

## cleanroom online banner partners



Hans J. Michael GmbH



Most people are unaware of just how widespread the use of sampling tubes is for analysis purposes in the medical sector. This involves vital issues such as the detection of occult blood in the faeces, which may indicate the presence of a bowel tumour. Such tests are also used to determine the presence of bacteria, viruses or parasites, as well as problems with bile flow. It should therefore now be clear to all that the apparatus used for stool sampling is at least as important as the analysis process itself. Because all components that come into contact with the substances to be analysed must be extremely clean and contamination-optimised during high-volume production. At Maier + Partner Kunststofftechnik GmbH this is performed in a clean room on Allrounders from Arburg.

## Complete assembly produced in clean room

- Maier + Partner produce components for laboratory diagnostics in high volumes
- Stool sampling tubes are produced in high volumes in a class 8 clean room
- Allrounder injection moulding technology also works problem-free in key positions



The stool sampling tube - which is patent-protected - consists of a transparent tube, a scraper funnel, a screw cap and a sampling stick with special metering tip. (Photo: Arburg)

In order to precisely implement this type of production, a differentiation is made between various types of clean rooms and zones. According to the German VDA 19.2 classification, the SaS2 clean room is defined as follows: the clean room must be separated from other plant areas by means of a permanent structural partition and feature cleanliness regulations with regard to material and personnel movements between the room and the adjacent areas. Whereas air conditioning is sufficient for an SaS2 clean room, in the case of an SaS3 clean room, a room-in-room system with airlocks and clean-air equipment is mandatory.

### Maier + Partner produces stool sampling tubes in clean room

The item belongs to the gastroenterology product group and consists of four individual components. In addition to the transparent tube for safe storage of the sample, these include a scraper funnel, a screw cap and a sampling stick with a special metering tip. Using this

item, the stool sample can not only be cleanly taken, but also safely stored free of external influences and transported to the laboratory for analysis. Managing Director Erich Maier describes the key product information as follows: „Millions of units of this assembly are in use globally for testing purposes. It ensures simple, quick and clean sampling and is much more convenient to handle compared to the previous „envelope“ system with multiple samples. The scraper funnel of the tube permits the taking of a precise amount of sample. The sampling system produced by us is the first worldwide that can be transported over long distances, by air for example, even when filled.

### Arburg machine technology optimally suited to production of innovative system

In comparison with existing systems, the implementation of new developments necessitated new moulds and complete start-up and running-in of this production process. The innovations include, for exa-

## Complete assembly produced in clean room

ample, automatic taking of the optimal sample amount by means of the scraper funnel, absolute air-tightness, also at low pressure in the case of air freight, as well as easy handling of the assembly in the laboratory. According to the specialists from Maier + Partner, the testing phase of the first moulds had already showed that the best results with regard to precision and reproducibility could be achieved on Arburg machines. For this reason, the Allrounders were then also used for high-volume production.

The production of all parts is performed on two hydraulic Allrounders with core pull control. All of the items are first series produced, then tested and preassembled before delivery to end customer R-Biopharm AG.

### Complex mould technology meets the requirements

Use in the medical sector places high demands on mould design. According to Werner Maier, member of the management team together with company founder Erich Maier, „all items have a very low part weight and are produced in multi-cavity moulds.“ The mould for production of the tubes is equipped with four cavities and, like the funnel mould, is filled via a hot-runner with gate. The machine on which the tubes are produced is, like the Allrounder for the production of the caps, also equipped with core pull control, which is required for unscrewing the internal and external threads. The four-cavity funnel and cap moulds are also equipped with a material-protecting hot-runner system and, in the case of the funnel, with a gate. Finally, the sampling stick is produced in an eight-cavity mould via a hot-runner with gate.

The four components are made from different PPs and a PE, which are all approved for medical applications. When asked for further details, Werner Maier explains: „Due to customer confidentiality, I cannot comment further on this subject. Unfortunately, the precise material types used cannot be named.“

### Cooperation between Maier + Partner and Arburg has existed for decades

The company, which was founded in 1972 by Erich Maier in Bempflingen (Germany), has had a close business relationship with Arburg from the outset. Originally operating mainly in the fields of packaging, measuring spoons and hygiene items, the business was expanded into the area of clean-room production, which brought about a new customer structure, particularly in the laboratory technology and diagnostics areas.

Allrounder injection moulding machines

were already being used before Maier + Partner entered the medical technology sector in 2005. In 2010, the production facility was partially converted, with 480 m<sup>2</sup> of the main plant in Bempflingen being transformed into a class 8 clean room according to ISO 14644/1.

Especially in the medical technology and laboratory equipment sectors, the two managing directors Erich and Werner Maier have high ambitions. Werner Maier says: „We are currently working on the certification of our production for medical products according to DIN ISO 13485. In this way, we wish to offer our customers in this sector added value in terms of service and support, which extends far beyond injection moulding.“

### Two production locations in Germany

The plastic items from Maier + Partner are mainly produced in large volumes and exclusively in Germany by a total of 80 employees at the two locations of Bempflingen (Swabia) and Crimmitschau (Saxony). A 2,100 m<sup>2</sup> production area is available for this purpose at the Swabian location and a further 3,700 m<sup>2</sup> in Saxony. The products and components are delivered to the food and luxury foodstuffs, medical technology and cosmetics industries, predominantly within Germany and Europe, in accordance with the most stringent deadline and quality requirements. Products include confectionary packaging, deodorant caps, laboratory equipment and measuring spoons, for example. Erich Maier says the following about his company's product range: „We not only work with the conventional machine arrangement and technology, but also with in-mould labelling (IML) and perform surface treatment on many of our components using plasma irradiation, in order to be able to perform downstream operations such as printing in a problem-free manner. We have therefore grown with the requirements of our customers.“

## Allrounders from Arburg used in key production

The total of twelve Allrounders used by Maier + Partner operate at all important key points in the company, including the clean room. The range of machine sizes covers distances between tie bars from 320 x 320 mm to 820 x 820 mm and clamping forces from 700 to 4,200 kN. Erich Maier looks back on consistently good times with Arburg: „Over the years, our experience with the machines has been really good. They are very reliable and low-maintenance and are characterised by high availability. Furthermore, their user-friendliness is very high thanks to the Selogica control system. These are all reasons for our use of the Allrounders throughout our production, because even in multi-shift operation – we operate in the fully continuous shift system on 340 days per annum – the technology has proved itself time and again.“

Here, the Allrounders operate conventionally as stand-alone solutions as well as with robotic systems for frequent product changes or integrated in complete production cells in the case of continuously-produced parts. When asked what he particularly appreciates about Arburg, Erich Maier answered promptly: „The people from Lossburg have always helped us with know-how as well as the right technology and servicing whenever needed. You don't forget that. That's why we feel so well supported by the company up to the present day, because the entire product range has always been very close to our requirements. This also applies to the applications technology consulting and customer service. They are always close at hand when they are needed. Particularly the Arburg Applications Technology has provided us with efficient assistance on several occasions, which makes us optimistic with regard to future cooperation. When planning new capital investments, were therefore able to focus more closely on the topics of automation and complex production cells, especially for the medical technology sector.“

ARBURG GmbH + Co KG D 72290 Loßburg



The components of the stool sampling tubes are produced on Allrounders in a SaS2 clean room. (Photo: Maier + Partner)

With the XStraw drinking straw, a new product from the company Dose Sipping Technology, taking medicine is now child's play and much more pleasant for seniors. Because drinking with a straw is ideal for both young and old.

# Drinking medicines with a straw instead of swallowing „bitter“ pills

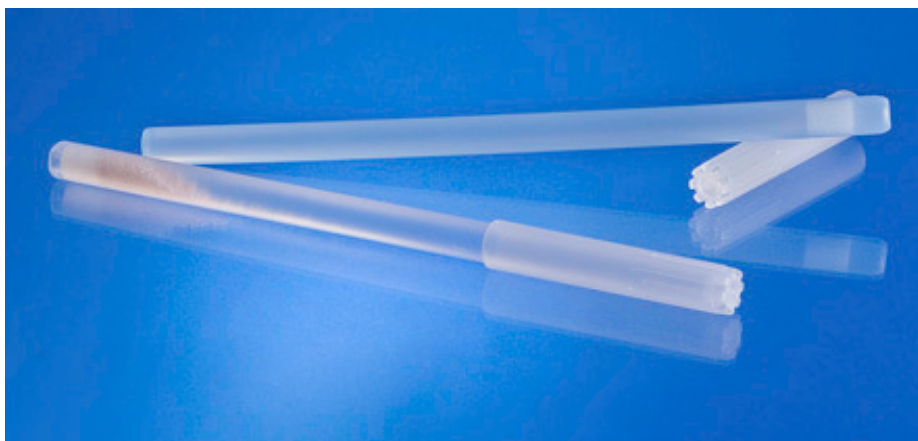
Many children pull a disgusted face when they have to take medicine. Which is understandable. Medicine often tastes bitter, they should swallow tablets without chewing them. Also elderly people who have trouble swallowing have problems taking medicine orally. Luckily, there's another way: With XStraw, the medicine tastes much better.

XStraw is a drinking straw filled with pellets. The patient cannot taste the tiny balls in the straw, and hardly feels them. He can enjoy his favourite drink with the XStraw, while at the same time taking the exact amount of medicine prescribed – without any unpleasant taste.

The drinking straw is filled with exactly the required dosage on fully automatic systems. Thanks to pre-dosing at the manufacturer, incorrect dosages are avoided. While the patient is drinking, a control filter moves upwards. This ensures that the right amount is being taken – There is also no danger of any being spilt.

With the XStraw, nobody has to sit holding a spoon any longer with an elderly patient or sweet-talk a child into taking medicine. The very simple use and individual selection of type of drink, and therefore of taste, makes the drinking straw very popular with patients. The XStraw is also available printed with brand name or dosage upon request for marketing purposes.

Thanks to perfectly matched components made of polypropylene and an air-tight packaging in an aluminium blister, special



XStraw – for a simple, safe and exact dosage of drugs in the form of Pellets.

storage conditions are not required.

## Dose Sipping Technology: Oral application system for pellets

DS Technology is the contact partner regarding the issue of filling licences. Customers receive comprehensive expertise and support for the development and manufacture of the multi-particulate dosage form („pellets“), delivery of the material components, implementation of the production process by the creation of suitable facilities, arrangement of licensing dossiers – and, upon request, contract filling.

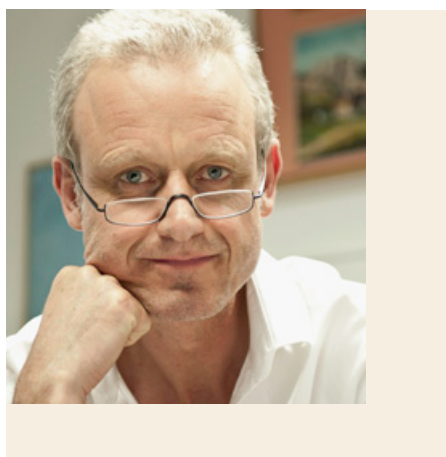
DS Technology, as system provider, offers the entire range of fully automated processing facilities for filling the XStraw

and individual packaging, as well as the cardboard.

DS Technology is a subsidiary of the company Harro Höfliger, the specialist for individually designed system solutions for the pharmaceutical industry.

Development and serial production is carried out jointly with Raumedic. The system supplier for polymer medical and pharmaceutical subassemblies owns all the necessary systems, tools and follow-up facilities for the fully automated production and packaging of the extruded drinking straw, and the exactly matched injection-moulded cap.

Harro Höfliger Verpackungsmaschinen GmbH  
71573 Allmersbach im Tal



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Reinhold Schuster



# Ecolab rebrands Shield Medicare Division

Ecolab has changed the name of its Shield Medicare division to Ecolab Contamination Control.

Andy Newsome, VP Global Contamination Control said: 'We have been making a steady transition to the new name since we acquired Shield Medicare in 2006, which now more accurately communicates our products and service offering, while strengthening the association with the Ecolab brand.'

