

New Hosokawa brand On: Extensive offer for manufacturers of lithium-ion batteries

Hosokawa Micron Group is increasing its focus on solutions for the manufacture and recycling of lithium-ion batteries. For this purpose, the group of companies has founded an international, group-wide competence team and created the brand "On". The new brand identifies a new product line for systems for the production of energy performance materials and enables interested parties from the battery industry to get started quickly and access the group's extensive range of solutions.

Combined fields of expertise of the Hosokawa Micron Group

Hosokawa Alpine's Chemical Division is a specialist in processing cathode materials, the Minerals Division has extensive experience in processing anode material and the Recycling Division focuses on in-house and end-of-life recycling. Hosokawa Micron B.V. in the Netherlands specialises in drying and mixing as well as coating. There is vast experience in processing lithium carbonate from salars at Hosokawa Micron Powder Systems in the USA, in containment at Hosokawa Micron Ltd. in the UK, and in bulk & material handling at Hosokawa Solids in Germany and Spain. Material grinding using the ACM-BC in a ceramic design is a core competence of the Japanese Hosokawa Micron Corporation.

"It was an obvious decision for us to pool together these versatile competences for our customers and unite this power in the new brand On", explains Marco Hauk, team leader for the project and Vice President Powder Segment at Hosokawa Alpine. "Today, manufacturers are striving to create compact batteries with high energy density, fast charging times and a long service life. We want to help our customers meet these requirements in the most effective way possible," says Hauk. To this end, On supports customers in material development and the perfection of raw and active materials from the supply of complete production facilities and systems all the way to recycling.

Raw material drying, grinding and coating for cathodes

Cathode materials such as nickel, manganese or cobalt oxide have to be dried in a continuous

process before grinding. The DMR Flash dryer from Hosokawa Micron B.V. makes it possible to dry active materials and achieve final moisture content levels of less than one percent. The ultra-fine grinding process for active powders creates smaller particles with a larger surface area in the next step. The special milling solutions from Hosokawa Alpine AG are the classifier mill ACM and the fluidised bed opposed jet mill AFG. The Cyclomix paddle mixer, the Modulomix modular paddle mixer or the Nauta conical screw mixer from Hosokawa Micron B.V. not only ensure a homogeneous mixture of materials, but also the optimum coating with carbon black and binders.

Efficient graphite rounding for anodes

In order to meet the rapidly increasing demand for graphite, highly efficient system concepts for the sustainable production of graphite materials are needed. The solution is to design coordinated systems for grinding and rounding graphite particles, which decisively improves the performance and efficiency of lithium-ion batteries. Hosokawa Alpine has developed a special machine for rounding natural graphite: the APR (Alpine Particle Rounder). For grinding and rounding synthetic graphite or petroleum coke, customers can rely on the Zirkoplex ZPS classifier mill.

Returning active materials to the process

Roughly ten percent of the coated cathode or anode films end up as scrap and have to be recycled. In particular, valuable active materials such as the NMC or LFP of the cathode films or the graphite-silicon mixtures of the anode films should be processed and directly recycled free of impurities. For this purpose, Hosokawa Alpine has developed a process that grinds the material scrap. This is done using the Rotoplex cutting mill. After pre-grinding, Hosokawa Alpine offers various solutions for delaminating the aluminium or copper film to detach the cathode or anode material from the film base. Depending on the process, almost all of the active material can be fed directly back into the process.

For more information on the On brand, click here:
www.on-hosokawa.com/

