



sartorius
mechatronics

Services and Products for the Chemicals Industry



turning science **into solutions**

Sartorius Profile

From incoming goods to shipping, our solutions fit your processes. Although production processes may resemble each other, no one installation is ever the same as the other. That is why we not only offer an extremely broad portfolio of products and services, but also personalize our consulting to develop solutions that are custom tailored to the specific application.

Process optimization is one of the main forces driving innovation at Sartorius. Above all, our experience-based knowledge of our customers' processes underpins our high level of technological expertise.

The Sartorius Group is one of the world's leading laboratory and process technology service providers. In 2007, this technology corporation registered pro forma sales of € 622.7 million. Founded in 1870, the Goettingen-based company currently employs over 4,500 employees. Sartorius operates its own production facilities in Europe, Asia, and America and also maintains sales offices and local representatives in more than 110 countries.

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Explosion Protection

Absolute avoidance of potentially explosive environments is hardly possible in the production processes of the chemicals industry. For that reason, extensive precautions must be taken to ensure both occupational and operational safety. The safe and reliable equipment Sartorius supplies is rated with modern protection classes, without being limited in functionality or performance when used in hazardous areas.

As part of globalization, it is very advantageous to be able to offer international marketing authorizations for the same products in parallel for countries like the USA, Canada, Japan, China, CIS, etc. In keeping with this, international standards are strictly complied with and implemented, thereby allowing worldwide use of the products in our portfolio.

The wide and mutually combinable range of products for use in hazardous areas enables both complex and stand-alone weighing solutions. These include indicators and platforms available in a multitude of resolutions and mg to kg weighing ranges, featuring many designs and dimensions. They come painted, in stainless steel, as pallet or drive-through scales, as industrial scales, weighing cells and transmitters along with the matching electrical and mechanical weighing accessories.

The diversity of the Sartorius line of explosion-protected products is designed to be compatible and allow complex solutions from a single source. Beyond that, we also provide you with documented proof of this fact. Proof of the intrinsic safety with all values relevant to safety is included with the equipment supplied. This saves you time and money when preparing your explosion protection documentation.



Corrosion Protection

We offer constructions made of alloyed stainless steel for use in areas that demand high corrosion resistance and that are impervious to corrosive materials and aggressive cleaning agents. Their design and construction facilitate easy cleaning as well – that translates to high availability and low life-cycle costs.



IP Protection Rating

The IP protection rating (ingress protection) is a key element signifying protection against moisture and dust. It is also integral to the cleaning friendliness of the solutions we offer. These range from IP65, IP68 (submersion-protected) up to IP69K (high-pressure resistant).



1 Incoming Goods

Completeness Control | Incoming Goods Accounting

Incoming goods inspections and accounting procedures are used to track the first movement of goods within the company. Sartorius desktop, benchtop and floor scales and components for equipping tank scales and road vehicle weighbridges support your data acquisition activities with precise and traceable procedures. The extensive range of accessories and interfaces facilitates easy tracking of additional goods movement features, user recognition and guidance and integration in materials management systems.

pH Measurement

Easy operation, reliability and robustness are just some of the convincing features of the Sartorius Standard pH meters. Automatic calibration at the touch of a button lets the user prepare for measurements fast, while ensuring reliable results. The portable pH meters are the perfect solution for mobile applications. Easy to handle, rugged and hard-wearing, they can be used wherever precise, on-site measurements are required.

Determination of Conductivity, pH+Redox Potential, Ion Analysis and Temperature Measurement

Sartorius professional meters provide optimum measurement conditions for determining conductivity, pH+redox potential, ion concentration and temperature of the supplied material. The instruments are ideally suited for optimizing laboratory experiments. They are easy and safe to operate.

Detection of Foreign Bodies

Sartorius state-of-the-art metal detection technology guarantees consumer protection: safe, self-optimizing detection of metallic contamination in base materials while ensuring compliance with all documentation requirements and offering particularly easy, safe operation and built-in online assistance. The wide range of construction types gives you fit-to-match products and packaging sizes every time. The special conveyer technology guarantees maximum throughput and dependable detection performance with no false alarms.

Moisture Analysis

Moisture content is an essential determinant of the quality and processability of raw materials. For this sector, Sartorius offers a wide range of measuring methods: Scales and balances with differential weighing functionalities for optimizing the oven drying method, infrared-drying as a fast gravimetric procedure in trace ranges, microwave resonance technology for fast measurement in seconds without sample preparation and systems which operate coulometrically for the selective determination of water content as a substitute for Karl-Fischer titration.