'Over the last seven years the equity in the Shield Medicare brand has transferred to Ecolab, ensuring that our customers retained high service levels and continuity of product supply, which has given us the confidence to implement the name change.'

The Shield Medicare logo will now be phased out and replaced by the Ecolab logo, supported by the phrase 'Contamination Control'.

In conjunction with the change of name, a dedicated web site ([www.ecolabcc.com](http://www.ecolabcc.com)) has also been developed which includes full details of all products and services, along

with comprehensive information on the company's sterile manufacturing processes.

Since acquiring Shield Medicare, Ecolab has enabled it to develop into a global organisation with a solid reputation for innovation.

Significant investment has been made in a number of areas including the state-of-the-art manufacturing facility. The on-going development of the production site has been supported through a range of initiatives and continued investment, which have allowed the business to produce to the principles of cGMP.

These initiatives have also facilitated the development of superior manufacturing processes, which match those of their customers, a fact highlighted by the recent introduction of a Process Match assurance mark for the Klercide range of contamination control products.

Mr Newsome said: 'Ecolab Contamination Control has benefited massively being a part of such a large, supported organisation.'

In addition to major investment in manufacturing, we have been able to utilise the sizeable regulatory affairs and research and development resources to drive forward new products which conform to all industry standards.

'Our ability to react and adapt positively to the ever changing regulatory landscape and ensure compliance with future legislative changes, has kept us at the forefront of the contamination control industry.'

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## Cleanroom Validation

# Fog Generator for Air Flow Visualization

For the past 15 years, the Topas GmbH is well known for its reliable and efficient equipment for clean room validation, like aerosol generators, dilution systems, sampling probes, particle counters, qualification and validation software.

The devices range is now extended by the Fog Generator CFG 290. In Germany Leschke Messtechnik GmbH is the company's distributor.

The Condensation Fog Generator CFG 290 produces a very dense, good visible fog. The fog generator is suitable for visualization and tracking of air flows according to ISO 14644-3 Annex B7 and VDI 2083-3. The fog has a long holding time in rooms and is sterile, non-toxic and oil-free. The fogger is portable and especially designed for mobile use. The power supply is a polymer rechargeable battery.

The generator can be equipped with different distribution systems for the fog via a system connection. Typical application fields are:

- Air flow visualization in rooms and air conditioning facilities
- Especially suited for use in clean rooms
- Visual leakage test of installations and components
- Application as test aerosol, e.g. for filter testing

Characteristic of Fog Generator CFG 290 is a special vaporiser that ensures generation of fog within a short time (few seconds) after releasing of fog output. Heating power is only during time of generation of fog applied. The short response time supersedes



stand-by heating. That enables a long lifetime of the rechargeable battery and a long operating time during mobile use.

The fog outlet of inlet probe is equipped with a separator. There condensate droplets from the inlet probe and very big fog droplets are deposited.

By dint of an enforced feeding of condensation air (no injector effect) it is possible to control the fraction of air and different distribution systems for the fog can be applied.

The generator is capable to pressurize the fog distribution system with a sufficient overpressure in order to ensure a uniform escape of fog from multiple outlets into the environment.

Topas GmbH D 01237 Dresden

The world bestseller noraplan stone celebrates its 25th anniversary

# New colours and new surfaces for the anniversary

Classic product in a new look: For its 25th anniversary, the rubber floor covering noraplan stone from nora systems will be presenting itself with a revised colour range and two surface versions. This nora flooring with its characteristic granular design has now been on the market for a quarter of a century, and still ranks among the world's bestsellers. It is equally at home in rail vehicles and buses in New York, China, and São Paulo as in schools, universities, hospitals, old people's homes, and industry. In the meantime, over 20 million square metres of this rubber flooring have been sold – which is approximately the area of the Republic of Slovenia.

## All-rounder for all areas of application

“noraplan stone is an all-rounder for all areas of application and still ranks among the highest selling floorings from the noraplan series,” said noraplan Product Manager Dirk Oswald. “Over many years and even today there have been many attempts to copy this original design, and there are countless imitations on the market.” Yet nora systems repeatedly puts even its bestsellers to the test, modifying them to the current market requirements and trends. “As a result, we can now offer noraplan stone with the classical refractive surface structure as well as a new, smooth variant,” explained Oswald. Whereas the former meets above all the demand for special slip resistance, for instance in trains and school buildings, the smooth, extremely easy care version is ideal where high hygiene requirements must be fulfilled, for example in hospitals and medical practices. Whichever the case, the dispersed granulate is excellent at hiding dirt and dust so that the floor always looks clean even under heavy use by large numbers of people. Yet another advantage is presented by a further innovation. Instead of many colours, the makers are now using exclusively black and white granulate, for more calming and homogeneous effects.

## Trendy colours supplement classical hues

Also the colour range for noraplan was revised for the anniversary. In addition to timeless, discreet grey and beige tones, vivid colours like Kiwi Green or Aquamarine provide appealing accentuations in the room. Here, the product developers at nora systems have taken up current colour trends. The customer can now choose from a total



of twenty different colours in the standard range of refractive surface variants. According to nora Head of Design Dieter Rischer, the trend is currently returning to “daring, powerful colours”. Nevertheless: “The colour favoured by customers hasn't changed in all these years. Since the introduction of nora-



Dieter Rischer, the developer of noraplan stone



noraplan stone plain

plan stone, Stone Grey still tops the list,” said Oswald. Of course, this colour is also available for the new, smooth surface of noraplan stone. Stone Grey is only one of seven other different colours for this version.

Like all nora floor coverings, this classic product is also free of PVC, plasticisers, and halogens, for healthy indoor air. Its extremely dense sealed surface, of course, also makes noraplan stone highly durable. The classical structured version of this product is still available in an electrically dissipative and a noise reducing design.

Its diversity and continued, consistent refinement are the key to the success of this noraplan product, even after so many years: “noraplan stone,” explained product originator Rischer, “will lose none of its timelessness over the next 25 years either.”

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## Laborial presents BlauVET a new solution for laboratory animals' surgery

BlauVET is Laborial's most recent development and it represents a worldwide novelty. It consists on a workbench adapted to lab animals' surgery, by integrating in the working area a heating surface with a temperature control system, an inhaled anesthesia system, a gas exhaustion system, and a tactile computing device on the worktop. This solution aims to solve problems associated with surgery in laboratory animals such as the conservation of the animal's body temperature during surgery and during recovery without causing any burns, continuous anesthesia of the animal without the use of injectables or the use of computing devices in spaces where contamination represents a critical problem.

This brand new solution was developed in partnership with FEUP and UTAD under the R&TD project funded by the Operational Factors Competitiveness Program NSRF + COMPETE „Intellab II - Intelligence in Laboratories“, and combines two patent applications (patent pending) on technical solutions developed in Laborial. Built with materials resistant to the most aggressive reagents and disinfectants, it is a modular, flexible

and scalable solution that enables the integration of new „add-on“ features, adapting itself to new requirements and needs. It is a kind of solution extremely easy to clean and disinfect and is therefore highly aseptic.

To José Branco, CEO at Laborial, this solution is „another result of the investment and work consistency of the organization in RDI and, in this case, a very useful solution in laboratory animal surgery“.

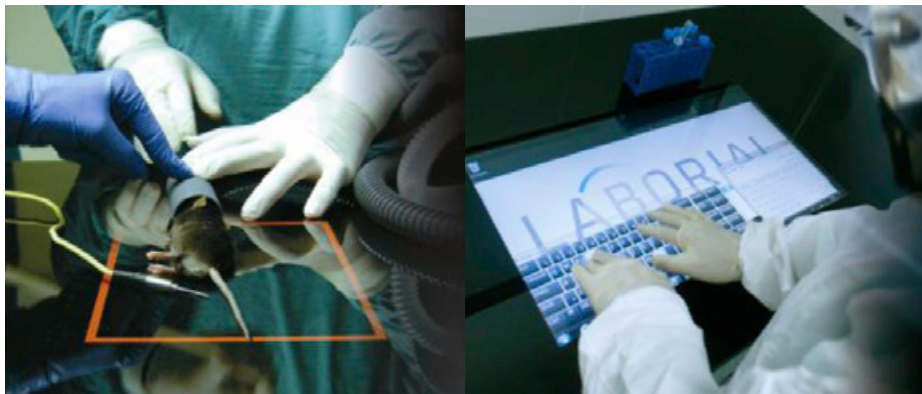
The „Intellab - Intelligence in Laboratories“ project was carried out between 2009 and 2012 and resulted in Advanlab, a moni-

ring and control system for laboratories, and also resulted in the acclaimed and awarded Blautouch, the interactive worktop for labs.

The first prototypes of BlauVET were presented at the 39th AFSTAL Colloquium, held between the 9th and 11th October 2013 in La Rochelle, France; also presented at the 26th Congress A3P, which took place between the 15th and 17th October 2013 in Espace Bellevue Biarritz, France; and at the 64th meeting of the AALAS, held between the 27th and 31st October 2013 in Baltimore, Maryland, USA.

The established business plan foresees sales in Europe through Laborial's network and in the United States and Canada by the EZ Systems dealer.

LABORIAL  
PT 4475-132 Maia





## Innovative laboratory cleanliness analyses and cleanliness research tasks at Fraunhofer IPA

# CleanLab 2020

Thanks to a cleanliness concept that is unique throughout the world, since mid-September 2013 the newly-designed laboratory tract CleanLab has extended the Fraunhofer IPA range of services regarding cleanliness and the evaluation of the cleanability of components, surfaces and liquids. In the course of this, the existing cleanroom - with a surface area of approx. 200 m<sup>2</sup> and currently the best air cleanliness class of Class 1 (according to ISO 14644-1) - has been linked to a graduated cleanliness-optimized cleanroom concept of ISO Class 3, 6 and 8 CleanLab laboratories. The Department of Ultra-clean Technologies and Micromanufacturing



was not only responsible for CleanLab's design but also for its realization.

With the new labs, the cleanliness demands of industries ranging from automotive engineering through medical and pharmaceutical industries right up to aerospace and semiconductor manufacturing can be processed by means of the comprehensive networking of cleaning and cleanliness validation. The latest automated light-optical, fluorescence and scanning electron microscopes, Raman spectrometer and 3-D computer tomographs supply the best answers not only to current but also future cleanliness issues.

Customers from industry will also be able to experience the new laboratory area directly thanks to the training courses that be held there. In a unique combination of theory and practice, Fraunhofer IPA employees working in contamination-critical areas will be holding seminars on technical cleanliness as well as offering a basic seminar about manufacturing under clean conditions.

#### Test environment:

- Turbulent cleanroom zones with air cleanliness classes 6 and 8 according to ISO 14644-1
- Laminar cleanroom zones with air clean-

liness classes 1 and 3 according to ISO 14644-1

#### Extraction equipment:

- Pressure-rinsing cabinet for components of different sizes, ranging from small to large
- Equipment for extraction by ultrasound
- Rinsing facility with high volume flows
- Separate test report for highly-clean components

#### Analysis equipment:

- Light microscope for the automated analysis of particles 5 µm and upwards
- Fluorescence microscope
- Scanning electron microscope for automated particle analysis
- Micro-CT for 3-D particle analysis
- Scanner for particle analysis
- Five-digit analysis scales

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Phillips-Medisize Corporation announces the start of production and completion of the 60,000 square feet (6,000 square meters) expansion to their Kontiolahti, Finland site.

## Phillips-Medisize Kontiolahti, Finland site expansion starts production

Production has already begun and will continue to ramp up on several new programs before the first of the year. The site focuses on the industrialization and production of inhalers, insulin pens, transfer devices and syringes.

The expansion includes 12,900 square feet (1,200 square meters) of Class 8 clean room manufacturing and assembly, and has space for the additional expansion for molding machines and assembly. New, state-of-the-art, high-speed automation lines enable the ramp up of multi-component, complex drug delivery devices from prototype to high-speed automated 24/7 mass production under competitive cost-structure. Total Kontiolahti numbers now include, multiple high-speed, fully automated assembly lines; fully automated printing lines; and several semi-automated lines.



