Epsilon Launches "Epsil" Silicon Blend Graphite Anode Material, Targeting 20–30% More EV Range

EpSil combines 600–650 mAh/g anode capacity with faster-charging capability and compatibility with existing cell production lines.

Mumbai, India, 04 Nov 2026 — Epsilon Advanced Materials today announced the launch of Epsil, a silicon–graphite composite anode material developed to help battery makers deliver more energy from the same size battery pack. Epsilon projects the material could increase driving range upto 30% without increasing the battery pack size. Alternatively, its higher capacity could allow manufacturers to pursue a smaller pack while maintaining the vehicle's existing range. Actual increase in range will depend on cell chemistry, silicon loading, electrode design, pack design and vehicle performance.

Epsil has a reversible capacity of 600–650 mAh/g, compared to 340–360 mAh/g for conventional graphite anodes. This silicon blended graphite material gives cell makers a higher cell level energy density while addressing the cycle-life challenges that comes with silicon's expansion during charging and contraction during discharging.

Faster charging is another focus. Epsil is designed to support 1C–5C charge rates while controlling expansion and maintaining uniform silicon dispersion in the anode. Epsilon has also engineered the composite to reduce lithium plating risk at high-rate charging and the associated risk of dendrite formation. Lithium plating is a known cause of battery degradation during fast charging and can contribute to short-circuit risks; the performance of Epsil on these measures will depend on cell design, temperature, charging protocol and validation in each customer's cell.

Vikram Handa, Managing Director of Epsilon Advanced Materials said *"Battery manufacturers are being asked to deliver more range and faster charging without making battery packs larger. With Epsil, we are delivering higher anode capacity, stable fast charging and compatibility with existing manufacturing lines. Our aim is to give customers more flexibility in how they design for vehicle range and pack size, through a resilient & secure anode material supply option from India."*

The launch comes as demand for EV batteries grows. More than 20 million electric cars were sold globally in 2025, according to the International Energy Agency (IEA). EV battery deployment reached 1.2 TWh that year and IEA expects it to approach 3 TWh by 2030.

About Epsilon Advanced Materials Pvt. Ltd.

Epsilon Advanced Materials Pvt. Ltd. (EAMPL), established in 2018 is dedicated to developing sustainable and high-performance battery materials i.e. anode & cathode active materials for strengthening the domestic & global battery material supply chain. The company has successfully commissioned India's 1st Graphite Anode material commercial plant EAM-ONE in Vijayanagar, Karnataka with plans to produce 30,000 tons/annum by 2028 which will scale up to 100,000 tons/annum by 2031.

Epsilon Advanced Materials has made strategic investments globally, including a $650 million investment in North Carolina for graphite anode material facility with 60,000 tons capacity by 2031. EAMPL recently forayed into lithium-ion phosphate (LFP) based Cathode Active Material business through a technology center in Germany shows its commitment to technological advancement in the battery industry. It also plans to build India's 1st Cathode Active Material manufacturing facility with 20,000 tons by 2028 to scale up-to 100,000 tons/annum by 2035. These initiatives align with its mission to support the global battery industry assnd contribute to sustainable development to Energize the World.

Media Contact: Sandeep Kumar I sandeep.kumar@epsiloncarbon.com