



BASF Cathode Active Materials:

Tailored solutions addressing the market needs











BASF & BASF Battery Materials Overview ->

BASF CAM toolbox ->

Sustainability in CAM production →







Powering a net-zero future for e-mobility.







We are committed to reduce our absolute CO_2 emissions by 25% by 2030 & aim for net-zero emissions by 2050.

BASF & BASF BATTERY MATERIALS OVERVIEW







We started and will continue to invest in our battery materials business.

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BASF is a truly global player for CAM (Cathode Active Materials) R&D and production hubs close to our customers

EUROPE GREENFIELD

PRODUCTION UNDER

CONSTRUCTION

Acquiring land for planned battery materials production and recycling facility

Québec, Canada

CAM production facility

Battle Creek, Michigan, USA



CAM production facility

Elyria, Ohio, USA

KEY



Production facilities

R&D centers

BASF & BASF BATTERY MATERIALS OVERVIEW

CAM precursor production

Harjavalta, Finland

CAM production and recycling prototype plant

Schwarzheide, Germany

Beachwood, Ohio, USA

R&D center

Ludwigshafen, Germany

BASF and Eramet to assess nickel-cobalt refining complex in a feasibility study

BASF TODA Battery Materials, production facility and R&D center

Onoda, Japan

PRODUCTION IN CHINA

> **BASF Shanshan Battery Materials,** production facility and R&D center

China

Weda Bay, Indonesia





Battery Materials R&D at BASF: Locations



Changsha, P.R. China

Beachwood, OH, US

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Sanyo-Onoda,



Japan







Battery Materials R&D at BASF: Expertise



Product Development

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Product Research





Recycling

Process Technology



Next Generation Systems

Digitization







Battery Materials R&D at BASF: Expertise



Extensive **IP** portfolio



More than 50 commercial products

BASF & BASF BATTERY MATERIALS OVERVIEW

Experienced scientists for battery materials



Strong collaborations with academia and industry

415 YEARS

Over 15 years of experience in CAM development





BASF CAM toolbox and roadmap

Tune CAM technologies to address customers' needs

BASF CAM TOOLBOX

Ultra high-Ni **Energy density**

Bimodal / blend morphology

Single Crystal Safety / Durability



Co-free, lower Ni Mn-rich Recycling **Cost / Sustainability**





Partnering up globally to ensure a reliable and sustainable metal supply chain for our customers.



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11°C

Recycling to close the loop, which brings competitiveness to the customer as well as a reduced CO, footprint.

Batteries from scrapped vehicles can have a "2nd life" as stationary energy storage systems for applications such as solar energy.

Refining

Rnd Life

Applications

committed to a sustainable battery value chain

Electric Control Electric Vehicle

Production

Prod

ction

or Cell or Cell

Global footprint ensures customer proximity, increased competitiveness, and reduced carbon footprint for our products.

Consistent investments in assets and technology to ensure reliability and support cell and electric vehicle production customer growth.