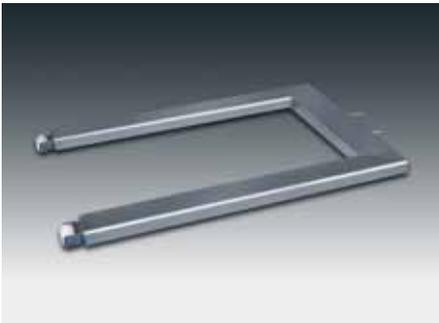
Parts Counting

The highest counting accuracy in the shortest possible time: the Sartorius counting scale application provides fast and precise counting results for all incoming countable "piece" units – with easy, faultless operation. This application is used, for example, when packing containers and materials are delivered by quantity.

Data Logging

Software and data interfaces record supplier data and form the link to your own material and batch identification. Consistently equipping all devices with bidirectional interfaces and a variety of data logging programs makes it possible to adapt to your individual requirements.





IU pallet scale for flexible use



IF drive through scale



Tank and hopper weighing



2 Quality and Process Control

pH Measurement

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Analytical Weighing

Sartorius premium balances are ergonomic and functional and easy to integrate into your processes. They are outstanding for their short measurement times and accurate results. These balances are easy to handle and the isoCAL fully automatic calibration and adjustment function and ISO/GLP-compliant, traceable measurement reporting deliver reliable weighing results every time. Reproducible weight measurements and easy integration into quality assurance systems support optimum use.

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Density Measurement

Some Sartorius laboratory balances include software for determining the density of liquid, paste-like or solid materials. The density of the material is determined precisely by means of an initial measurement in air followed by a second buoyancy measurement in liquid. Sartorius provides a suitable measurement device for the balance in question.

Weighing Toxic, Powdered Materials

Safety Weighing Cabinets create a contained area around the laboratory balance which prevents any air or finely powdered particulates from escaping into the operating personnel's work area. At the same time, the constant inlet air velocity and the special cabinet construction both keep the air current practically turbulence-free, and, as a result, ensure consistent and repeatable weighing results.



Docu-pH meter for seamless data logging



Optical moisture analysis with the LMA500. for non-destructive and contact-free measurement



Sartorius LA analytical balance: precise weighing results, short measuring times, rugged in everyday laboratory use



3 Batch Processing | Formulation | Filling in Production and Raw Materials Storage

Formulation

Strict specifications for traceability and documentation are extremely important for manual weighing processes. User-friendly, intelligent weighing stations from Sartorius including good operator guidance ensure that all current guidelines and regulations are met – without restricting performance or flexibility.

Filling and Batching

Database-based administration of raw material and recipe data makes automatic batching easy and highly efficient when using system controllers and recipe management systems from Sartorius. Consistent compliance with international standards and the open-system architecture allow easy data exchange and seamless integration into higher level systems.

pH Measurement

Easy operation, reliability and robustness are just some of the convincing features of the Sartorius Standard pH meters. Automatic calibration at the touch of a button lets the user prepare for measurements fast, while always ensuring reliable results. The portable pH meters are the perfect solution for mobile applications. Easy to handle, rugged and hard-wearing, they can be used wherever precise, on-site measurements are required.

Online Moisture Analysis

Sartorius calculates the moisture content of pourable and granulated products in a fraction of a second using microwave resonance technology. Determination takes place with no sample preparation and is contact-free and non-destructive. A very wide range of sensors for installation in production equipment is available for production control applications (online measurement).

Components

In the pre-processing preparation of raw materials or active ingredients, Sartorius balances are capable of highly accurate extraction weighing of quantities in the µg to ton range. Their hygienic design is a distinguishing feature that makes them suitable for use in product contact applications; minimum surface roughness and easy cleanability help prevent potential contamination risks. Connection to ERP/MES systems via the OPC interface is just one example.

Data Logging

Every device is standard equipped with interfaces. Because they also include a variety of data logging programs extending to comprehensive application features, it's easier to personalize solutions. A large selection of hardware and software offers you answers which combine functionality with safe and easy operation. Flexible interfaces to database connections on many host systems are also supported.

Detection of Foreign Bodies

Protecting expensive production equipment is a very important concept in the chemicals industry. Undetected metallic contamination can damage production equipment and additionally expose production employees to extremely high safety risks. Metal detectors from Sartorius help protect production equipment and workers by detecting metallic contaminants in good time and removing them from of the product stream.



