

Automated Silane Filling for Evonik Antwerp

W&M approved IT8000E SysTec weighing indicators with *FILL E* software in use



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Evonik Antwerp produces highly functional silane liquids, such as Si363®, within its Smart Effects Business Line. These silanes combine with silica and rubber to form a chemical bridge, which is crucial for manufacturing “green tires” that deliver low rolling resistance, optimized wet grip, and enhanced durability. To ensure efficient filling of silane into various containers, Evonik uses, for example, automated filling systems from the scale manufacturer Kestermann, equipped with **SysTec IT8000E weighing indicators** and the proven *FILL E* application software.

Key Facts

- W&M approved liquid filling
- Automatic gravimetric filling instrument (AGFI) for various containers such as IBCs, canisters and barrels via roller conveyor
- Control of the filling system with SysTec weighing electronics
- A throughput of 15 IBCs per hour and a filling accuracy of up to 0.5% for 1,000-liter IBCs

Products

- IT8000E: robust and flexible SysTec weighing indicators for continuous operation
- SysTec *FILL E* application software ensures fast filling; software adaptation according to the customer's requirements
- High-performance Kestermann filling system, including assembly and service

Benefits

- Fast: Gravimetric filling method enables rapid and accurate filling of large quantities
- Precise: W&M approved liquid filling without overfilling or underfilling the containers
- Flexible: Easy product/container changeover and selection of weight unit displayed (litres or kilograms)
- Easy data transfer: Weighing data is captured by the SysTec weighing indicator and transferred via the PROFINET interface to the customer's higher-level control system
- Efficient: Automatic transport of containers, automatic bunghole detection and filling
- Low maintenance and easy cleaning: The system has a modular design and is made of stainless steel

The End Customer Evonik Antwerp

Evonik Antwerp is one of Evonik Industries AG's largest multi-user sites and, with nine production units, belongs to the Advanced Technologies segment. The company is active in the business lines Animal Nutrition, Crosslinkers, Smart Effects, and Active Oxygens. The production site is located in the Lillo Chemical Park in the port of Antwerp, one of Europe's largest chemical and industrial areas.

The Process

The containers to be filled are transported onto the roller conveyor of the filling system. Once the operator has entered the product number of the respective silane and the target weight, the W&M approved SysTec IT8000E weighing indicator, in conjunction with the higher-level PLC, takes over control of the automatic filling process using the under-level method.

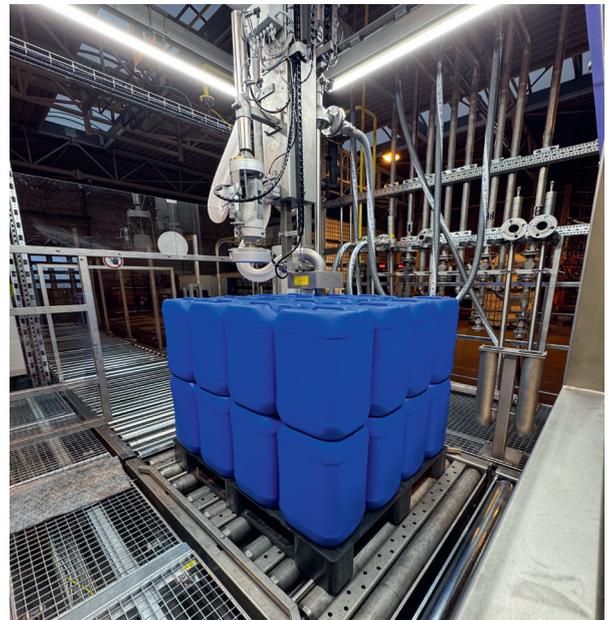
First, containers are detected by a sensor on the roller conveyor and transported to the filling and weighing station. An optical camera system then identifies the bunghole. The opening coordinates are transmitted via the PLC to the filling nozzle, which moves into position and fills the silane through the bunghole.

The IT8000E weighing indicator controls the flow rate in several stages: First, coarse filling with a high flow rate is carried out in order to quickly reach the target weight, then the system automatically switches to fine flow in order to precisely fill the remaining quantity within the specified tolerance.

Throughout the entire cycle, the SysTec weighing indicator monitors the weight, flow and tolerance limits, and controls the valves and filling lance.

The throughput of the system is 15 IBCs per hour or 60 canisters per hour, and the filling accuracy is up to 0.5% for 1,000-liter IBCs.

The weighing and process data is transferred to a higher-level control system via the PROFINET interface. There, the data is stored, logged for batch documentation and evaluated for quality and audit purposes, with integrity and traceability guaranteed at all times.



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SysTec weighing indicator IT8000E



At a Glance: SysTec IT8000E Weighing Indicator

- High ease of use: simple multilingual operator prompting, bright 5.7" TFT color display with wide viewing angle and large-character weight display, alphanumeric keyboard
- W&M approved use as a non-automatic and automatic weighing instrument is possible (approved in the EC, USA, Canada, etc.)
- Universal use: numerous standard application programs available
- Customizable: free programmability
- Robust: stainless steel housing (ingress protection IP69K)
- Ex-area: for hazardous areas SysTec offers the version IT8000E Ex2/22 and for zones 1/21 the IT8000Ex unit
- Various designs: wall-mount / desk-top version as well as panel-mount version
- Connection options: in relation to *FILL E* applications: 1 or 2 scales of different types with analog or digital load cells can be connected. Connection options for IT8000E in general: 2 internal and up to 6 external scale connections, can be integrated into PC networks via Ethernet or WLAN, connection to label printers and network printers, PLC connection via fieldbus
- High operational security: data storage power-fail safe, password protection, battery-backed real-time clock, remote diagnostics possible via Internet



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Further information on the project service providers



SysTec Systemtechnik und Industrieautomation GmbH

Since 1994, SysTec has been developing and manufacturing W&M-approved industrial weighing indicators and filling controllers for both static and dynamic scales.

More than 210,000 installations are in successful operation worldwide. SysTec's innovative weighing electronics deliver reliable performance in a wide range of applications, including filling systems for liquids and bulk materials, shipping and receiving scales, belt weighers, vehicle scales, checkweighers, piece-counting scales, mobile weighing systems, and a variety of customer-specific solutions. Alongside its standard products, SysTec provides customized hardware and software solutions. Comprehensive technical support completes the company's service offering.

The production and development site for SysTec weighing terminals and software solutions is in Germany. The company is located in Bergheim-Glessen, near Cologne. The production of the weighing terminals and software is subject to international OIML standards.

Discover more: www.systemecnet.com



KESTERMANN GmbH

Cologne-based KESTERMANN GmbH develops customized filling systems that are low-maintenance, durable and extremely flexible in use.

For more than 45 years, the family-owned company has been regarded as a specialist in industrial filling technology - whether for the chemical, tire or beverage industries.

KESTERMANN GmbH covers a wide range of products including systems for semi-automatic filling and fully automatic filling of containers, drums, canisters and IBC containers, as well as checkweighers, piece-weight scales or continuous weighing systems. Technical services round off the range.

Discover more: www.kestermann.de

