

BASF Battery Materials

BASF is a leading cathode active material (CAM) supplier to battery producers for electrified vehicles around the world. Research and development activities combined with acquisitions have delivered a unique technology portfolio for lithium-ion batteries.

Products

In today's electrified vehicles, predominantly lithium-ion batteries are used. Cathode active materials are one of the most important components that determine efficiency, reliability, costs, durability and the size of the lithium-ion battery. Their properties enable speed, acceleration and power – from compact cars and SUVs to buses and trucks.

BASF's HED™ product family includes a series of high-performance cathode active materials for lithium-ion batteries. Due to a very high degree of purity, the HED™ series have excellent product characteristics. With our proven ability to develop solutions jointly with customers, we can help them meet the evolving requirements of batteries in automotive drivetrains.

- HED™ Nickel Cobalt Aluminum (NCA)
- HED™ Nickel Cobalt Manganese Oxide (NCM)
- HED™ Manganese-rich cathode active materials

BASF also has a worldwide license to produce and market lithium-ion battery materials from Argonne National laboratories (ANL) – the global leader in Nickel Cobalt Manganese (NCM) technology as well as non-exclusive patent cross-license agreement with Umicore covering a broad range of cathode active materials (CAM) and their precursors (PCAM).

Global Presence

BASF Battery Materials is headquartered in Shanghai, China. It operates production plants and pilot plants, and has built up a strong R&D network with expert scientists located close to customers in all major regions:

Asia:

- Onoda, Japan (CAM production and R&D)
- Kitakyushu, Japan (CAM production)
- Changsha, China (CAM production and R&D)
- Shizuishi, China (PCAM and CAM production)

Europe:

- Ludwigshafen, Germany (R&D and pilot production)
- Schwarzheide, Germany (CAM production in construction)
- Harjavalta, Finland (PCAM production in construction)

North America:

- Battle Creek, Michigan/USA (CAM production)
- Elyria, Ohio, USA (CAM production)
- Beachwood, Ohio, USA (R&D)
- Bécancour, Quebec, Canada (planned production)

Ensure a resilient and sustainable metal supply chain



BASF provides solutions for high energy density CAM and high efficiency metal extraction for battery recycling. With partners along the value chain, we foster the production and use of responsibly produced recycled raw materials.

- | BASF solution | with Partners |
|---|--|
| <ul style="list-style-type: none"> ✓ PCAM and CAM ✓ Black mass processing ✓ Li and metal extraction ✓ Ni, Co, Mn purification | <ul style="list-style-type: none"> ✓ Battery pack collection ✓ Dismantling / shredding |

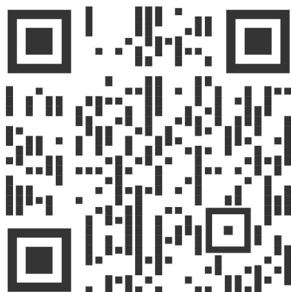
BASF participates in multi-stakeholder and industry initiatives to reinforce our efforts.



About Us

BASF's Catalysts division is the world's leading supplier of environmental and process catalysts, as well as high-performance battery materials and recycling solutions. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world and ensure efficient production of a wide variety of chemicals, plastics and other products, including advanced battery materials. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF's Catalysts division develops unique, proprietary solutions that drive customer success.

BASF - We create chemistry



Welcome to visit us on BASF Battery Materials website:

<http://catalysts.basf.com/batterymaterials>

Or contact us by: BatteryMaterialsCommunications@basf.com

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