

pentatonic™
composite battery enclosures
from full hybrid to PHEV applications



PENTATONIC



hybrid vehicle battery enclosures



Introducing Kautex Pentatonic Battery Enclosures for full hybrid vehicles (FHEV) and plug-in hybrid vehicles (PHEV)

Our Pentatonic Battery Enclosure has been retrofitted into an existing hybrid vehicle, which hit the road in 2021 and has driven over 30,000 miles. Through rigorous testing, the Pentatonic enclosure has been fully validated and approved by the OEM. Kautex has always been at the forefront of battery enclosure development for hybrid vehicles, and now we're ready for serial production.



Benefits

ELIMINATE & INTEGRATE

As the demand for hybrid vehicles continues to rise and production volumes increase, the lower process costs associated with our composite injection or compression molding far surpass material expenses. Our one-shot process eliminates costly assembly steps, such as welding or gasket area cleaning, and we integrate lower-cost cooling solutions to replace cooling plates and thermal interface materials.

EFFICIENT COOLING SOLUTIONS

Customers can select from our range of integrated cooling solutions, each resulting in increased space for cells, providing volumetric and cost advantages:

- Immersion Cooling:** Ideal for high-performance cars.
- Flexible Cooling:** Integrates directly into PHEV enclosures, reducing weight compared to cooling plates and delivering a ready-to-assemble part.
- Overmolded Cooling Plates:** Efficiently saves space, materials, and eliminates welding operations.

GLOBAL FOOTPRINT

With our extensive network of injection molding and compression molding machines around the globe, we are well-prepared for large-scale serial production of PHEV and FHEV enclosures. Our global footprint ensures that we can efficiently deliver to customers worldwide. For several decades, Kautex has been a key automotive industry supplier with facilities in close proximity to major OEM production sites, and we will continue to work closely with our customers.

ENHANCED PRODUCTION

The benefits of composite compression and injection molding are clear: extended tool lifespan, reduced cycle times, and fewer secondary processes (such as welding) in comparison to a metal production. Overall, composite PHEV enclosures offer a cost-effective, secure, and lightweight solution.

PRECISION IN COMPLEXITY

By optimizing the design to utilize every bit of available space, we enhance the energy capacity per volume and weight of these enclosures, ensuring superior efficiency in spatial management. Our production processes then allow for the manufacturing of complex shapes, maximizing useable space for OEMs.

SUSTAINABILITY

Kautex has ongoing projects to reduce our carbon footprint further, identify proper end of life and production scrap recycling, and improve energy consumption. Kautex received an A-rating from CDP, a global disclosure system for investors and companies to manage their environmental impacts, a testament to Kautex's commitment to this cause.