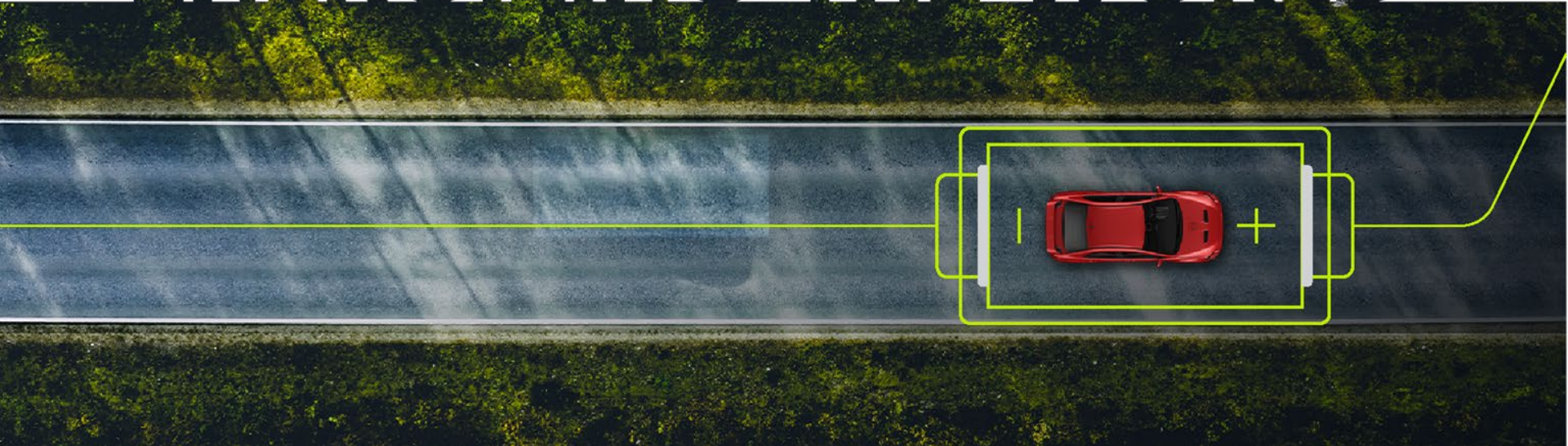




Sunit Kapur
Chief Executive Officer, Epsilon Advanced Materials Inc.

Feb 2025

ENERGIZING THE WORLD



OUR VISION

To be the leading global provider of battery material solutions, where energy is accessible, reliable, and sustainable for all.

OUR MISSION

To develop sustainable and high-performance battery materials that support the global battery industry in energizing the world with clean and green power.

