sector
- (2) Location Ageo-shi, Saitama Prefecture
- (3) Site Manager Makoto Hamamoto
- (4) Established September 1967
- (5) Business Activities Manufacturing of copper foil for package substrate and printed circuit boards

Mitsui Copper Foil (Malaysia) SDN. BHD.

- (1) Name Mitsui Copper Foil (Malaysia) SDN. BHD.
- (2) Location Selangor, Malaysia
- (3) President Hirotoshi Fukumoto
- (4) Established April 1989
- (5) Capital 330,000 Malaysian Ringgit
- (6) Investment Mitsui Kinzoku (100%)
- (7) Business Activities Manufacturing of copper foil for printed circuit boards