Since 1990, the Kontiolahti team has been serving the pharmaceutical industry with strong engineering resources, along with injection molding and high-speed automation expertise to support complex, high volume programs. The in-house tooling area, coupled with experts on the pre-production team, plays a vital role in the product development and industrialization of the demanding drug delivery device projects.

Commenting on this plant expansion, Matt Jennings, President and CEO of Phillips-Medisize Corporation stated, "The

ISO 13485 multi-site QMS certified expansion brings our medical manufacturing square footage to over 1 million square feet (92,900 square meters), with 270,000 square feet (25,000 square meters) of clean room. This, coupled with extensive in-house tooling, state-of-the-art metrology, high volume automated assembly capabilities, innovative technologies, and creative people, upholds our mission to provide the highest level of satisfaction to our customers."

Phillips-Medisize Corporation  
CH 8309 Nürensdorf

**Technological leader for fans and electric motors invests more than €41 million**

## Ziehl-Abegg achieves record revenue in challenging environment

Ziehl-Abegg SE achieved outstanding results in 2013 despite the difficult economic climate around the world. Revenue increased by 5 percent and totalled a record €388 million. Business in Asia was looking particularly good. For the first time in the company's history, investments reached €41.4 million. This is founded largely on the establishment of a new site in Hohenlohe (southern Germany) for the drive technology division.

"The market is responding very well to our low-noise, energy-saving products", says CEO Peter Fenkl. This applies to both fan and drive technology. International awards, for instance from the German Federal Environment Agency and various environmental ministries, underline the pioneering role of the Künzelsau-based engineers when it comes to future-proof developments. "The Automotive division will considerably gather pace during the course of the year", promises Fenkl. The fact that major European bus and coach manufacturer VDL Bus & Coach is fitting its

new Citea Electric city buses with the Ziehl-Abegg ZAWheel gearless in-wheel hub motor will add an additional boost to business at the company's sites in the coming months.

"Record investments in both buildings and new products on the market have significantly burdened our results", says FEO Achim Curd Rägler. He adds that currency fluctuations have also had a considerably negative effect on results with the consequence that profits have fallen short of expectations. As was always the case, the company will not comment on any specific figures. The company's workforce has also increased in line with its revenue. At the end of last year, Ziehl-Abegg employed 3,250 people worldwide, with 1,800 employees at the five sites in Hohenlohe alone. "Despite an export rate of 70 percent, the majority of our workforce is employed in Germany", explains Rägler.

Ziehl-Abegg's worldwide production network is continuing to grow. The company's sites in Asia, the Americas and Australia are

being continuously enhanced to provide local assembly and production facilities. "This brings us even closer to our customers", explains CTO Norbert Schuster.

Revenue development in Asia has been considerably better than expected and business in the Americas is also growing.

The new site on the A6 motorway in Germany will be inaugurated in the second quarter of 2014. Ziehl-Abegg invested €27 million in this project alone. The company is currently setting up series production for the gearless wheel hub motor in the new development and we have already launched production of state-of-the-art lift motors.

In 2014, Ziehl-Abegg is expecting high, single-digit growth rates. This is reflected by the incoming orders, which, in 2014, are already ten percent above last year's rate.

Ziehl-Abegg SE  
D 74653 Künzelsau



# BOY has strong presence at Swiss Plastics

Together with its Swiss distributor Plastiversum, BOY succeeded in having a perfect trade fair appearance at Swiss Plastics. With four machines, BOY, the medium-sized enterprise, was the exhibitor who presented the most injection moulding machines during the Swiss plastic exhibition.

The BOY 35 E with a cleanroom application impressed the professional visitors in course of the special show Plast-Print-Pack. The BOY 35 E (350 kN clamping force), which was equipped with a white antistatic coating, produced insulin syringe protection caps in a 16-cavity mould in accordance with cleanroom class 7 laminar flow (according to ISO 14 644). To guarantee sterility, the protection caps were sealed in aseptic packaging immediately after removal from the mould. Printed with production data for potential retracing, the transparent bags were sealed air tight. For this, the packaging machine was positioned space-saving under the cantilevered clamping unit. Thus, this harmonious cleanroom concept was accomplished by an increased clearance height.

The E-Series servo-drive was impressive as well. "Quieter, more dynamic and with high energy saving potential, this drive technology provides a number of benefits

for users," explains Sascha Köppel, Managing Partner of Plastiversum AG about the advantages of the servo-motor pump drive. "The low heat generation of the servo-drive is a pleasant side effect, which makes more expensive and more complex cooling units unnecessary," states Köppel. Another highly regarded plus was the new Procan ALPHA<sup>®</sup> 2 control. The intuitive handling as well as the "smartphone wipe technique" of the multi-touch control were very well received by the attendees.

## Booth became injection moulding shop

Innovative in minimum space – that was the slogan of the Plastiversum booth, where three machines were shown. Like the ambience of an injection moulding shop, a BOY XS LSR application, the new BOY 25 E and a flexible injection unit for multi-component injection moulding were demonstrated.

These attractive applications especially the new BOY 25 E were the basis for numerous contacts with interested Swiss Plastics visitors. According to statements from Sascha Köppel, these meetings have a very high potential and he is optimistic to positively implement these opportunities in the



near future. Köppel already had success during the fair when the first machine was sold.

Dr. Boy GmbH & Co. KG  
D 53577 Neustadt-Ferthal



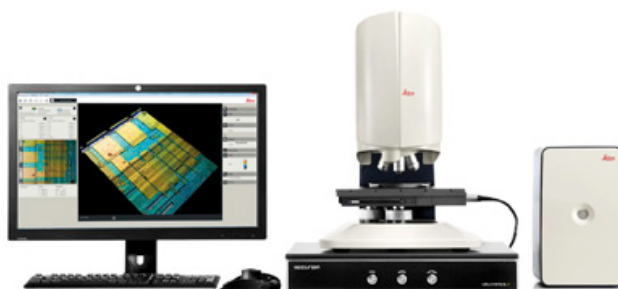
BOY 35 E at Swiss Plastics

Leica DCM8 Unites Advantages of High-Definition Confocal Microscopy and Interferometry in One Instrument

# Leica Microsystems Launches 3D Surface Metrology Solution

Leica Microsystems launches the Leica DCM8 for non-destructive three-dimensional surface profiling. The instrument is a combined confocal and interferometric optical profiler and therefore provides the benefits of both technologies: high definition confocal microscopy for high lateral resolution and interferometry to reach sub-nanometer vertical resolution. Both techniques can be important for surface analysis of materials and components across numerous research and production environments. Surfaces that are made up of intricate structures with highly sloping areas demand lateral resolution of a few microns. In contrast to this, polished super-smooth surfaces with critical micro peaks and valleys require vertical analysis on the nanometer scale.

With the Leica DCM8, users will be able to meet their specific surface metrology needs – with lateral resolution up to 140 nm via confocal microscopy and vertical resolution of up to 0.1 nm with interferometry. Stefan Motyka, Teamleader Product Management Team Industry, says: “The Leica DCM8 is a versatile and accurate profiler that saves time and money: Users will not have to swap instruments to be able to observe and measure the same sample with confocal and interferometry technology – they only need one instrument. Additionally, the user-friendly set-up and operation of the microscope saves effort and delivers accurate results very quickly and conveniently.”



The Leica DCM8 is a 3D surface metrology microscope that unites confocal microscopy and interferometry in one instrument.

In order to achieve such high resolution and speed, the Leica DCM8 employs confocal scanning technology without moving parts in the sensor head for enhanced reproducibility and stability. Switching between techniques is also fast and simple with only one mouse click required.

Christof Scherrer, IMPE, Winterthur, Switzerland, says: “We decided to buy the Leica DCM system due to its ability to operate as an optical microscope with bright-field, darkfield and confocal, as well as three interferometric modes. Flexibility is the most important factor for a diversified institute working in materials science such as ours.”

In addition to the different technologies for observation and analysis, the Leica DCM8 is an ideal instrument for accurate color documentation of samples. A wide

choice of high-quality Leica objectives together with four LED light sources – blue (460 nm), green (530 nm), red (630 nm), and white (centered 550 nm) – and an integrated CCD camera deliver true-to-life color images. The camera has a large field of view – and if this is not enough, the XY topography-stitching mode can be chosen to obtain a seamless, precise model of a larger area. The intuitive software enables users to simplify complicated 3D and 2D analyses and can be configured to their needs.

Leica Microsystems GmbH  
D 35578 Wetzlar



The Leica DCM8 makes swapping instruments unnecessary, offering both confocal and interferometry technology.

Adapter la salle blanche aux exigences produit

# Injection plastique

Autor: Philippe Roulet-Dubonnet, Key Account Manager, Union Plastic S.A.S. und Marc Kleinklaus, Exportleiter Union Plastic Deutschland

Dans l'industrie du dispositif médical, produire en salle blanche est un prérequis. Certains procédés de fabrication, comme la transformation de thermoplastiques, génèrent naturellement plus de particules que d'autres, et nécessitent un niveau supérieur de maîtrise environnementale. De ce fait, les sociétés d'injection plastique du secteur médical se sont donc équipées en zones propres, puis en salles blanches ISO8, et plus récemment en salles blanches ISO7 (classe C), cette surenchère étant souvent stimulée par des argumentaires marketing.

Ces surclassifications environnementales se trouvent parfois déconnectées des réalités économiques et logistiques d'une production médicale de volume, et il convient de rapprocher les niveaux de protection requis du besoin de maîtrise de la contamination effective des pièces, sur les plans particuliers et microbiologiques.

Union Plastic conçoit et fabrique des dispositifs médicaux en plastique injecté depuis 50 ans, et a mis en place de longue date des environnements contrôlés. En prenant des cas concrets issus de fabrications pour des applications telles que la dialyse, le diagnostic, la transfusion et l'administration de médicaments injectable, la société propose de éclairer le public sur ces questions.

## Analyse de risque produit

Comme beaucoup de spécifications du dispositif médical (DM), l'environnement de production est une donnée de sortie de l'analyse de risque produit. Dans sa phase d'identification, cette analyse doit intégrer a minima les risques suivants :

- L'application : voie parentérale, voie enté-



rale, type de contact patient (implantable, topique ou cutané), contact utilisateur... tous les DM n'exigent évidemment pas le même niveau de contamination particulaire.

- Le procédé de stérilisation ou de biodécontamination des pièces en aval, et la réduction qu'il permet.
- Les risques causés par les résidus post-stérilisation, tels que les pyrogènes pour les produits parentéraux, ou les nucléotides pour certains systèmes de diagnostic.

Il convient également de scinder la question en 2 catégories, les risques liés aux particules inertes et les problématiques de sécurité microbiologique.

## Contamination particulaire

Spécialement nuisible aux produits à usage parentéral ou implantable, cette contamination a généralement pour origine les nombreux éléments en mouvement des outillages, des presses et des périphériques, ainsi que les éventuels articles d'emballage et évidemment les interventions humaines. Elle peut être limitée par le choix de la presse (hydraulique ou électrique), le type de flux

d'air et évidemment l'automatisation du poste de travail.

Les mesures réalisées directement sur les pièces plastiques injectées sont très variables selon la charge électrostatique des matières, ce qui rend ces résultats difficilement généralisables. Le comptage particulaire aéroporté en opération reste la mesure de référence dans ce domaine.

Particularité intéressante, Union Plastic déduit de l'historique de ses comptages qu'une salle ISO9 bien qualifiée et maîtrisée sur le plan aéraulique peut approcher les performances d'une salle ISO 8. Ainsi, même dans des locaux présentant une forte densité de machines d'injection en opération, la société relève un taux de particules de 0,5µm en moyenne de 2.6 millions/m3 et en pic de 5,3 millions/m3 alors que la norme ISO14644-1 en exige 35 millions pour l'ISO9 et 3,5 millions pour l'ISO 8.

