

Copper Foil for Electromagnetic Shielding

 **JX Nippon Mining & Metals Corporation**

High-Electrical Conductivity Copper Alloy - Corson Alloy -

Application Examples



Battery Terminal



Smartphone



Copper Alloy



Automobile



Floating Connector



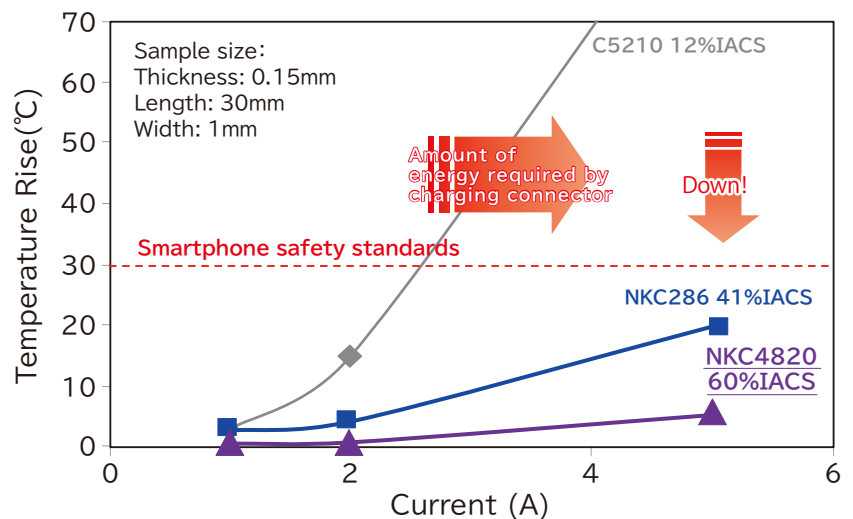
USB Type-C



FPC Connector

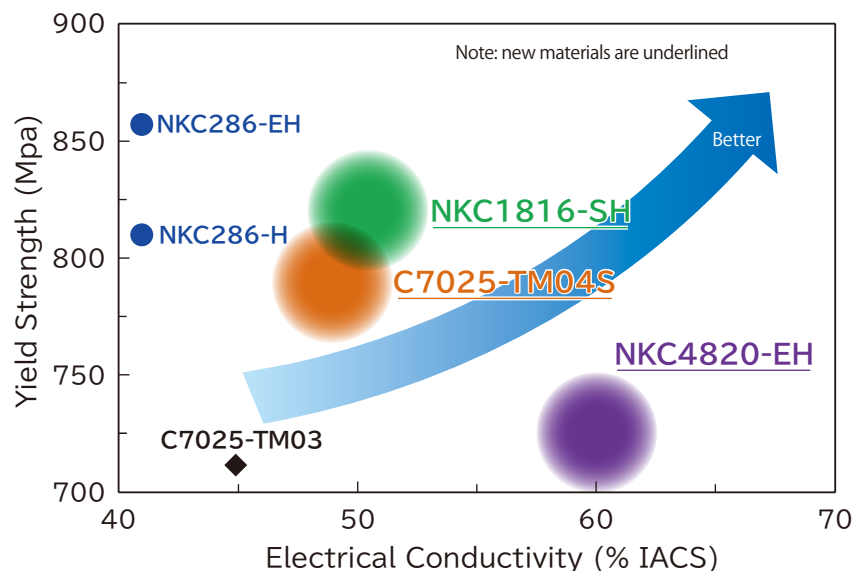
Merits for Customers

- Connectors supplying large volumes of electricity suppress heat generation and improve energizing efficiency.
- Since high-conductivity Corson alloys increase the volume of electricity supplied, they can be used in areas where conventional Corson alloys cannot, such as rapid charging and next-generation USB4 connectors.
- Despite being highly conductive, they maintain the same levels of strength, bendability, and heat resistance as conventional Corson alloys.



