

News Release

FAKUMA 2023: Efficient and sustainable plastics processing with surface solutions from Oerlikon Balzers

Balzers, Liechtenstein, October 5, 2023 – **Oerlikon Balzers, a technology brand of Oerlikon and a global leader in thin-film coatings, will present its latest solutions for plastics processing at FAKUMA, a world-leading trade fair for industrial plastics processing, taking place from October 17 to 21 in Friedrichshafen, Germany. The brand's surface technologies provide optimum protection against abrasive wear and corrosion in the plastics processing industries, in line with Oerlikon's sustainability strategy. These benefits help customers extend tool service life, ensure a more stable production process and deliver high-quality plastic products.**

In injection molding and extrusion, the surface finish of molds plays a key role in surface quality, productivity and efficiency during the manufacturing process. Significant production cost savings can be achieved with high-quality surface solutions by scheduling maintenance and avoiding unexpected downtimes, and the steps in plastics processing can be further optimized in combination with hot runner systems from the sister brand Oerlikon HRSflow.

BALINIT MAYURA – High-precision coating of non-ferrous molds for injection molding

The carbon-based coating makes an immediate visual impression with its distinctive bright rainbow colors, and it shows its true value in injection molding using fine tools made of non-ferrous metals and tool steels with a tempering temperature of less than 200°C. Its outstanding hardness (> 65 GPa) and smoothness minimize material adhesion and make it insensitive to chipping, while the extremely thin coating maintains the sharpness of the separating edges. BALINIT MAYURA has a low process temperature but high thermal and chemical stability and can withstand application temperatures of up to 500°C, while carbon coatings are usually limited to 350°C. It is suitable for all applications where both abrasion and adhesion occur. As a result, manufacturers benefit from longer tool service life and higher productivity in the manufacturing process.

BALINIT MOLDENA – Injection molding of recyclable plastics

BALINIT CROMA PLUS from Oerlikon Balzers, a PVD coating that protects molds from abrasive wear, corrosion and sticking, has proven its worth over many years of use in injection molding and extrusion for a wide range of plastics. Its successor, BALINIT MOLDENA, is the ideal protective coating for injection molding with aggressive glass fibers in plastics. It is increasingly used in lightweight components to conserve raw materials and further reduce emissions. The coating optimizes flow behavior, increases corrosion resistance, facilitates demolding and significantly reduces abrasive wear and deposit formation. This results in improved material utilization and longer maintenance intervals.

Extremely hard and only a few microns thin, BALINIT MOLDENA is designed for fully recycled materials to enable the circular economy and high flame-retardant materials. BALINIT MOLDENA has already proven itself in customer injection molding projects, where the scrap rate has been reduced to zero and the number of injections has been significantly increased while maintaining the same high level of product quality.

BALITHERM PRIMEFORM – Heat treatment for molds with brilliant surfaces

Mirror-polished plastic mold surfaces are very sensitive, and treatment with BALITHERM® PRIMEFORM is the ideal way to improve demolding, optimize process reliability and increase part quality. Areas subject to heavy wear and tear can be protected against scratches, environmental influences and inappropriate handling. BALITHERM PRIMEFORM diffusion treatment increases mold surface hardness up to 1400 HV, making molds significantly more robust and reducing buildup, spalling and edge embrittlement. It is ideal for plastic injection molds in the automotive, furniture, packaging and medical industries. Efficiency can be increased by as much as 60% by applying this treatment to injection molds.

Full polishing and coating service from Oerlikon Balzers

Oerlikon Balzers offers customers a full-service solution, including polishing and coating, which is perfectly tailored to forming molds. Depending on the application requirements, the company's highly qualified personnel perform line polishing using a specified grain size or high-gloss polishing – on request at the customer's site.

Optimized industrial plastics processing by Oerlikon

In industrial plastics processing, customers benefit from a perfectly coordinated manufacturing process, the latest Oerlikon HRSflow hot runner systems and Oerlikon Balzers surface solutions. The Oerlikon experts will be on hand in **Hall 1, Booth A1-1215/1216** at FAKUMA to advise visitors on the various combinations of solutions using hot runner systems, forming tool coatings and heat treatment solutions.



The carbon-based BALINIT MAYURA coating is suitable for all applications where both abrasion and adhesion occur. Its outstanding hardness and smoothness minimize material buildup on non-ferrous injection molding tools, while the extremely thin coating maintains the sharpness of the separating edges.



The BALINIT MOLDENA coating allows recyclable plastics to be fed back into the circular economy and reused. Optimized flow behavior and simplified demolding ensure a smooth and stable manufacturing process.

For more information, please contact:

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About Oerlikon Surface Solutions Division

Oerlikon is a leading global provider of surface and additive manufacturing solutions and services. The division offers an extensive portfolio of market-leading thin-film, thermal spray and additive manufacturing technologies, equipment, components and materials. Emission reduction in transportation, maximized longevity and performance of tools and components, increased efficiency and intelligent materials are hallmarks of its leadership. Pioneering technology for decades, the division serves customers with standardized and customized solutions across a worldwide network of more than 170 sites in 37 countries.

With its technology brands – Oerlikon Balzers, Oerlikon Metco and Oerlikon AM – Oerlikon's Surface Solutions division focuses on technologies and services that improve and maximize performance, function, design, reliability and sustainability, which are innovative, game-changing advantages for customers in the automotive, aviation, tooling, general industries, luxury, medical, semiconductors, power generation and oil & gas markets.

The division is part of the publicly listed Oerlikon Group (SIX: OERL), headquartered in Switzerland, which has 13000 employees and generated CHF 2.9 billion in revenue in 2022.
For further information: www.oerlikon.com/surface-solutions