

Press Release

How to Choose the Right Material for Wireless Earbuds? KRAIBURG TPE's Light Effect TPE Combines a Soft-Touch Feel with Seamless Light Transmission for Integrated LED Designs.

Kuala Lumpur, July 2026

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How to Choose the Right Material for Wireless Earbuds? KRAIBURG TPE's Light Effect TPE Combines a Soft-Touch Feel with Seamless Light Transmission for Integrated LED Designs.

As the true wireless stereo (TWS) earbuds and consumer electronics markets continue to grow rapidly, product designers, OEMs, and R&D engineers are looking beyond lightweight and stylish designs. Comfort, durability, LED lighting performance, and manufacturing efficiency have become equally important considerations. As a result, selecting the right material for wireless earbuds has become a critical part of consumer electronics product development.

Thermoplastic elastomers (TPEs) have become a popular material choice for wireless earbuds, wearable devices, and various consumer electronics due to their soft-touch feel, excellent mechanical properties, design flexibility, and efficient processing. In applications requiring light transmission for integrated LED designs, ergonomic designs, and long-term durability, Light Effect TPE is emerging as the preferred material solution.

As a globally recognized manufacturer of thermoplastic elastomers, KRAIBURG TPE offers Light Effect TPE series specifically developed for consumer electronics. Combining a soft-touch surface, high light transmission, and excellent adhesion to polypropylene (PP), this material enables OEMs, product designers, and electronics manufacturers to create the next generation of wireless earbuds that seamlessly combine functionality, aesthetics, and user comfort.

Why Are More Wireless Earbuds Using Light Transmission TPE Materials?

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Today's wireless earbuds are no longer just audio devices. They have become an essential part of everyday life, fitness activities, business communication, and entertainment. Beyond reliable performance, consumers increasingly expect products to feature attractive designs, ergonomic comfort, and personalized user experiences.

[KRAIBURG TPE's Light Effect TPE series](#) offers excellent light transmission while maintaining a clean, understated appearance. When the device is powered on, it delivers a smooth and uniform light transmission for integrated LED designs. When powered off, the material maintains a consistent exterior appearance, allowing functional lighting to blend seamlessly with premium product design.

The Light Effect TPE can be used for LED status indicators, touch-control areas, and illuminated branding elements, enhancing both product identity and user interaction.

Soft-Touch Comfort for Long-Term Wear

Comfort during extended wear is one of the most important material requirements for [wireless earbuds](#).

KRAIBURG TPE's Light Effect TPE series features a soft, comfortable surface and excellent elasticity, enabling designers to create ergonomic earbud structures that improve long-term wearing comfort. The material also offers low odor and low VOC characteristics, making it suitable for consumer electronic devices that come into direct contact with the skin, providing a more comfortable and natural user experience.

In addition, the material delivers excellent mechanical performance, maintaining its durability even after repeated use. It also provides outstanding UV resistance and weatherability, helping ensure long-term reliability for wireless earbuds and wearable devices.

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Excellent PP Overmolding Performance for Greater Manufacturing Efficiency

For wireless earbud manufacturers, processing performance is just as important as appearance and comfort.

KRAIBURG TPE's Light Effect TPE series provides excellent adhesion to polypropylene (PP), enabling reliable overmolding between soft and rigid components. This allows manufacturers to achieve integrated part designs while improving product reliability and production efficiency.

Its excellent flowability and molding characteristics support complex part geometries, lightweight construction, refined product designs, and innovative aesthetics. The material also provides greater design freedom while meeting the consumer electronics industry's demand for rapid development and high-volume production.

Meeting Safety and Sustainability Requirements for Consumer Electronics

In addition to performance, consumer electronics manufacturers increasingly require materials that comply with stringent safety and environmental standards.

KRAIBURG TPE's Light Effect TPE series complies with the IEC 61249-2-21 halogen-free standard, supporting product safety, environmental responsibility, and long-term reliability. With excellent UV resistance and weatherability, the material is suitable for both indoor and outdoor [consumer electronics applications](#).

Beyond wireless earbuds and TWS earphones, the Light Effect TPE series is also ideal for: Smartwatches, wearable devices, smart home products, gaming

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controllers, household appliances, displays and LED indicator components and other consumer electronics applications.

With its combination of innovative design capabilities, long-lasting durability, and superior user experience, KRAIBURG TPE's Light Effect TPE series helps manufacturers develop premium consumer electronics products that stand out in today's competitive market.

Sustainability from the get-go

At KRAIBURG TPE, [sustainability](#) drives our innovation. Our portfolio includes bio-based TPEs and compounds with post-consumer (PCR) and post-industrial (PIR) recycled content. Selected TPEs are certified under GRS and ISCC PLUS. We also provide Product Carbon Footprint (PCF) data upon request to support sustainability decisions.

We proudly earned the EcoVadis Gold Medal in 2025 and are committed to the Science Based Targets initiative (SBTi), aligning our goals with global climate action.

From reducing emissions to increasing circularity, our sustainable TPEs deliver reliable performance and are available worldwide to support your applications while advancing your sustainability goals.

Get in touch today to learn how KRAIBURG TPE can support your sustainability and product development journey.

Discover More with TPE: Whether it's [robotic applications](#) or [smart lock systems](#), KRAIBURG TPE delivers safe, durable, and user-friendly solutions for every day.

***Disclaimer:** The applications mentioned are illustrative of material capabilities only. Final product suitability and regulatory compliance must be assessed and validated by the customer.*

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(Photo: © 2026 KRAIBURG TPE)

For high-resolution photography, please contact Bridget Ngang (bridget.ngang@kraiburg-tpe.com , +6 03 9545 6301).

Information for members of the press:



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KRAIBURG TPE (www.kraiburg-tpe.com) is a global manufacturer of custom thermoplastic elastomers. KRAIBURG TPE was founded in 2001 as an independent business unit of the KRAIBURG Group and is now the industry's competence leader in the field of TPE compounds. The company's goal is to provide safe, reliable and sustainable products for customer applications. With more than 718 employees worldwide and production sites in Germany, the USA and Malaysia, the company offers a large product portfolio for applications in the automotive, industrial and consumer goods industries, as well as for the strictly regulated medical sector. The established THERMOLAST®, COPEC®, HIPEX® and For Tec E® product lines are processed by injection molding or extrusion and offer manufacturers numerous advantages not only in processing but also in product design. KRAIBURG TPE is characterized by its innovative strength, global customer orientation, customized product solutions and reliable service. The company is ISO 50001 certified at its headquarters in Germany and holds ISO 9001 and ISO 14001 certifications at all its sites worldwide.