## Biocontamination

Les procédés d'injection portant les matières pendant plusieurs minutes à des températures supérieures à 230°C, les sources de contaminations microbiologiques sont nécessairement extérieures au process. La problématique se complique quand les pièces subissent des étapes d'assemblage multiples. Il est bien connu que la première source de contamination microbienne est l'homme, mais il ne faut pas négliger les risques dus aux emballages et aux éventuels fluides.

Les mesures de biocharge sur pièces sont renforcées dans le cadre de la maîtrise du processus de biodécontamination prévu en aval. Union Plastic a donc pu s'appuyer sur des bases de données importantes pour établir la synthèse présentée dans le Tableau 1. Ces valeurs cibles sont issues des données de qualification et de l'historique des productions sur chaque pièce. Les méthodes de prélèvement et de dénombrement ont été validées spécifiquement pour chaque pièce.

On constate que la classe environnementale a moins d'influence sur la biocharge que l'on pourrait le supposer. La différence entre salle ISO9 et salle ISO8 n'est pas vraiment significative. Les contaminations sont essentiellement liées aux interventions humaines requises dans le process et au type d'emballage.

En conclusion, il faut adapter la zone au produit, et non essayer de remplir des locaux préexistants, comme cela est souvent le cas. Union Plastic travaille en ce sens, en qualifiant et maîtrisant la totalité de ses environnements, pour faire avancer la sécurité produit tout en évitant les surcoûts liés à la surenchère environnementale.

UNION PLASTIC LE SOIN UP POUR LA SANTÉ		ISO 9	ISO 8	ISO 7
Biocharge en CFU/pièce* mesurée dans les salles blanches d'Union Plastic	Pièce injectée simple	<14 CFU	<8 CFU	<3 CFU
	Assemblage** de 2 pièces	<29 CFU	<17 CFU	<6 CFU
	Assemblage** de 3 pièces	<40 CFU	<22 CFU	<10 CFU
	Assemblage** de 4 pièces	<54 CFU	<32 CFU	<12 CFU

\* biocharge pour une pièce en polyoléfine de surface développée comprise entre 5000 et 10 000 mm², valeurs moyennes constatées par UP sur année, sur la base de prélèvements systématiques

\*\* assemblage automatisé, en ligne avec l'injection

Tableau 1: Cible de biocharge (bioburden) sur pièces en sortie de production

Union Plastic Deutschland  
D 82319 Starnberg





Blautouch is the first interactive worktop developed by Laborial Laboratory Solutions with a hygienic design, according to GMP guidelines, specifically for areas where contamination is critical, such as cleanrooms and other controlled environments.

## BlauTouch – an innovative concept for cleanrooms

Blautouch is a unique product worldwide with an ultra-clean technology concealed on the workbench without edges, cracks and areas of potential contamination which can bring significant benefits on cleanroom activities.

It consists on a work surface made of glass with an interactive area that runs through a touch detection system that al-

lows easy access to computing devices. This potentiates the removal of sources of contamination of work areas, including keyboards, mice and computers, as well as the removal of paper records and logbooks, also contributing to a great space saving.

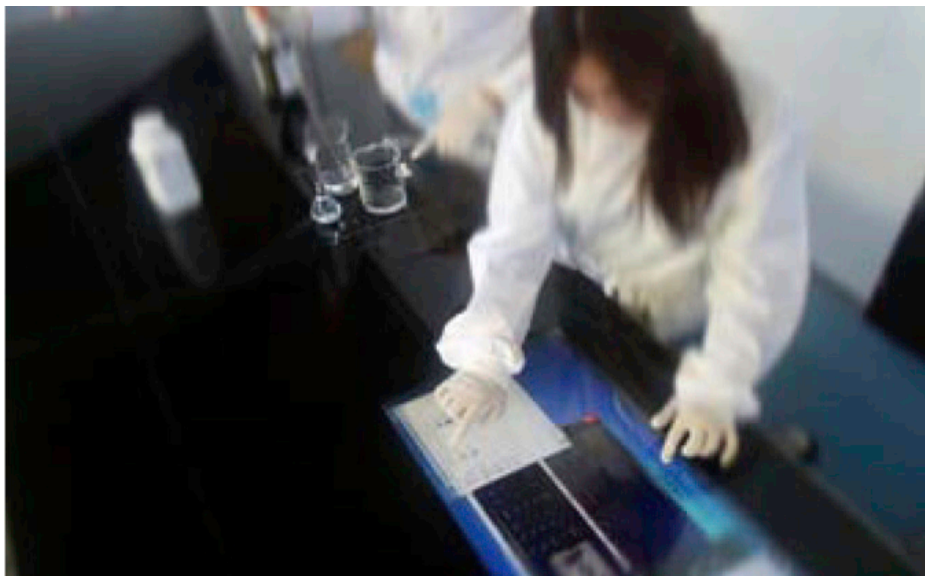
The continuous and smooth tempered glass surface also allows it to be easy to clean and disinfect, reducing significantly the risk

of biological, chemical and radioactive contamination with high chemical, mechanical and thermal resistance. The capacitive touch system allows the use either with fingers, gloves or capacitive pen, which allows keeping the gloves on while introducing data. The system is also immune to non-conductive objects, such as laboratory glassware, which allows the use of accessories on top of the workbench while accessing computer resources.

Blautouch is the perfect solution for facilities where both asepsis and access to information are critical to the laboratory's safety and productivity and Laborial wants this product to become the standard in critical areas and completely remove the computers, tablets, mice and keyboards on the laboratories workbenches, launching the first steps to the Laboratory of the Future.

Blautouch was awarded with the ContaminExpo Innovation Award in March 2013, in Paris and the Cleanroom Award in October 2013, in Frankfurt.

The Distribution Partner Europe (except France) is basan - the cleanroom division of VWR.



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# Silicon-Germanium Chip Sets New Speed Record

A research collaboration consisting of IHP-Innovations for High Performance Microelectronics in Germany and the Georgia Institute of Technology has demonstrated the world's fastest silicon-based device to date. The investigators operated a silicon-germanium (SiGe) transistor at 798 gigahertz (GHz) fMAX, exceeding the previous speed record for silicon-germanium chips by about 200 GHz.

Although these operating speeds were achieved at extremely cold temperatures, the research suggests that record speeds at room temperature aren't far off, said professor John D. Cressler, who led the research for Georgia Tech. Information about the research was published in February of 2014, by IEEE Electron Device Letters.

„The transistor we tested was a conservative design, and the results indicate that there is significant potential to achieve similar speeds at room temperature - which would enable potentially world-changing progress in high-data-rate wireless and wired communications, as well as signal-processing, imaging, sensing and radar applications,“ said Cressler, who holds the Schlumberger Chair in electronics in the Georgia Tech School of Electrical and Computer Engineering. „Moreover, I believe that these results also indicate that the goal of breaking the so-called ‚terahertz barrier‘ - meaning, achieving terahertz speeds in a robust and manufacturable silicon-germanium transistor -- is within reach.“

Meanwhile, Cressler added, the tested transistor itself could be practical as is for

certain cold-temperature applications. In particular, it could be used in its present form for demanding electronics applications in outer space, where temperatures can be extremely low.

IHP, a research center funded by the German government, designed and fabricated the device, a heterojunction bipolar transistor (HBT) made from a nanoscale SiGe alloy embedded within a silicon transistor. Cressler and his Georgia Tech team, including graduate students Partha S. Chakraborty, Adilson Cordoso and Brian R. Wier, performed the exacting work of analyzing, testing and evaluating the novel transistor.

„The record low temperature results show the potential for further increasing the transistor speed toward THz at room temperature. This could help enable applications of Si-based technologies in areas in which compound semiconductor technologies are dominant today. At IHP, B. Heinemann, H. Rucker, and A. Fox supported by the whole technology team working to develop the next THz transistor generation,“ according to Bernd Tillack, who is leading the technology department at IHP in Frankfurt (Oder), Germany.

Silicon, a material used in the manufacture of most modern microchips, is not competitive with other materials when it comes to the extremely high performance levels needed for certain types of emerging wireless and wired communications, signal processing, radar and other applications. Certain highly specialized and costly materials

- such as indium phosphide, gallium arsenide and gallium nitride - presently dominate these highly demanding application areas.

But silicon-germanium changes this situation. In SiGe technology, small amounts of germanium are introduced into silicon wafers at the atomic scale during the standard manufacturing process, boosting performance substantially.

The result is cutting-edge silicon-germanium devices such as the IHP Microelectronics 800 GHz transistor. Such designs combine SiGe's extremely high performance with silicon's traditional advantages -- low cost, high yield, smaller size and high levels of integration and manufacturability -- making silicon with added germanium highly competitive with the other materials.

Cressler and his team demonstrated the 800 GHz transistor speed at 4.3 Kelvins (452 degrees below zero, Fahrenheit). This transistor has a breakdown voltage of 1.7 V, a value which is adequate for most intended applications.

The 800 GHz transistor was manufactured using IHP's 130-nanometer BiCMOS process, which has a cost advantage compared with today's highly-scaled CMOS technologies. This 130 nm SiGe BiCMOS process is offered by IHP in a multi-project wafer foundry service.

The Georgia Tech team used liquid helium to achieve the extremely low cryogenic temperatures of 4.3 Kelvins in achieving the observed 798 GHz speeds. „When we tested the IHP 800 GHz transistor at room temperature during our evaluation, it operated at 417 GHz,“ Cressler said. „At that speed, it's already faster than 98 percent of all the transistors available right now.“

IHP GmbH

D 15236 Frankfurt (Oder)

Test sieves are test and measuring devices which, according to DIN EN ISO 9001, must be certified, and regularly monitored and checked in operation. For this reason, Haver / Boecker as a manufacturer of this measuring equipment provides test certificates conforming to standards for ongoing regulation-compliant quality assurance. (analysis sieves), it is also necessary to be able to check such measurement equipment.

## First accredited calibration laboratory for test sieves with metal woven wire cloth in Germany

For decades we have been measuring analysis sieves and metal woven mesh according to norms in our factory laboratory. Here aperture size and wire diameter have been documented. In order to provide proof that these measurements were carried out correctly, the Wire Weaving Division have gone a step further. The Deutsche Akkreditierungsstelle GmbH - DakKS - (German Accreditation Office) has confirmed that Haver / Boecker may operate its laboratory as an accredited calibration facility. Accreditation was carried out according to the DIN EN ISO / IEC 17025 norm called "General requirements for the competence of calibration and testing laboratories". The company offers the first accredited calibration laboratory in Germany in accordance to this norm.

This means the increasing demands for product and service quality from consumers, companies, and authorities are being met. Analysis sieves are impacted in two ways: 1) their manufacturing process is

## First accredited calibration laboratory for test sieves with metal woven wire cloth in Germany

subject to tightly defined and normed tolerances, and 2) they are used as test instruments for quality-relevant positions within the production process for goods. Thus the check of analysis sieves is becoming increasingly important. In practice there are various checking scenarios. In general the idea that it is better to have the test instrument analysis sieves checked before its first time use, and then checked regularly (mostly on an annual basis), has more or less become standard practice. The requirements placed on the quality of these sieve checks are often not particularly well defined. The selection of the necessary test is further complicated by a series of designations like "inspection", "certification", "calibration", especially when the applicable norms do not clearly differentiate these from each other. Often every-day practice is the only criterion with which the user distinguishes the differences between each individual test procedure.

In order to be able to fulfill the DIN EN ISO / IEC 17025 norms, the laboratory of the Wire Weaving Division has implemented comprehensive measures. Among them is a newly established management system for the calibration laboratory. All work processes were newly formulated and documented in the process and work instructions. Modern measurement technology operated by highly specialized experts in completely acclimatized rooms, and an optimized training system were other milestones along the path to accreditation.

The calibration certificates for wire-mesh analysis sieves issued by Haver / Boecker serve as proof of conformance to national norms and are recognized internationally by the signatory states within the scope of conventions (EA, ILAC, etc.).