Features of High-Electrical Conductivity Corson Alloy

- High-conductivity Corson alloy maintains strength and boasts high conductivity compared to conventional C7025, C7035 and NKC286.
- We have a track record of manufacturing micro-connector-compatible plates as thin as 60µm.
- NKC1816-SH and C7025-TM04S have improved conductivity with C7035-level strength. NKC4820-EH maintains the strength of C7025 and greatly improves conductivity.



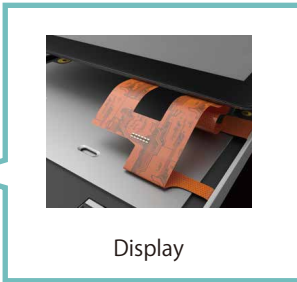
Copper Foil for Fine Pitch & High Frequency Performance “BHM Treatment”

Application Examples

Printed Circuit Board



Smartphone



Display



Millimeter-wave Radar

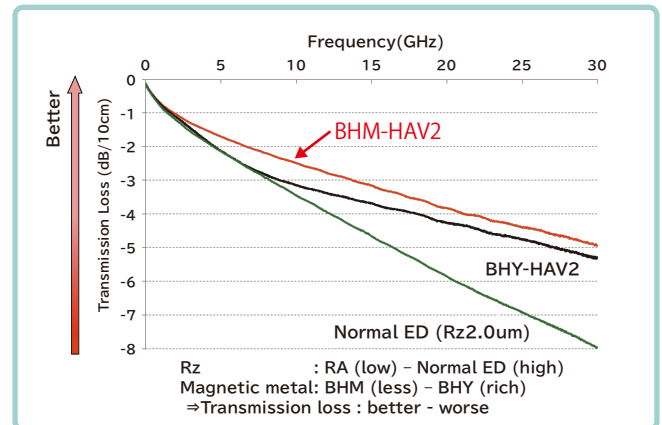
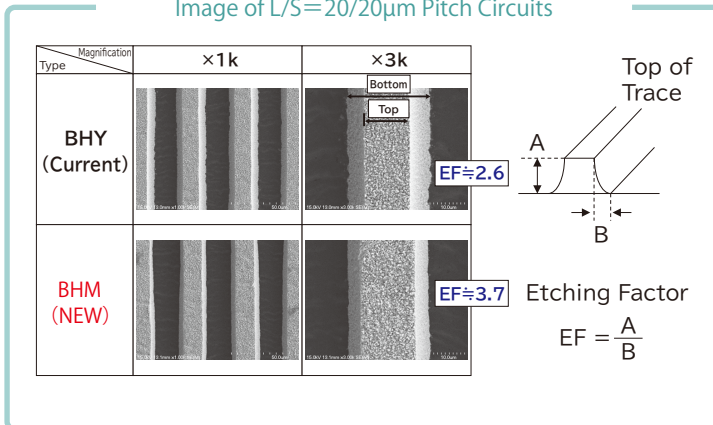


Automobile

Merits for Customers

- BHM exhibits high frequency & fine pitch (under L/S=25/25μm) as well as good FPC reliability. BHM can be applied with JX's rolled copper foil and electro-deposited copper foil.

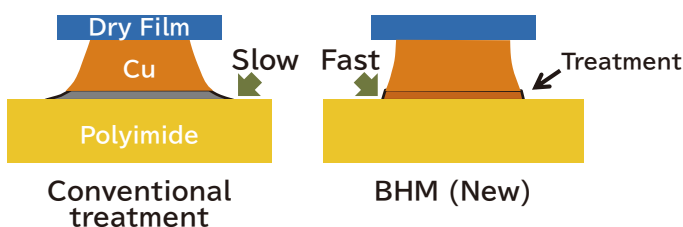
Image of L/S=20/20μm Pitch Circuits



Features of BHM

- BHM is a treatment which can be etched faster and achieve a high etching factor (EF).
- BHM achieves high-frequency performance by lessening the amount of magnetic metals. At the same time, BHM maintains good FPC reliability.

