

PRESS RELEASE

TODA KOGYO CORP.

Fine Material Business Division

Marketing Department

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**Commercialization of Thick and Ultra-Large Flexible Ferrite Sheets for  
Wireless Power Transfer of EV**

Hiroshima, June 15, 2020 – TODA KOGYO CORP. is pleased to announce to have installed the development equipment for thick and ultra-large flexible ferrite sheets with a view to mass production and have launched the sample offer of this products for wireless power transfer of EV. This product has been developed and commercialized by our unique and original technologies.

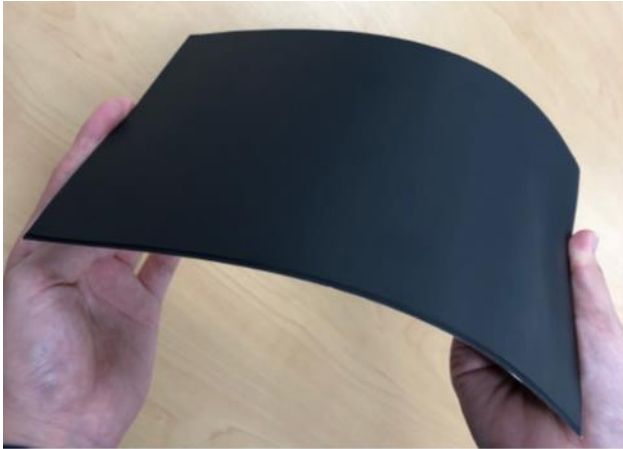
TODA KOGYO CORP. has many patents and manufacturing know-how for flexible ferrite sheets to which our technologies relating to the manufacture of iron oxide and ferrite cultivated over many years are applied. As an industry pioneer who invented these products, we started full-scale mass production of flexible ferrite sheets for NFC antennas installed in smartphones in 2006 and for wireless power transfer installed in smartphones in 2017. Currently, we have the largest supply capacity on a world scale with integrating our Otake Plant (Otake City, Hiroshima Prefecture) as mother factory, our group companies and partner companies.

Recently, wireless power transfer has become adopted for EV. As the technical global standard is

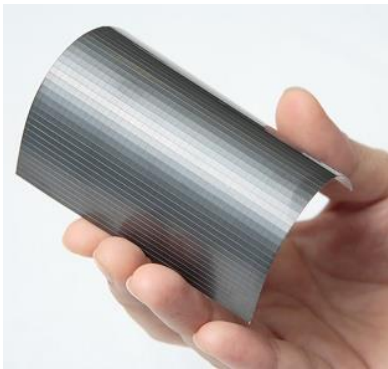
gradually solidified, the development and commercialization of the wireless power transfer system for EV in the mobility industry is accelerating against the background of the increase in the number of EV production and sales all over the world. However, comparing to smartphones, a large electric power needs to be transmitted and received for charging EVs therefore higher-performance ferrite materials and thicker films are required in the wireless power transfer application of EV. Also cracking and chipping of ferrite due to vibration are considered problems since ferrite is a ceramic and fragile in general. However, our flexible ferrite sheets show high impact resistance, thus our technologies to manufacture such products are drawing attention from the market. Therefore, we have been integrating the development and manufacturing know-how of Mn-Zn ferrite at our Korean affiliate company "TODA ISU CORPORATION" and those of flexible ferrite sheets to create better synergies. Moreover, press molded ferrites are generally used for wireless power transfer of EV, but this application requires extremely large size antenna coils and it is difficult to manufacture by press molding. Compared to that, we are able to manufacture ultra-large flexible ferrite sheets by using our sheet formation technologies. Currently, we have started sample offer of flexible ferrite sheets with a size of 200 mm × 100 mm (ferrite thickness of 1-2 mm), and in the near future, we aim to manufacture sheets with a size of 200 mm × 300 mm size (ferrite thickness of 1-4mm).

We have a plan to expand our business by building an annual supply capacity to cover for 1 million EV cars by 2025, when the EV market is expected to expand after the wireless power transfer system infrastructure of EV will be established.

1.) Thick and Ultra-Large Flexible Ferrite Sheets for Wireless Power Supply of EV



2.) Thin Flexible Ferrite Sheets for Smartphones



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