

Toyochem Co., Ltd.

## **Toyochem Develops Highly Flexible EMI Shielding Films for Smart Devices**

*A lightweight, ultra-thin and effective alternative to metal shielding cans.*

**June 9, 2023, Tokyo, Japan**—Toyochem Co., Ltd., the polymer and coatings division of Japan's Toyo Ink Group, has rolled out the new LIOTELAN™ line of highly flexible conductive and insulating sheet films for the protection of electrical and electronic equipment. The new sheet films exhibit high water-resistance and are highly flexible with a high elongation of 500 percent. LIOTELAN shielding films can be hot-press molded on to the electromagnetic interference (EMI) noise source on the printed circuit board (PCB), thus forming a lightweight multi-layer shield with a more compact format than a metal shielding can. This gives component engineers increased design freedom to create electronic devices of lower profiles and lighter weights – and without compromising shielding effectiveness. Potential applications are wearable devices, wireless communications and other smart devices.

Traditionally, metals are commonly adapted as EMI shields due to their shielding effectiveness. Looking to replace shielding metals, Toyochem engineers in Japan applied its own functional filler dispersion technology in the development of highly conductive fillers to improve EMI shielding performance. This development, and the application of Toyochem's polymer sheet conversion technology, led to the creation of filler films that could be converted into flexible LIOTELAN sheet films with high shielding effect, water-resistance and mechanical durability.

Moreover, LIOTELAN sheet films are capable of fabricating multi-layer EMI shields by the hot-pressing method. "An insulating sheet layer can be hot-press molded directly over electronic components attached to the substrate. A conductive layer is formed over the insulating layer using the same method. With LIOTELAN shielding films, device engineers can easily and speedily create lightweight, durable and effective EMI shields, without the need for soldering or a bulky can cover," explains Hidenobu Kobayashi, technical manager at Toyochem. "This new innovative product enables the formation of ultra-thin shielding laminates of high flexibility, conductivity and insulation properties required by next-generation PCBs. In line with rising demand for components of lighter weight, lower profiles, and more durable and flexible materials, we expect to see the trend towards metals being replaced by polymer composites to continue."

The new LIOTELAN line of EMI shielding sheet films will be making its global debut at the Toyochem booth #1016 at the International Microwave Symposium in San Diego, California, from June 11–16, 2023. Toyochem will also feature its LIOELM™ TSS™ 500 series for next-generation high-speed communication devices among other high-performance materials designed to solve problems related to electromagnetic radiation and thermal conductivity.

### **About Toyochem Co., Ltd.**

Toyochem, a wholly owned subsidiary of the Toyo Ink Group, oversees the Group's Polymers and

Coatings-related business segment as a core operating company. Headquartered in Tokyo, the company operates three production facilities in Japan. Using the Group's polymer design technologies that have been cultivated for over a century, Toyochem manufactures polymers, adhesive tapes, marking films and coatings for a wide array of industrial applications. The company's slogan "Something New, Close to You" embodies its commitment to continuously bring new value to everyday lives by delivering new solutions that use Toyochem polymers as their core material. For more information, visit [www.toyo-chem.com/en/](http://www.toyo-chem.com/en/).

For more information about the Toyo Ink Group, see the website of the parent company Toyo Ink SC Holdings Co., Ltd. at [schd.toyoincgroup.com/en/](http://schd.toyoincgroup.com/en/).

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