Haver & Boecker D 59302 Oelde

## Market research confirms Cherwell as a leading prepared microbiological media supplier

# Microbiologists Value Flexibility and Quality in Redipor® Prepared Media Products

Cherwell Laboratories Ltd's reputation as a leading supplier of high-quality prepared microbiological media has been endorsed following a recent market research study. Results from this demonstrate that Cherwell are highly regarded by both customers and prospective customers in all areas, including Redipor® product quality, flexibility of supply, reliability and efficiency at dealing with any customer's problem.

Cherwell commissioned an in depth market research project to gain a better understanding of the prepared microbiological

media market and the needs of their customers. Companies were invited to complete an anonymous online questionnaire regarding their current and expected usage of prepared media, plus their perceptions of the main suppliers within the market.

Notably, those surveyed rated Cherwell as the top 'go-to' company for bespoke prepared media solutions and also the most flexible with regards to volumes ordered. These key findings endorse Cherwell's Redipor offering, which encompasses a comprehensive selection of media types and quantities to

accommodate a broad range of microbiological testing needs. This means Cherwell can provide small batches for specialist, low volume users plus bespoke solutions to meet specific requirements, alongside high volume environmental monitoring products.

Andy Whittard, Managing Director, Cherwell Laboratories commented, "The market research confirms Cherwell's reputation within the industry for offering high quality prepared media products with the flexibility to meet specific customer requirements. We are committed to ensuring that this flexibility and our level of customer service is maintained as we continue to grow."

He added, "As a thank you to everyone who participated in the market research, Cherwell have made a donation to Thames Valley & Chiltern Air Ambulance."

To sustain customer satisfaction levels and meet the increasing demand for Redipor prepared media, Cherwell are further increasing their production capabilities with an extension to their cleanroom production suite. The work, scheduled for completion during Spring 2014, will provide more production space and enable investment in additional production equipment and trained staff to ensure demand can be met whilst retaining Cherwell's much recognised flexibility.



Cherwell Laboratories Ltd  
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# Ecolab Contamination Control launches new website

Ecolab Contamination Control has launched a new website ([www.ecolabcc.com](http://www.ecolabcc.com)), as part of a rebranding exercise.

It follows the recent announcement that Ecolab is changing the name of its Shield Medicare division, to Ecolab Contamination Control.

James Tucker, Marketing Director at Ecolab Contamination Control said: 'The website is a critical element of our overall communication strategy. It has been designed to provide customers with a single, easy to use, point of reference for all aspects of the business and make the brand as accessible as possible.'

The site contains comprehensive details of the entire range of contamination control products, supported by pictures, explanations for usage and all relevant legislative information.

Meanwhile, a secure customer login area includes the highly detailed technical files, product certificates and up to date material safety data sheets for all countries. Coming soon will be a range of best practice videos to provide help and advice for cleanroom operators.



To request access to the secure customer area of the site, please log on to [www.ecolabcc.com](http://www.ecolabcc.com) and follow the link.

Mr Tucker said: 'The website puts our entire product range at the finger tips of customers whenever and wherever they need it and allows for quick and simple navigation.'

'We know from the requests we receive for copies of our technical files on CD, that giving customers access to comprehensive information in a range of formats is essential and the new website will only enhance our

capabilities to serve our customers even better.'

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# Vaisala selected as Weather-Ready Nation Ambassador(TM)

Vaisala has been selected as a National Oceanic and Atmospheric Administration (NOAA) Weather-Ready Nation Ambassador(TM). As one of the first companies to join the Weather-Ready Nation (WRN), Vaisala is privileged to work with NOAA and the National Weather Service (NWS) on this important initiative. Embracing the concept of a collaborative Weather Enterprise, the Weather-Ready Nation brings together government organizations, private enterprise and academia in an effort to build communities that are ready, responsive and resilient to severe weather events.

Extreme weather events, including snowstorms, flooding, and record temperatures are affecting the lives and livelihoods of millions across the United States, at a cost of billions of dollars. The impact of these extreme weather events can be mitigated with the help of accurate measurement systems, reliable observations as well as timely fore-

casting and prediction.

Through the work that Vaisala does and the technology it innovates, the company actively touches the lives of millions of people all around the world every day. Accurate meteorological observation systems, such as Vaisala's weather radars, sounding systems, automatic weather stations and lightning detection systems make it possible to generate early warnings, which help mitigate the impacts of extreme weather events. At Vaisala, we truly believe in observations for a better world.

Vaisala is committed to working with NOAA and other WRN Ambassadors to strengthen national resilience against extreme weather in the United States. 'In practice, being a WRN Ambassador incorporates the promotion of WRN messages, increased collaboration with NOAA, sharing success stories with partners, as well as serving as an example to others through our actions and

behavior' states Scott Sternberg, President of Vaisala Inc. 'By increasing the nation's weather-readiness, the country will be prepared to protect, mitigate, respond to and recover from weather-related disasters.'

'Ambassadors are a critical part of our effort to build a Weather-Ready Nation,' said NOAA National Weather Service Director Louis Uccellini. 'Vaisala has long been a valued partner, providing NOAA National Weather Service weather observation technology which help us deliver lifesaving information to the public to prepare and respond to extreme weather events.'

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## Opening of pharma laboratory in Schopfheim

# Bosch Pharma Solid Symposium 2014: International conference on solid pharmaceuticals

- Two-day industry meeting with around 100 participants
- New center of competence for development and process optimization
- Expert lectures and discussions from research and industry

On February 19 and 20, 2014, Bosch Packaging Technology, a leading supplier of process and packaging technology, held its Pharma Solid Symposium in Schopfheim, Germany, which gave occasion for the opening of the pharmaceutical laboratory. The international conference offered industry experts an opportunity to comprehensively inform themselves about current trends and developments in the manufacturing and processing of solid dosage forms. "We can look back on two exciting and successful days, during which top-class speakers provided our international guests with up-to-date industry knowledge. In addition, our diversified program provided sufficient room for personal exchange, as well as the chance to get to know our site in Schopfheim better," explained general manager Martin Gross.

### Inauguration of new laboratory

Martin Gross and his guests inaugurated the new laboratory during a tour of the premises on the first day of the event. The new facility combines the pharmaceutical portfolio focus areas of the German Bosch Packaging Technology sites Schopfheim and Waiblingen with the British site Knowsley in one center of competence. "We have consistently expanded our laboratory over the past years. Now we offer our customers the appropriate services and machines for all stages - from development to production of their solid pharmaceuticals," Martin Gross

explained. Ten machines from the Hüttlin and Manesty product portfolio, as well as from the site in Waiblingen, are available for tests in an area of more than 300 square meters. The wide range of equipment covers all process steps in the production of solid dosage forms: from mixing, drying, granulating and coating of fine particles and pellets to pressing and coating of tablets and filling of capsules.

Bosch Packaging Technology's pharmaceutical laboratory concept enables customers to test machines and formulations on-site. Bosch experts are on hand to support them during the entire development process of their pharmaceuticals, right through to the start of production and beyond. Additional laboratories for trials and feasibility studies are being established at different sites around the world. In the recently opened customer center in Waiblingen, experts assist pharmaceutical manufacturers in familiarizing with Bosch capsule filling machines.

### Concentrated expert knowledge

The second day of the symposium focused on lectures and a panel discussion. After the welcome address by Ralf Schmied, director of product area Pharma Solid in Waiblingen, representatives of leading pharmaceutical companies and renowned research institutes reported on new procedures and challenges in the production of solid dosage forms. Speakers included dele-

Solidlab 2: joint development by Hüttlin and Manesty: The compact and modular machine combines several process steps in a small space: drying, granulating and coating in the fluid bed, as well as tablet coating in the coater.



The extremely flexible GKF 702 capsule filling machine is suitable for all standard filling techniques

gates of Hoffmann LaRoche, Capsugel and Excella, as well as the Heinrich Heine University of Düsseldorf, the Johannes Gutenberg University of Mainz, and the Ernst Moritz Arndt University of Greifswald.

The speakers explored a range of new trends and developments in the fields of micro dosing, nanoformulation, biopharmaceuticals and containment. The subsequent panel discussion, moderated by Dr. Martin Opitz, senior market expert from Bosch Packaging Technology, provided the opportunity to debate and reflect the presented topics. "We are very satisfied with the outcome of the Bosch Pharma Solid Symposium 2014," Dr. Martin Opitz emphasized. "The active participation in the discussions showed how exciting it can be to look upon current topics from different perspectives. Once again, our guests also gave us valuable food for thought."

Bosch Packaging Technology  
D 74554 Crailsheim



The X line 1000R - large system for processing reactive materials within a closed system with automatic powder transport and consistent separation of the process chamber and the handling area (Photo: Concept Laser GmbH)

## Additive manufacturing: new applications for large components and quick construction rates prove highly popular

# A first: Concept Laser introduces the largest component produced to date using the additive process

The approaches of additive manufacturing are currently revolutionizing how development engineers think, while also awakening new desires. For instance, XXL-sized 3D components are currently a trend. The large-format X line 1000R system, which was developed jointly with the Fraunhofer Institute for Laser Technology (ILT) in Aachen, is proving to be a step in the right development direction: into the new dimensions of industrial 3D printing using metals. At the core of the system are optics developed by ILT with a 1,000-watt laser. The jump from the 400-watt class into this new dimension represents a quantum leap in terms of the component sizes and construction rates that can be achieved. After a successful beta development phase, Concept Laser is now presenting the X line 1000R as a series model featuring the largest build envelope now available on the market (630 x 400 x 500 mm).

The X line 1000R was developed for tool-less manufacturing of large functional components and technical prototypes with identical material properties to series-production assemblies. The key component in the X line 1000R is a high-performance laser in the kilowatt range that enables significant productivity increases compared to other commercially available laser melting systems.

### Considerably improved construction speed

The X line 1000R is primarily intended for the automotive industry and aerospace sector. In terms of materials, the system

has proven versatile in compatibility: while the automotive industry primarily uses aluminum components for lightweight construction, aerospace applications aim for high-performance materials, such as titanium. From a cost perspective, the possible construction speeds are highly desirable for both industries: while an average system achieves build rates of 10-15 cm<sup>3</sup>/h, the X line 1000R delivers up to 65 cm<sup>3</sup>/h (equivalent to a 650% increase). Thanks to patented quality management modules like QMcoating and QMmelt pool from Concept Laser, component quality remains completely intact despite the highly dynamic process.

### Conclusion of the beta development phase

After the prototype was presented at Euromold 2012, the focus was on developing the customized mechanical and control engineering; in 2013, the Concept Laser developers concentrated more fully on the actual construction process and material qualification. Dr. Florian Bechmann, Head of Development at Concept Laser: „The agenda for the beta phase included optimization of process parameters and intensive material qualification in order to prepare the X line 1000R for serial production.“ It also included careful temperature control of the build envelope in order to prevent distortion of „oversize“ components. Concept Laser reports the maximum component length as 740 mm.

### Largest part presented - initial references highlight the design possibilities

The dimensions of the gear part made of aluminum are considerable: 474 x 367 x 480 mm (not including the height of the build platform). It is currently the largest metal component produced to date using the powder bed-based laser melting process. „When hybrid construction methods are used, geometries can be created that are somewhat above the „basic“ construction area dimensions, if necessary, with heights up to 540 mm,“ says Dr. Florian Bechmann. As a series model, the X line 1000R allows for a significant increase in construction rates, improved surface quality, high reproducibility and system reliability thanks to process



## A first: Concept Laser introduces the largest component produced to date using the additive process

monitoring, as well as qualification of a wide range of powder materials for a variety of applications.

### New applications devised by the automotive industry

Aluminum alloys (AL) are currently popular among automotive industry customers who work in the XXL range. The material is attractive to development departments for application in lightweight automotive construction. The goal is to replace cost-intensive sand and die casting applications in early development phases. Furthermore, the LaserCUSING process makes it possible to construct lightweight structures with high rigidity and weight-optimized geometries – with virtually no design restrictions.