OUR VALUES



Sustainability



Quality



Collaboration



Integrity



Innovation

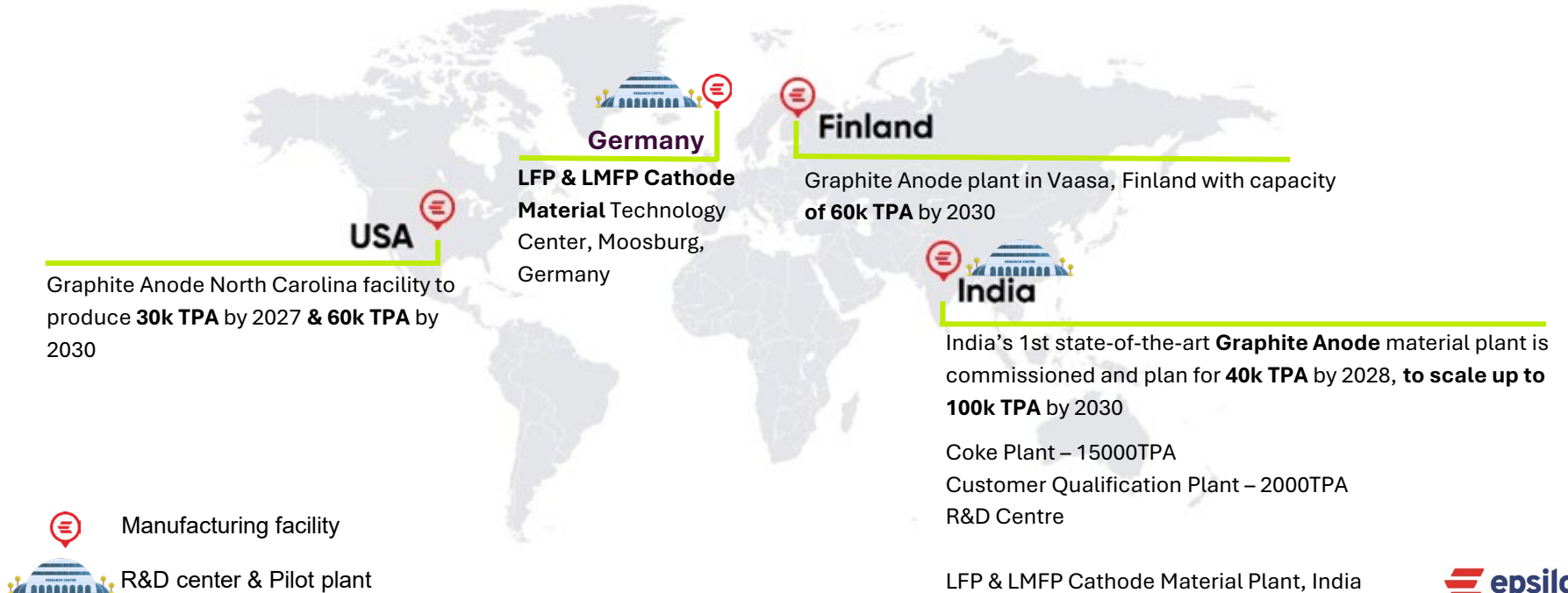


Passion



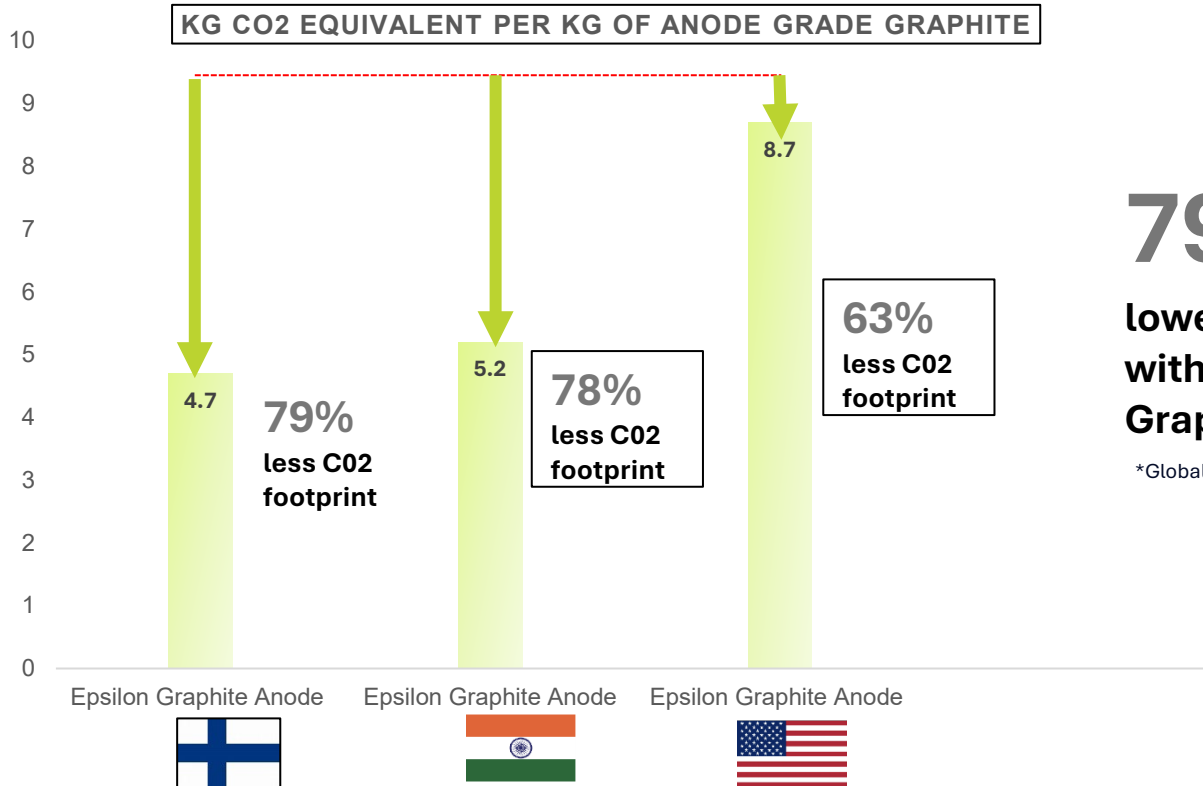
Who Are We?