Weighbridges for measuring conveyed volume and quantity



Filling with X-Family system controllers



Recipe management and the production of a batch report using ProMix



Ensuring and documenting traceability



4 Packaging & Outgoing Goods

Average Weight Control

To save costs, it is important to avoid overfilling when filling and packaging the end product. On the other hand, compliance with legal regulations governing the finished packaging must be ensured. Here, the objective is to achieve the best compromise while unavoidable process fluctuations pose considerable challenges to this task. Fill quantity control systems are the perfect way to implement both static solutions for random samples and in-line solutions utilizing dynamic checkweighing scales while ensuring 100% control and sorting. Batch-related, average weight control takes place directly in-process with instant feedback to the control station, thereby avoiding costly production errors. The consistent implementation of Hygienic Design Standards for easy cleaning of the checkweighing scales and the high resolutions, despite high maximum loads, offer considerable advantages in practical use. A variety of system architectures are available from the low-cost stand-alone station solution through to network solutions connected to the company's data processing network.

Statistical Process Control | In-process Control

Random variables, like temperature, heat-seal temperature, pH, moisture content or viscosity can be estimated, measured and finally logged. These measurements can then be compared with each other or recalculated against fixed factors to new characteristic values. This is achieved by intelligent industrial terminals with flexible interfaces to nearly all in- and at-process sensors which allow direct logging during the production process and immediate monitoring, evaluation and regulation. The objective is to exploit all optimization potentials while maintaining production that is not only reliable and true to specification, but ensures full compliance with legal regulations and meets all standards.

Attribute Testing

Crooked labels, incorrect expiration dates, illegible imprints or barcodes, poor opening options, uneven sealing seams and leaking tubular bags are examples of packaging attributes that can hold back products from delivery release. In this sector as well, a variety of intelligent industrial terminals and industrial PCs enable tailor-made solutions for the desired applicative scope directly in and at the process.

Detection of Foreign Bodies

Sartorius state-of-the-art metal detection technology guarantees consumer protection. Safe, self-optimizing detection of metallic contaminants is achieved even through blister packaging. In addition, the integrated quality assurance functionality meets all documentation requirements.

Portioning | Weighing

Sartorius standard scales deliver fast, precise measurement results. The models are equipped with an internal alignment jig and offer a high quality solution for all weighing tasks. Their easy handling, their fully automatic isoCAL calibration and adjustment function along with the ISO | GMP-compliant automatic recording and printout are mandatory features in the chemicals industry.

Portioning | Parts Counting

The Sartorius line of counting scales features ultra-high resolution and counting accuracy to ensure fast and accurate results when counting all measured and countable parts in the unit of counting – and they couldn't be easier to operate. Counting scales speed up manual content packaging by piece, while packaging accuracy and quality are improved.



Data logging with Sartorius ProControl for Windows



Weighing with the Combi series



In-process metal detection

5 Competence and Reliable Service

We Offer You Both!

As early as the project planning stage, our service engineers get involved to expand knowledge and input their practical experience.

The advantages are reflected in streamlined processes during startup, care, corrective maintenance, servicing and system scale-up and in shorter down times.

- Maximal system availability and optimal system performance
- Minimal production down times
- Quality assurance in compliance with the current directives and standards
- Full-range service provision

Our service performance spectrum is expansive: calibration, corrective maintenance service, training and service contracts with guaranteed response times are just some of the benefits. For instance, preventive maintenance work significantly extends the performance and lifetime of your systems; problems are detected early or, ideally, prevented altogether. We thereby help you secure your investment and optimize overall costs.

Consulting

- Process analysis in consultation with the systems operator
- Consulting or process optimizations, system extensions and system upgrades including generation of performance specifications
- Drafting implementation concepts
- Cost estimation and implementation planning

Startup

- Starting up your equipment and systems
- Monitoring the first production phase
- Initial instruction | training of the operating personnel
- Circuit diagram updating

General On-site Service

- Troubleshooting and error analysis
- Adapting to changed production environments
- Corrective maintenance after external impacts like lightening, storms etc.
- Installation and startup replacement equipment

Repairs, Replacements, Spare Parts Service

- Repairs of defective electronic modules at our shop
- Cost-effective replacement service for defective modules
- Original spare parts available worldwide, if desired at an on-site consignment warehouse at your facilities.

Service Contracts

- Preventive maintenance according to established standards
- Fixed response times for service engineers, if needed, around the clock, 365 days a year
- Guaranteed delivery times for spare parts



IQ | OQ qualification on-site at the customer's facility



General on-site servicing



Equipment acceptance during a FAT



Servicing a unit at one of our repair centers



Issuing a German Calibration Service (DKD) calibration certificate with test mark

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