	M2 cusing system	X line 1000R system	Increase in %
<b>Build envelope</b>	250 x 250 x 280 mm <sup>3</sup>	630 x 400 x 500 mm <sup>3</sup>	
<b>Build volume</b>	18 liters	125 liters	700
<b>max. part length</b>	350 mm	740 mm	210
<b>max. part weight</b>	144 kg	1,000 kg	700
<b>Powder storage</b>	18 liters	up to 400 liters per part	2,000
<b>Laser power</b>	400 W	1,000 W	250
<b>potential build rate</b>	10-15 cm <sup>3</sup> /h	65 cm <sup>3</sup> /h	650
<b>Investment</b>	Factor 1	Factor 3	300

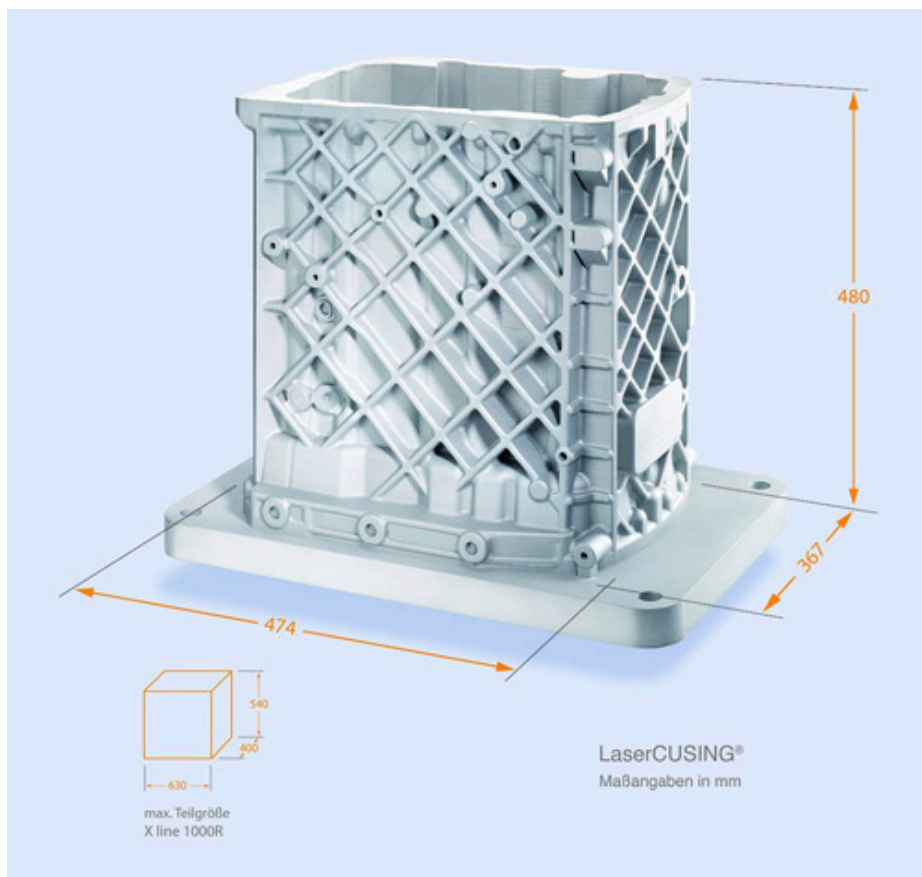
Table 1: Comparative values for a large vs. medium-format system



Dr. Florian Bechmann, Head of Development at Concept Laser: „The separation of the process chamber and the handling area is characteristic of Concept Laser and is a relevant feature in terms of safety and quality. This is a fundamental characteristic of the X line 1000R as well.“ (Photo: Concept Laser GmbH)

### Aerospace: a driver of development

An increased need for applications using titanium and nickel-based alloys can be discerned on the horizon. These material classes are primarily attractive for the extreme requirements of the aerospace sector. The X line 1000R therefore features a closed system for safe process and powder management compliant with the strict ATEX directives. „The separation of the process chamber and the handling area is characteristic of Concept Laser and is a relevant feature in terms of safety and quality. This is a fundamental characteristic of the X line 1000R as well,“ comments Dr. Florian Bechmann. New applications are currently being devised by development engineers. In addition to drive technology components, these also include test beds in space flight and turbine parts in power plant engineering and aircraft construction. Another interesting application is that LaserCUSING can also be used to repair turbines: a worn-out turbine blade can be mended using laser melting. This means the material of the turbine part, which is still good, can begin a new lifecycle – quickly and affordably.



The largest part produced using additive manufacturing: a gear housing made of aluminum (dimensions: x: 474mm; y: 367mm; z: 480m – excluding build platform height) is constructed from powder at rates of > 50cm<sup>3</sup>/h. (Photo: Concept Laser GmbH)

Arburg est précurseur en matière d'efficacité énergétique. Ce thème envisagé dans sa globalité et au niveau mondial est ancré dans la philosophie de l'entreprise depuis de nombreuses années. Une consommation d'énergie réduite et une utilisation raisonnée des ressources constituent des aspects cruciaux pour tous les développements et investissements. La campagne d'économies d'énergie menée en France en partenariat avec le fournisseur d'énergie EDF Entreprises est le tout dernier exemple illustrant les activités d'Arburg en relation avec l'efficacité énergétique.

## Campagne EDF et Arburg : les économies d'énergie sont récompensées

- **France : campagne d'économies d'énergie**
- **Entreprises d'injection plastique : prime accordée pour les presses à injecter Allrounder éco-énergétiques**
- **Automatisation : Le plus d'Arburg**

Le fournisseur d'énergie EDF Entreprises verse en France une prime significative à l'achat d'une presse à injecter électrique ou hybride à faible consommation d'énergie. Le Certificat d'Economie d'Énergie CEE transposé en 2005 dans la législation en est la base et a pour but de réduire significativement la consommation d'énergie industrielle. Il existe depuis fin 2013 un Certificat d'Economie d'Énergie spécifiquement élaboré pour les presses à injecter électriques ou hybrides.

### La France subventionne les machines éco-énergétiques

Marc Schuh, Directeur Général d'Arburg France, s'est beaucoup investi dans ce projet et a travaillé en collaboration avec les experts en énergie d'EDF Entreprises pour définir les conditions d'une prime à l'achat, dont les entreprises d'injection plastique bénéficieront en France. Cette subvention

s'applique aux presses Allrounder électriques et hybrides des séries Alldrive, Edrive et H-drive qui portent toutes le label d'efficacité énergétique e<sup>2</sup>.

« Grâce à la coopération avec EDF Entreprises, nous faisons la promotion des presses électriques et hybrides qui consomment jusqu'à 50 % d'énergie en moins que la version hydraulique. » Cela permet aussi à EDF Entreprises de remplir les objectifs d'économies d'énergie fixés par la loi. « Nous aidons les clients qui investissent dans des presses électriques ou hybrides éco-énergétiques avec une prime pouvant représenter 5 à 10 pour cent du prix d'achat », explique Marc Gendron, Directeur des Départements Services et Partenariats chez EDF Entreprises en France. La prime dépend du type de machine, de la puissance installée et des conditions d'utilisation du matériel. A titre d'exemple, pour une ALLROUNDER 570 A 1600-1300, la prime peut s'élever à 7 400 euros. Ce dispositif est en place au minimum

jusqu'au 31 décembre 2014, à condition que la machine soit installée en France.

### Le plus d'ARBURG

« En complément de la campagne EDF, nous proposons cette année d'autres incitations pour investir dans des machines permettant d'améliorer l'efficacité de la production », souligne Marc Schuh : « Chaque client achetant une presse à injecter Allrounder subventionnée par EDF Entreprises bénéficie en plus gratuitement de notre part de la préparation à l'utilisation d'un pique-carottes Integralpicker ou d'un système de robot 3 axes Multilift. »

### Événements régionaux d'information

L'entreprise de distribution d'électricité EDF, la Fédération de la Plasturgie et l'ACDI organisent en avril 2014 plusieurs événements régionaux en France visant à informer les clients en détail sur les possibilités d'économiser l'énergie et sur les spécificités de la prime.

ARBURG GmbH + Co KG D 72290 Loßburg

*Campagne d'économies d'énergie en France (de gauche à droite) : Marc Schuh (Directeur Général d'Arburg France), Marc Gendron (Directeur des Départements Services et Partenariats chez EDF) et Maxime Dupont (ingénieur R&D chez EDF), sont heureux de pouvoir aider les clients à investir dans des presses à injecter électriques ou hybrides éco-énergétiques en 2014. (Photo: Arburg)*



## Silver Investment Partners supports ongoing growth strategy

# PTF Group acquires Hitega Präzisionsmechanik GmbH

- Next milestone reached in PTF's ongoing growth strategy
- Complementary customer and product offering
- Second acquisition since Silver Investment Partners' initial investment



PTF Holding GmbH (PTF), a leading medium sized manufacturer of complex CNC mechanical high-tech precision parts and assemblies, has acquired Hitega Präzisionsmechanik GmbH (Hitega) with the support of its majority owner Silver Investment Partners (SIP). Hitega is a manufacturer of smaller series of high precision CNC milled and turned parts and assemblies.

In future, Hitega will be run as an independent company under the umbrella of PTF Holding, also comprising PTF Pfüller GmbH & Co. KG, Pfüller Precision Technology (Suzhou) Co., Ltd., PTF German Precision Technology Inc. and Heinz Kehl & Sohn GmbH. The PTF Group expects sales of over EUR 25 million in 2014 following the acquisition. Total Group employees will increase to 246 with further recruitment planned. Anton Hauner, the current owner of Hitega, will continue to support the company as a Technical Director for a transitional period. The acquisition of Hitega is financed by PTF and SIP from internal funds as well as bank debt. The parties have agreed to not disclose the purchase price.

"Hitega and PTF fit together perfectly due to their complementary product ranges. Hitega's focus on prototypes and small series, their state-of-the-art production facility and a customer portfolio covering promising sectors will enable us to develop new markets together", says Oliver F. Zintl, Managing Director of the PTF Group. "Our merger creates the basis to move ahead with our growth plans. We are now in a position to offer our customers a complete range from prototypes to high volume series as well as from the design and construction phase across all mechanical areas up to the produc-

tion of complex assemblies. The term 'system supplier' will now take on a whole new meaning for us!"

"I am absolutely delighted that we have found such excellent and successful partners for Hitega in PTF and SIP. Our future co-operation, particularly within sales, will open up completely new possibilities. Together with SIP, we will be able to position Hitega for a secure and long-term future", says Anton Hauner, former Managing Director of Hitega.

"This transaction represents a further milestone in the buy-and-build strategy for our portfolio company PTF. We have succeeded over the last three years to develop the PTF Group further and lay the foundations for future growth", says Philipp Amereller, Managing Partner at Silver Investment Partners. "The combination with Hitega represents the next logical step in this process as we combine the complementary product portfolios and customer bases of both companies. In particular, Hitega's very good position within promising sectors such as the semiconductor, medical technology and aerospace industries will contribute to the future development of the PTF Group."

### Innovate high tech company with established customer relations

Hitega was founded in 1990 and is specialized in the production of prototypes and small series of ultra precise CNC milled and turned parts. The company manufactures microscopically burr-free parts from a diverse range of challenging metals and synthetic materials. An ultra modern machine park and highly engineered and optimized production processes enable the company to develop and manufacture precision mechanical parts and assemblies for the semiconductor, medical technology, aerospace and measurement control industries. In recent years the company has developed well with a number of large customers. With the assistance of a joint, professional sales force it is anticipated that new customers will be won and cross-selling potential will be harnessed. In addition, the company already has a very modern assembly facility and specialist expertise, which can be developed further together.

### PTF continues growth path with the support of SIP

With the acquisition of Hitega, the PTF Group has taken the next step in its successful ongoing growth strategy supported by its majority owner SIP. Since their initial investment in February 2011, sales have increased by over 60 percent. Furthermore, the number of employees has increased from 130 to 190, including the workforce in its production facility in Suzhou, China. PTF has a broad customer base in attractive high-tech industries some of which are characterized by significant growth such as medical technology, laser technology as well as the semiconductor industry and anticipated growth, in particular in technologically demanding industries with a corresponding higher share of value added. In order to strengthen and further expand the technological leadership, approximately 10 percent of sales are reinvested annually in manufacturing facilities. The production facility in Stollberg/Saxony will be expanded by another 50 percent, with building work commencing in early 2014 and completion anticipated at the end of 2014. After the acquisition and completion of the building work, the Group will have a combined production area of more than 10,000 sq. meters.