Epsilon Advanced Materials is a leading global manufacturer of sustainable, high-performance and high-quality Anode & Cathode battery materials for Lithium-Ion Batteries. Epsilon Advanced Materials operates globally across Europe, North America, and Asia, strategically positioned to meet the growing demand for sustainable energy.



OPTIMIZING GWP IMPACT – ACTIVE ANODE MATERIAL

On an average 65-79% lower than currently active anode manufacturing companies in operations today



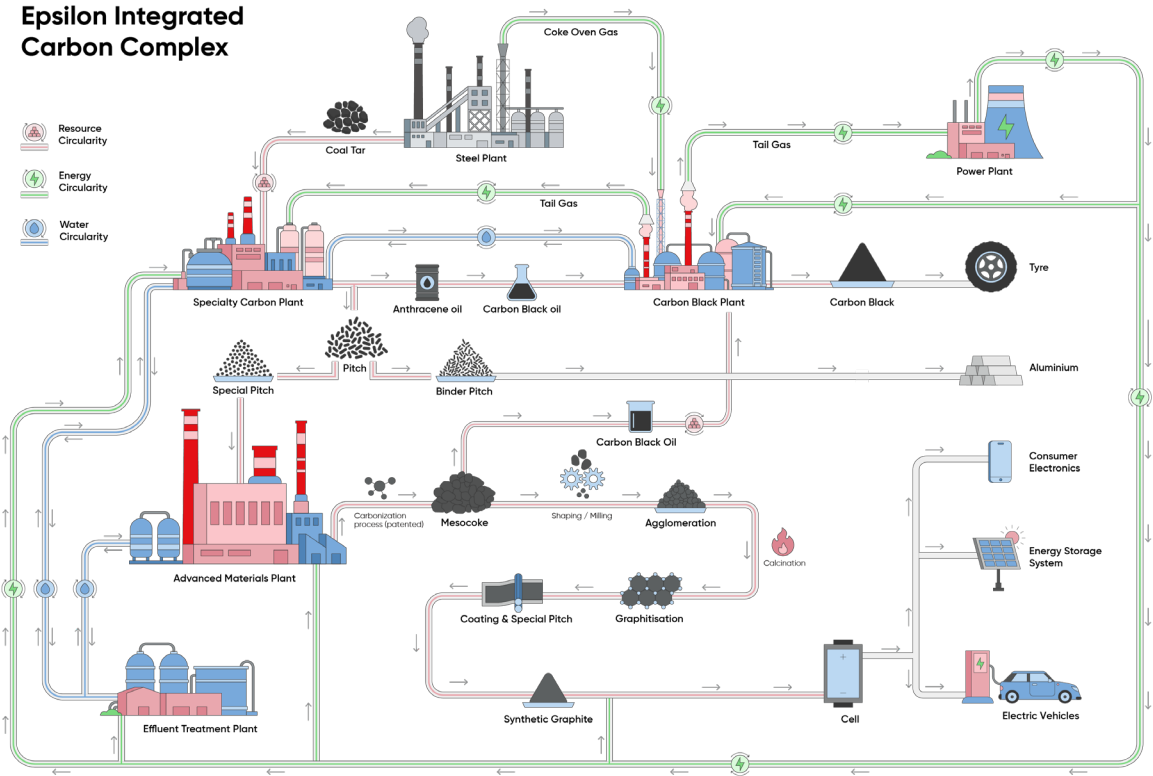
79%

lower GWP*
with Epsilon's
Graphite Anode

*Global Warming Potential

GRAPHITE ANODE MANUFACTURING PROCESS

The only fully backward-integrated company globally, with complete control over the entire supply chain from precursor to finished product



ENERGIZING TECHNOLOGY

Our R&D facilities in India & Germany leads innovation in battery material research, pilot production, cell fabrication, and testing, continuously exploring new materials, techniques, and designs.