Mechanism of High Etching Factor (EF)



FPC reliability test of BHM treatment

Evaluation subject	BHY-HA-V2	BHM-HA-V2
Peel Strength	1.3N/mm	1.3N/mm
Solder blister test After 85°C 85%RH for 48hr, Dipping 290°C for 60sec	No blister	No blister
Undercut test SPS 50 g/L 15min dip	No undercut	No undercut

Copper Material for High Frequency & High Speed Transmission

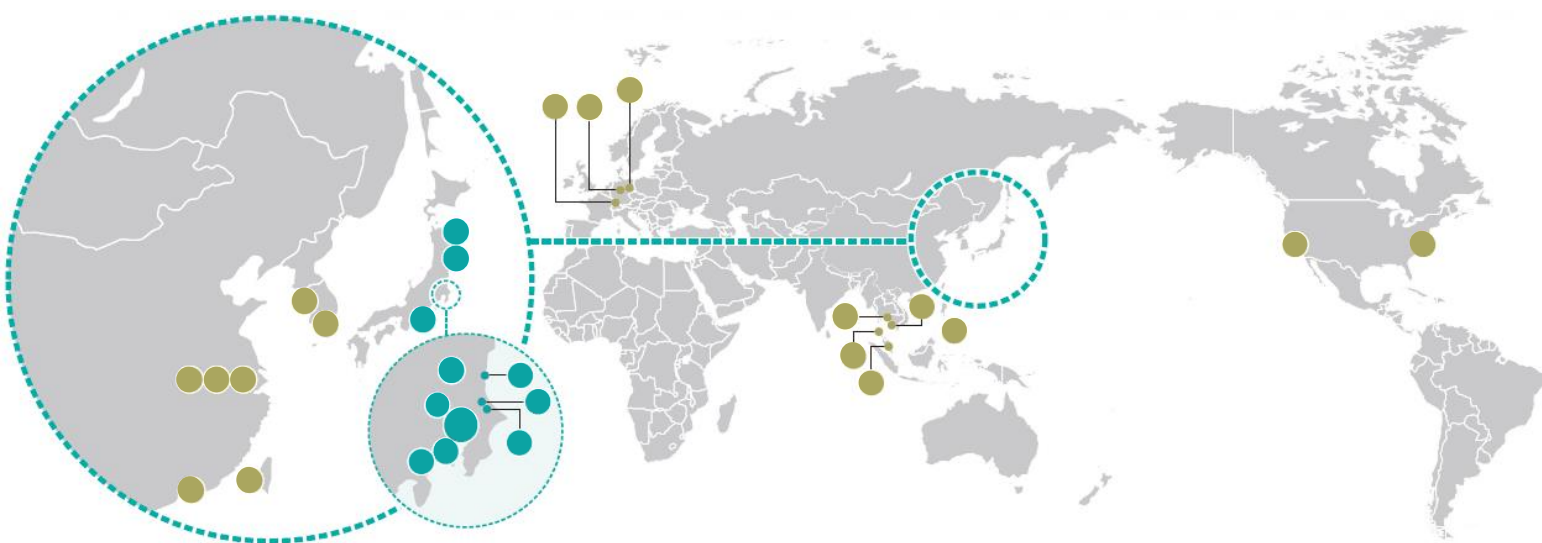
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Contact: jxatelectronica@jxgr.com

JX Nippon Mining & Metals Electronic Materials Production and Operating Sites



Company Outline (As of July 1, 2020)

Name	JX Nippon Mining & Metals Corporation
Capital	JPY 75 billion
Lines of Business	Functional Materials, Thin Film Materials, Mineral Resources, Metals, Recycling and Environmental Services, Tantalum and Niobium
Head Office	The Okura Prestige Tower 10-4, Toranomon 2-chome, Minato-ku, Tokyo 105-8417, Japan
Shareholder	Wholly owned by ENEOS Holdings, Inc.

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