The acquisition of Hitega represents the fifth successfully completed acquisition by SIP. The focus of SIP is on the long-term support of its portfolio companies and it aims to act in an entrepreneurial spirit and to support medium-sized companies with above average growth prospects. The focus is on companies with sales between EUR 5 million and EUR 100 million in Germany, Austria and Switzerland. In the process, the portfolio companies benefit from the knowledge, network and long-term orientation of the investor. SIP deliberately refrains from using classical fund structures with limited investment terms. Instead SIP finance transactions from their own funds of the founding partners and a pool of private investors. SIP was advised on this transaction by Ernst & Young (finance) and King & Wood Mallesons (legal and taxes). Hitega was advised by Dissmann Orth (legal and taxes).

PTF Pfüller GmbH & Co. KG  
D 09366 Stollberg





Pre-filled syringe processing competence: At Interpack 2014, Bosch presents an entire high-performance syringe line, consisting of the filling and closing machine FXS 5100, an ABO bag opener and an ATO tub opener.

### Modular machines for diverse requirements

# Interpack 2014: Bosch presents new developments for the pharmaceutical industry

- Filling and closing machine FXS Combi for nested syringes, vials and cartridges
- AIM 8 series: new generation of fully automated inspection machines
- New Manesty tablet press with even better accessibility

**8th - 14th May 2014**  
**Interpack 2014**  
**Duesseldorf (D)**

At Interpack 2014, Bosch Packaging Technology, a leading supplier of processing and packaging solutions, introduces numerous new developments for the pharmaceutical industry. Thanks to their modular design, all machines can be flexibly adapted to current and future market requirements and integrated into line concepts. The exhibits include novelties for the processing, filling, packaging and inspection of liquid and solid dosage forms, as well as a comprehensive service portfolio.

#### Filling and closing machine for syringes, vials and cartridges

As a special Interpack highlight, Bosch presents the new FXS Combi, a filling and closing machine for pre-sterilized nested syringes, vials and cartridges. The FXS Combi is the first machine of its kind with an integrated capping station. It can be flexibly integrated into existing line concepts, allowing for significant space savings. The FXS Combi is designed for low and medium output

and can be combined with the proven bag and tub opening machines from Bosch. The presentation of an entire high-performance syringe line, consisting of the filling and closing machine FXS 5100 for pre-sterilized nested syringes, an ABO bag opener and an ATO tub opener, additionally underlines Bosch Packaging Technology's competence in the processing of pre-filled syringes.

#### Sterilization tunnel HQL with reduced energy consumption

Bosch Packaging Technology has developed three new series for the sterilization and depyrogenation of pre-cleaned containers. Thanks to its modular construction principle and its reduced energy consumption, the new HQL tunnels are especially efficient and can be customized to meet all requirements. The proven HQL series, which has been safely and reliably sterilizing and depyrogenizing pre-cleaned ampoules, vials, cartridges and syringes according to the laminar flow principle for over 30 years, forms the basis of this new development. The new HQL 6000 and 7000 series, as well as the HQL 8000 series presented at Interpack will be available in three standardized tunnel bandwidths of 600, 800 and 1 200 millimeters.

#### AIM 8 series: new fully automated inspection machines

The product group Bosch Inspection Technology, founded in the beginning of 2012 following the acquisition of Eisai Machinery, shows an overview of its product portfolio, ranging from manual to fully automated inspection machines for the detection of particles in pharmaceutical liquids and cosmetic container inspection. A special trade show highlight is the reveal of the AIM 8 series, the new generation of fully automated inspection machines from Bosch Inspection Technology. From its portfolio of manual inspection devices, Bosch further showcases the table top device MIH-LX as well as the camera-based ETAC Easy View, which are, amongst others, used for laboratory analysis. For the first time, Bosch presents an inspection system outside of Japan that examines tablets for defects such as coloration, breakage, foreign particles and other imperfections.

#### Manesty tablet press with better accessibility

At Interpack, Bosch showcases a new tablet press from the product brand Manesty, which features particular easy handling.

## Interpack 2014: Bosch presents new developments for the pharmaceutical industry

The low-maintenance tablet press is easy to access. A newly developed filling shoe, as well as fast product and format changeover enhance the machine's output, making the tablet press especially suitable for customers with flexible requirements.

### Solidlab 2 for up to eight processes on a small space

The laboratory device Solidlab 2 has been designed especially for research and development purposes and easy scale-up. The modular laboratory equipment can run up to eight processes on a small space: from mixing, drying, granulating and coating of small particles and pellets in the fluid bed module to tablet coating in the coater module. By utilizing a mutual air handling and control system, Solidlab 2 reduces costs, the amount of required floor space and operator training. In addition to the laboratory devices, a Hüttlin granulation line with a

HTG 300 high-shear mixer granulator and a HDGC 100 fluid bed system, as well as a Manesty XL Cota 150 tablet coater are on show.

### Competence in capsule filling

At Interpack, Bosch demonstrates the flexible application of its capsule filling machines. The GKF 702 is suited for small and medium batches and all standard filling technologies, such as the dosator filling station from Bosch. The GKF Capsylon 3005, which is also displayed, focuses on a reliable output of up to 175 000 capsule per hour. It meets the demands of nutraceutical manufacturers for high efficiency, easy maintenance and operation.

### Cartoning, serializing and aggregating for the highest safety

A further trade show novelty comes from secondary packaging. The new cartoning

machine CUT 1405 offers higher flexibility, as well as newest servo and safety technology at reduced costs. The CUT 1405 can flexibly process different carton sizes to reliably and safely package a wide variety of packaging types such as bottles, vials, syringes, bags, sachets and sticks, as well as combination products. The CUT 1405 is equipped with quickly exchangeable carton sealing modules for tuck-in, glue and combined closures. Moreover, the intermittent horizontal cartoner is compatible with serialization and aggregation modules, which are also on show at Interpack.

### New MRA assembly platform for disposable pens

From the machine portfolio for medical devices of its product brand Moeller & Devicon, Bosch introduces a new MRA rotary assembly machine platform. The platform was developed for the fully automatic assembly of 4-piece disposable pens at medium outputs of up to 70 pens per minute. Thanks to its open construction, the platform offers a good overview of all stations and processes, ensuring easy operation. The automatic transport and controls between the different stations reduce operator intervention and manual handling to a minimum. The platform can optionally be combined with down-stream labeling and packaging equipment.

### Tailor-made service portfolio for improved equipment efficiency

At Interpack, Bosch also showcases its after-sales services portfolio. It focuses on solutions that improve packaging flexibility, machine efficiency and productivity. Machine upgrades and modernizations enable customers to flexibly adapt their existing equipment to new market requirements. During live presentations at the booth, the audience will be given an opportunity to take part in the "OEE Challenge" – a contest that tests participants' speed, feeding accuracy and productivity on a completely overhauled horizontal wrapper. Customers can also find out how training sessions enhance efficient machinery handling. Moreover, Bosch demonstrates how tailor-made service packages support customers in achieving maximum output and minimum downtime, ultimately resulting in higher profitability of their Bosch packaging machines.

Bosch's technologies are on display at Interpack 2014, Duesseldorf, Germany from May 8 to 14 in hall 6, booth A31 – C58.



Manesty XL Cota 150: The Manesty XL Cota 150 is especially reliable and efficient and suited for all tablet coating requirements in a medium output range.

Bosch Packaging Technology  
D 74554 Crailsheim

# Pfeiffer Vacuum exhibits vacuum solutions for the analytical market at the Pittcon and analytica tradeshow

- Proven vacuum solutions from a single source
- Long service life and high reliability
- Integrated pressure measurement

**03rd - 6th March 2014**  
**Pittcon Conference & Expo**  
**Chicago, IL (USA)**

**01st - 04th April 2014**  
**analytica Munich (D)**

Pfeiffer Vacuum, the global leader in vacuum technology, will be participating in the Pittcon trade show in Chicago from March 3 - 6, 2014 and the analytica show in Munich from April 1 - 4, 2014. "We will be presenting important new vacuum solutions at the Pittcon and analytica shows. Our product developments set standards in long life and reliability throughout the vacuum sector. In the field of analytics, which requires analytical systems with greater sensitivity and reliability, Pfeiffer Vacuum sets the bar particularly high", says Dr. Matthias Wiemer, Management Board member at Pfeiffer Vacuum Technology AG.

At Pittcon booth 1609 and booth A1.203 at the analytica show, visitors can talk to experts from Pfeiffer Vacuum about innova-

tive product developments for use in laboratories, analytics and biotechnology. New SplitFlow™ turbopumps, where one single vacuum system is able to replace several pump systems, are just one example of what will be presented. A single SplitFlow turbopump is fitted with several pump stages that are connected in series, thereby replacing several separate turbopumps. This reduces the cost of the vacuum system. HiPace® turbopumps will also be exhibited at the trade-show booth. The outstanding feature of these turbopumps is their unique rotor design with the proven hybrid bearing, which Pfeiffer Vacuum invented more than 30 years ago and has continually advanced ever since. These technical characteristics make for extremely high pumping speeds, high critical backing pressure and gas throughput, as well as very good compression for light gases. The turbopumps work particularly quietly and with only minimal vibration. In addition, Pfeiffer Vacuum will be introducing dry vacuum pumps and the concept of integrated pressure measurement.

"Particularly for our customers from modern analysis technology, the extended portfolio opens up additional opportunities, in terms of throughput and sensitivity for new developments of mass spectrometers", explains Analytics market manager Jürgen



Keller. "As the market leader for turbopumps in the analytical market, Pfeiffer Vacuum already set new standards years ago with its HiPace turbopumps. These turbopumps are based on the unique Pfeiffer Vacuum hybrid bearing system. This combines maximum service life with particularly high pumping speeds and optimized compression values, particularly with light gases."

As specialists for vacuum technology in the laboratory, and with more than 120 years' experience, Pfeiffer Vacuum offers sophisticated and proven solutions for applications ranging from low vacuum right up to ultra-high vacuum. The use of modern vacuum technology creates extremely favorable measurement and analysis conditions.

Pfeiffer Vacuum GmbH D 35614 Asslar

Half a year before TechnoPharm starts in Nürnberg, the signs already indicate a successful event. Leading companies in the sector like Bosch Packaging, Fette, GEA, GEMÜ, IMA or ProPack have already registered. Companies wanting to be there from 30 September to 2 October 2014 should act quickly. Three-quarters of the previous year's space at Europe's leading innovation forum for sterile processing technology in pharmaceuticals, food and cosmetics are already booked. The official floor plans for TechnoPharm 2014 provide a comprehensive overview of all exhibitors and the current floor allocation and are now available online.

## TechnoPharm 2014 filling up

**30th Sept. - 02nd Oct. 2014**  
**TechnoPharm 2014**  
**Nuremberg (D)**

"TechnoPharm is attracting more attention. Whereas the exhibition was heavily focused on German pharmaceutical production in its initial phase, TechnoPharm is now also gaining importance beyond Germany's borders," says a delighted Willy Viethen, Director Exhibitions at NürnbergMesse. "We increasingly receive inquiries from abroad – including from such strong pharmaceutical

markets as France and Great Britain. Even Canada is there this year."

### Experts wanted!

Exhibitors who would like to offer their specialist knowledge on the stage can apply to give a presentation of their practical examples to the sector, either at the Cleanroom Forum in hall 9 or at the Forum in hall 6.

At TechnoPharm, production specialists from the pharmaceutical, food and cosmetics sectors find a comprehensive range of plant and equipment for the manufacture of solid, semi-solid and liquid products, sterile

and biotechnology plant, as well as packaging technology and cleaning products. One of the focuses of the trade fair is on cleanrooms.