Powder Synthesis & Testing

All the powder characterization done in house PSD, TD, PD, SSA, ICP, XRD, SEM/EDX, Raman



Full Cell

Rate performance, efficiency, cycle life, impedance, low & high temperature performance



Electrode

Slurry formation, coating, peel strength, density, wettability



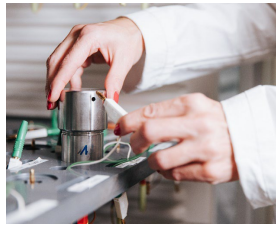
Pouch Cell

Single layer pouch cell for capacity, efficiency, rate and cycle life



Coin Cell

For capacity, efficiency, rate, cycle life and li plating



Half Cell

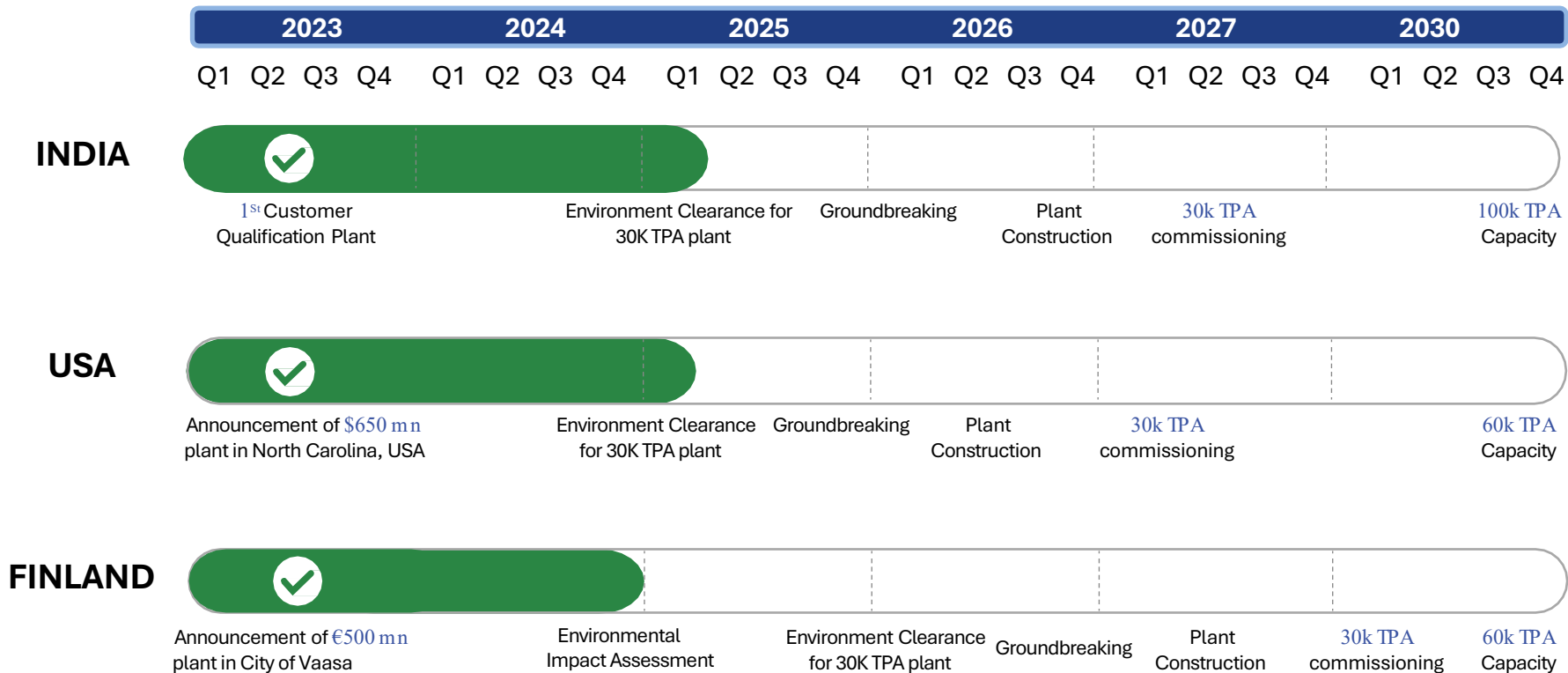
Capacity, rate performance, efficiency



Multi-layer pouch cell (1-3Ah)




Optimization in process & will be ready by 2025

ANODE INDUSTRIALIZATION PLAN – INDIA, USA, FINLAND



CATHODE INDUSTRIALIZATION PLAN – INDIA

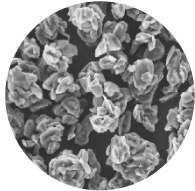
Epsilon CAM's - Cathode Active Material plant in Bellari, Karnataka to reach production capacity of 100kT by 2030

Pilot Plant (Technology development)	Mar-24	
Sales upto 10kT study	Dec-24	
Site Selection	Dec-24	
Basic Engineering / Feed	Jul-25	in-progress
Permitting	Aug-25	in-progress
Detailed Engineering Kickoff	Oct-25	
Groundbreaking	Dec-25	
Construction / Commissioning of 10kT LFP Cathode	Apr-27	

GRAPHITE ANODE – POWER/ EV APPLICATION

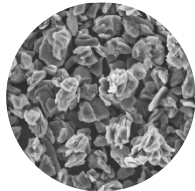