The parallel POWTECH, the World-Leading Trade Fair for Processing, Analysis and Handling of Powder and Bulk Solids, creates valuable synergies. The trade fair duo recorded a powerful eight per cent more visitors in 2013.\*

\*The figures for visitors, exhibitors and space at this exhibition are determined and certified according to the standard definitions of FKM, the Society for Voluntary Control of Fair and Exhibition Statistics.

NürnbergMesse GmbH D 90471 Nürnberg



# Pfeiffer Vacuum presents innovative vacuum solutions at the Semicon Korea Trade Fair

- New A4 series of dry pumps
- New dry A 200 L pump
- New magnetically levitated turbopumps in the ATH-M series

**18.03. - 20.03.2014**  
**SEMICON China Shanghai**

Pfeiffer Vacuum, a leading global supplier of vacuum technology, will be exhibiting at the Semicon Korea Trade Fair in Seoul from February 12 to 14, 2014. Visitors to the booth can discuss innovative vacuum solutions with experts from Pfeiffer Vacuum. „We are pleased to present important new vacuum solutions at Semicon Korea. With these product developments, we are setting standards in the entire vacuum industry“, says Dr. Matthias Wiemer, management board member at Pfeiffer Vacuum Technology AG. The company will be presenting the new products at Booth 5730 in Hall D:

## New A4 series of dry pumps

The dry, multi-stage Roots pumps in the A4 series provide pumping speeds of 100 to 1,700 m<sup>3</sup>/h. These energy-efficient and reliable pumps are ideal for use in demanding

processes in the semiconductor and coating industries. With corrosion resistant materials and a high gas throughput, this pump series is optimally suited for use in CVD processes, for example.

## New dry pump A 200 L

In spite of its small dimensions, the new dry, multi-stage A 200 L Roots pump provides a high pumping speed and very short pump down times. This dry pump is suitable for operation in cleanrooms, and is ideal for clean applications such as load-lock and transfer chambers, as well as for all other non-corrosive applications. The A 200 L is further distinguished by its ease of integration into semiconductor production lines and, in particular, by its energy-efficient operation.

## New ATH 2804 M and ATH 3204 M magnetically levitated turbopumps

In the magnetically levitated turbo-



pumps in the ATH-M series, a 5-axis active magnetic bearing monitors the position of the rotor. This high-quality bearing technology combines long-term stability and reliability with extremely quiet operation. Given the process equipment of these high vacuum pumps and their exceptional pumping speed, they are ideal for use in semiconductor production, particularly in etching processes, as well as in many other industrial applications. Pfeiffer Vacuum is also exhibiting at SEMICON China in Shanghai from March 18 to 20, 2014.

Pfeiffer Vacuum GmbH  
35614 Asslar

Visitors and delegates will take part in a seminar on powders and granulates, with lectures by renowned specialists. The project will present relevant contents, trends and the novelties concerning “solutions for fine particles and dry solids”, as well as their various applications.

# FCE Pharma presents the first edition of POWTECH Arena in Brazil

**12th - 14th May 2014**  
**POWTECH Arena**  
**São Paulo (Brazil)**

FCE Pharma, the main business platform for the entire pharmaceutical segment in Latin America and organized by NürnbergMesse Brasil, presents the 1st edition of POWTECH Arena. The event will feature several lectures on solutions for fine particles and dry solids.

The seminar panel will be comprised of renowned Brazilian specialists such as Janine Boniatti, Researcher of the Laboratory for Solid State Studies (LEES), André Luiz

Rosa, Eurofarma's Pre-formulation Analyst, and Altivo Pitaluga Jr., Researcher and Coordinator of the Laboratory for Solid State Studies (LEES) at FIOCRUZ. Visitors and delegates of the event will have access to free quality contents, main novelties and the best practices related to particle analysis, milling and mixing, as well as processes related to powder technologies.

„POWTECH, organized in Germany by NürnbergMesse, is the world-leading trade fair for processing, analysis and handling of powder and bulk solids. Bringing this event to the 19th FCE Pharma in the form of a seminar with co-located exhibition provides participants with the opportunity to get an

overview of the main tools, technologies and trends in the segment on a global level“, says Ligia Amorim, Managing Director at NürnbergMesse Brasil.

POWTECH Arena will take place along FCE Pharma and FCE Cosmetique, from May 12 to 14, between 2:30 pm and 7:00 pm at the Transamerica Expo Center in São Paulo.

## About FCE Pharma

FCE Pharma is the leading international exhibition of technology for the pharmaceutical industry in Latin America. It focuses on the complete production chain in the pharmaceutical sector. In 2013, almost 600 brands presented the newest raw materials, packaging, machines and equipment to over 19,800 highly qualified professionals.

NürnbergMesse GmbH  
D 90471 Nürnberg

From 25 to 28 March 2014, Arburg will present its range of electric machines and automation solutions at the Expo Plásticos 2014 in Guadalajara, Mexico. An electric Allrounder 520 E with a Multilift Select robotic system will demonstrate the production of a bowl at stand number 800. The matching cover will be produced on an electric Allrounder 320 A with robotic system from Sepro Robotique on the Sepro stand, which is also where Arburg's sales representative Axiomatek can be found.

## Arburg to exhibit electric Allrounders at Expo Plásticos 2014

- **Electric:** From the Edrive entry-level model to the high-performance Alldrive machine
- **Complete:** Exhibits from Arburg and sales partner Axiomatek produce bowls and covers
- **Important:** Mexican market connects North and South America

**25th - 28th March 2014**  
**Expo Plásticos 2014**  
**Guadalajara (Mexico)**

Over the past ten years, the Expo Plásticos has established itself as an important event for the plastics processing industry in Mexico and Central America. Guillermo Festerling, Managing Director of the Mexican Arburg subsidiary in Querétaro, explains the importance of the fair: "Thanks to the good infrastructural links with the markets in North, Central and South America, Mexico has succeeded in building an excellent reputation as a location for trade fairs in recent years. At the same time, the local plastics industry has developed well, thanks in part to the increased demand from regional automotive suppliers. The industry finds itself confronted with some complex challenges in this context. The automation solutions exhibited on the high-tech electric machines from Arburg at the Expo Plásticos 2014 show that we are well able to meet these demands."

### Two electric Allrounders with automation solutions

Arburg has come up with a special cam-

aign for visitors with the demonstration parts produced there. On Arburg's 90 square metre stand (no. 800), bowls will be produced in a cycle time of 12 seconds on an Allrounder 520 E with a clamping force of 1,500 kN and a size 400 injection unit. The 36 gram moulded parts are removed by a Multilift Select robotic system and set down on a conveyor belt, where they can be collected by visitors, who can then obtain a matching cover at the Sepro Robotique stand (no. 913). There, in conjunction with Arburg's sales representative Axiomatek, an Allrounder 320 A with Sepro robotic system will be on display. This exhibit has a clamping force of 600 kN and a size 170 injection unit and produces the 16 gram cover in a cycle time of 10 seconds.

### Electric Allrounder range

The electric machines from Arburg cover a clamping force range between 350 and 5,000 kN. The Edrive machine series offers customers the perfect entry to the world of electric machines, while the high-precision Alldrive can be used to produce high-end injection moulded parts in large volumes. The entry-level Edrive model is a cost-efficient alternative to standard hydraulic machines, while the high-end Alldrive series is predestined for the accurate and fast production

of precision parts, for example in the areas of optics or medical technology. Play-free, direct acting spindle drives achieve maximum reproducibility and consistent part quality, while special versions of the machines are also available for packaging applications. The advantages of the electric Allrounder series includes efficiently reduced energy requirements in comparison with hydraulic machines, as well as low-emission servo-electric drives. The machines are also convenient to use, thanks to the Selogica control system which is standard on all machine series.

### First class support from Mexican subsidiary

Visitors to the Arburg stand can look forward to personal discussions with the relevant advisors relating to the performance range of the Allrounder machines and the service offerings of Arburg's Mexican subsidiary in Querétaro. The subsidiary's facilities include a showroom with a floorspace of some 215 square metres, which provides sufficient space for five Allrounder injection moulding machines. In addition to presentations of the latest Arburg technology, mould prototyping and training also take place here. In addition, there is a well-stocked spare parts store, enabling Arburg to offer its customers in Mexico comprehensive pre- and after-sales service.

ARBURG GmbH + Co KG  
D 72290 Loßburg



Arburg will present its range of electric machines at the Expo Plásticos 2014: representing the Edrive series, an Allrounder 520 E will produce bowls in a cycle time of twelve seconds. (Photo: Arburg)

Growth continues uninterrupted and the halls of POWTECH 2014 are well booked. More than 700 companies from all over the world present the latest solutions for processing, analysis and handling of powder and bulk solids in the Exhibition Centre Nuremberg from 30 September to 2 October 2014. The official floor plans for POWTECH 2014 provide a comprehensive overview of all exhibitors and the current floor allocation and are now available now online.

## Now online: floor plans for POWTECH 2014

**30th Sept. - 02nd Oct. 2014**  
**POWTECH 2014**  
**Nuremberg (D)**

“There is a tremendous interest in POWTECH 2014 and the signs already indicate growth again – a good half-year before the event. Almost 90 per cent of the previous year’s space is booked,” says Willy Viethen, Director Exhibitions responsible for POWTECH at NürnbergMesse. “Companies still wanting to secure a stand space should contact us now.”

Exhibitors can not only apply for stand spaces, but also for presentations at the forum, a bustling meeting place in hall 4, where experts provide information about innovations in their sector.

The main product groups at the World-Leading Trade Fair for Processing, Analysis and Handling of Powder and Bulk Solids are:

- Basic mechanical processing technologies, such as size reduction, mixing, separating, screening and filtering
- Plant equipment and process components
- Particle analysis and characterization
- Nanoparticle technology
- Measurement and control
- Explosion protection, safety and environmental technology
- Services

The exhibitors at POWTECH benefit from extra synergies resulting from the parallel TechnoPharm, Europe’s leading trade

fair for sterile production processes in the pharmaceutical, food and cosmetic sectors. The unrestricted access of visitors to both exhibitions opens up extra opportunities for contact with these sectors too.

POWTECH achieved its best ever result in 2013. Every third visitor and every third exhibitor travelled to Nürnberg from abroad. Eight per cent more visitors\* is also a clear indication of the great response from all branches of industry.

\*The figures for visitors, exhibitors and space at this exhibition are determined and certified according to the standard definitions of FKM, the Society for Voluntary Control of Fair and Exhibition Statistics.

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Hector Moreno has become Engel de Mexico S.A. de C.V.’s new managing director, replacing Peter Auinger, who will be filling a new role within the Engel Group in Asia.

## New managing director for Engel in Mexico



Hector Moreno is a qualified engineer and has many years of sales experience in the plastics industry in Mexico. Before joining Engel he has been in charge of another European machine builder’s Mexican sales for 18 years.

Dr Peter Neumann, CEO of Engel Holding in Austria, remarks: „We’re delighted to have found a very experienced expert for this strategically important market. Mr Moreno is equally

passionate about sales and engineering, and we’re sure that, together with his team, he will continue the success story of Engel in Mexico.“ Among other things, his objectives include the further strengthening of system sales and the further expansion of the local service network, which already saw very strong growth while Peter Auinger was still in charge.

Peter Neumann adds: „We would like to thank Mr Auinger for

his excellent work. Engel has been able to make a disproportionately large contribution to the strong growth in the Mexican injection moulding industry and increase its market share continuously over the last few years.“ Investments by international car companies have more than anything else made the market so dynamic, but investments in the packaging, telecommunications and the consumer electronics industries have also played a major role.

Engel Austria has had a subsidiary in Mexico since 1996. In 2010, the premises were moved from Mexico City to Querétaro and significantly expanded. Querétaro is one of the country’s most important centres for the plastics industry. Engel de Mexico is not just a sales and service site with an extensive spare parts warehouse, but also a training site. The large, well equipped technical centre is used for seminars and conferences as well as for customer tests and mould trials.

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