Epsilon's artificial and natural graphite anode materials are designed to focus on power cells for electric vehicles with fast charge and long-range capabilities. Our patented sustainable manufacturing process has chemical-free thermal purification ensuring high energy density, and excellent performance capabilities. These are further customized as per the customer requirements.

ARTIFICIAL GRAPHITE



EAG15

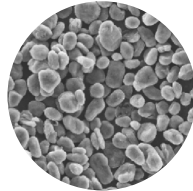
- Discharge capacity: 354±2 mAh/g
- FCE :>93%
- Particle size (D50): 16±2 µm



EAG15C

- First capacity: 352±2 mAh/g
- FCE :≥93%
- Particle size (D50): 15±2 µm

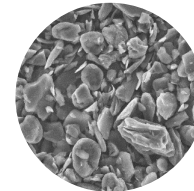
NATURAL GRAPHITE



EGNG10

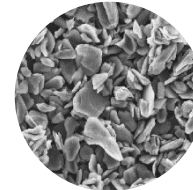
- Discharge capacity : 366±2 mAh/g
- FCE : >92 %
- Particle size (D50):10±2 µm

BLENDED GRAPHITE



ESNG10

- Discharge capacity: 359±3 mAh/g
- FCE : >93%
- Particle size (D50): 10±2 µm



EMAG15

- Discharge capacity: 353±2 mAh/g
- FCE :>93%
- Particle size (D50): 14±2 µm

* Customization available for all products

GRAPHITE ANODE – ENERGY STORAGE APPLICATION

Epsilon's artificial and natural graphite are engineered to make Energy Storage Systems more efficient and sustainable. With high electrode density, superior capacity, and enhanced safety, our graphite materials are optimized for advanced energy storage applications. It is further customized as per the customer requirements.

ARTIFICIAL GRAPHITE



EMG10

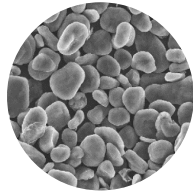
- Discharge capacity: 357±2 mAh/g
- FCE: >93%
- Particle size (D50): 10±2 µm



EMG15

- Discharge capacity: 353±2 mAh/g
- FCE :>93%
- Particle size (D50): 14±2 µm

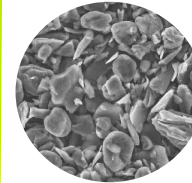
NATURAL GRAPHITE



EGNG15

- Discharge capacity: 366±2 mAh/g
- FCE : >92%
- Particle size (D50): 15±2 µm

BLENDED GRAPHITE



ESNG15

- Discharge capacity: 360±3 mAh/g
- FCE : >93%
- Particle size (D50): 15±2 µm

* Customization available for all products

LFP CATHODE MATERIAL FOR POWER & ESS APPLICATIONS

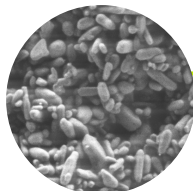
SINGLE & SPHERICAL CRYSTAL MORPHOLOGY



EC-P2

Application: PHEV and 12V starter

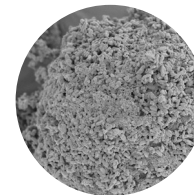
- High-rate performance
- Suitable for thin electrodes
- Excellent low temperature performance
- Carbon content - 1.4 ± 2.5 wt%
- Particle size D50* - 0.3 - 0.6 μm
- C/10 capacity** - >158 mAh/g



EC-P2E

Application: BEV and ESS

- Medium power performance
- Easy compression
- Excellent low temperature performance
- Carbon content - 1.4 ± 2.5 wt%
- Particle size D50* - 0.4 - 0.7 μm
- C/10 capacity** - >157 mAh/g



EC-P2S-UF

Application: PHEV

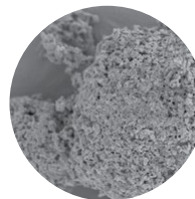
- High-Power
- Low Impedance
- Low temperature. Performance to -30°C
- Particle size D50* - 8 - 15 μm
- C/10 capacity** - >158 mAh/g



EC-P2S

Application: BEV, PHEV and ESS

- High performance & Energy Density
- Low polarisation & low cell impedance
- Low temperature performance
- Energy Density to improve by using P2S/P2- blends
- Particle size D50* - 11 - 16 μm
- C/10 capacity** - >158 mAh/g



EC-P2S2

Application: BEV, PHEV and ESS

- High-Power
- Low polarisation
- Low cell impedance
- Good Processability
- Low temperature performance
- Carbon content - 1.4 ± 2.5 wt%
- Particle size D50* - 7 - 13 μm
- C/10 capacity** - >155 mAh/g

*laser diffraction dry method for agglomerates and wet method for single-crystal materials

**half cell: LFP vs. Li metal (coin type cell), EC: 90/5/5, CCCV 2.5 V - 4.2 V, loading 10 - 12 mg/cm², electrolyte EC:EMC:MP=2:2:6 (v:v:v)

*With Manganese base for LMFP batteries

LMFP CATHODE MATERIAL

LMFP Cathode material with Manganese increases cell voltage for an improved energy density and maintaining very good thermal stability of the Phospho-Olivine compound

SINGLE CRYSTAL MORPHOLOGY

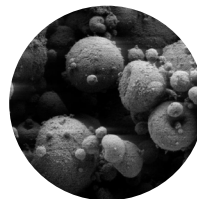


EC-M2

Application: BEV and ESS

- Particle size D50* - 0.5 – 5 μm
- Carbon content - 1.6 \pm 0.3 wt%
- Surface area (BET) – 26 - 36 m²/g
- C/10 capacity** - 148 mAh/g
- 4C capacity** - 134 mAh/g

SPHERICAL AGGLOMERATED MORPHOLOGY



EC-M2S

Application: for BEV and ESS

- Particle size D50* - 7 – 14 μm
- Carbon content - 1.6 \pm 0.3 wt%
- Surface area (BET) – 23 - 33 m²/g
- C/10 capacity** - >148 mAh/g
- 4C capacity*** - 132 mAh/g

*laser diffraction dry method for agglomerates and wet method for single-crystal materials

**half cell: LFP vs. Li metal (coin type cell), EC: 90/5/5, CCCV 2.5 V – 4.2 V, loading 5-6 mg/cm², electrolyte EC:EMC:MP=2:2:6 (v:v:v)



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