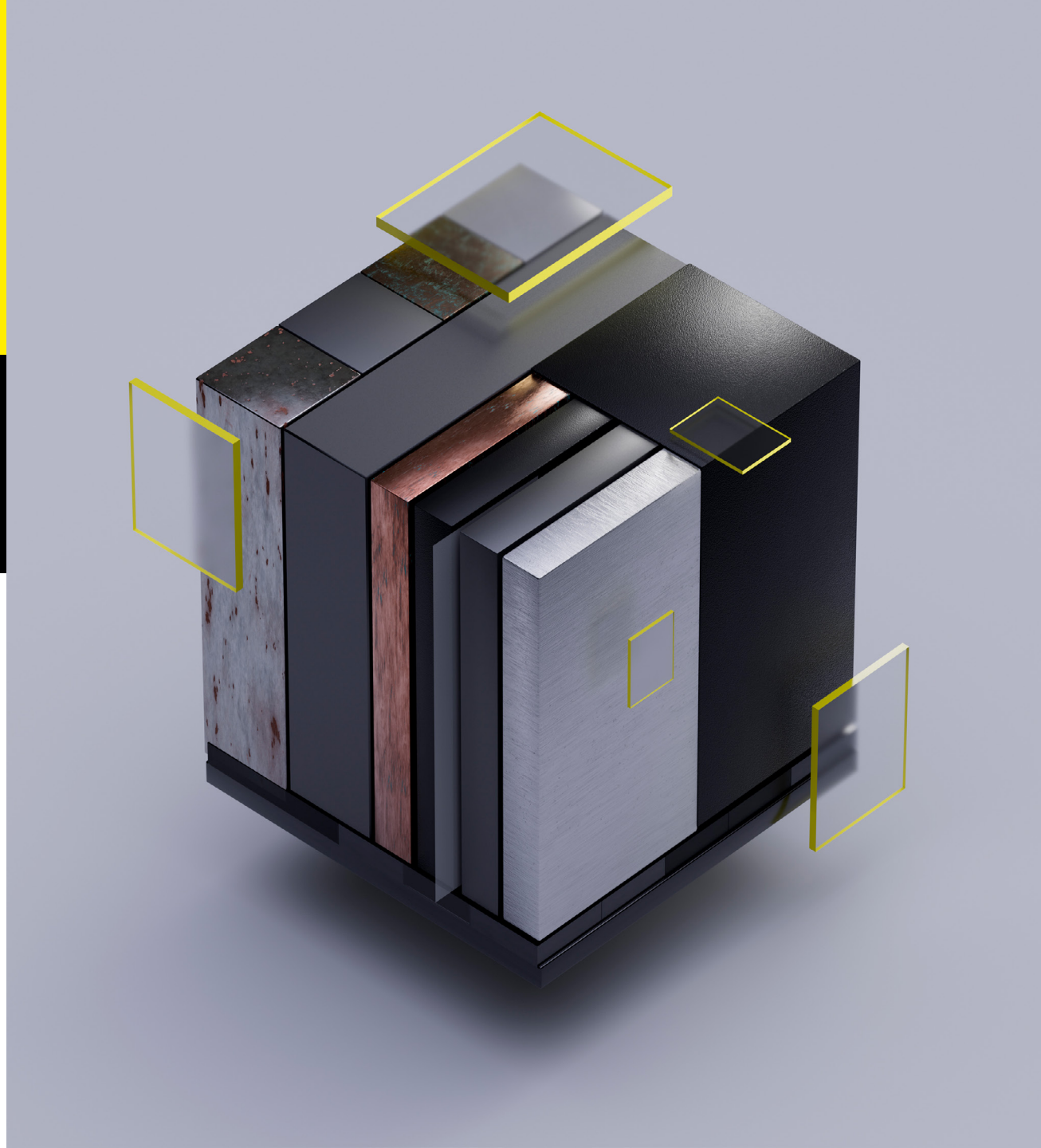
SARTORIUS

Simplifying Progress

Rechargeable Battery QC & Research - Solutions for a Powerful Future

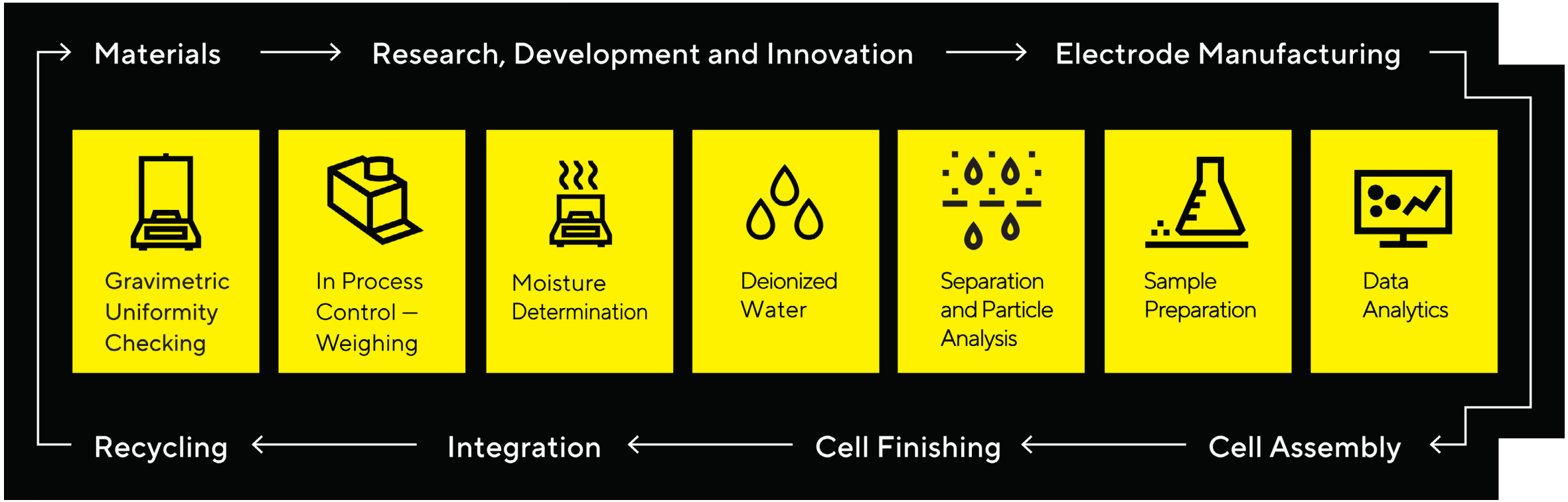
Campaign eBook – November 2025



Gravimetric Uniformity Checking | In Process Control - Weighing | Moisture Determination | Deionized Water | Separation & Particle Analysis | Sample Preparation | Data Analytics

Rechargeable Battery QC & Research - Solutions for a Powerful Future

Lab equipment and integrated weighing solutions to support your battery manufacturing



Website

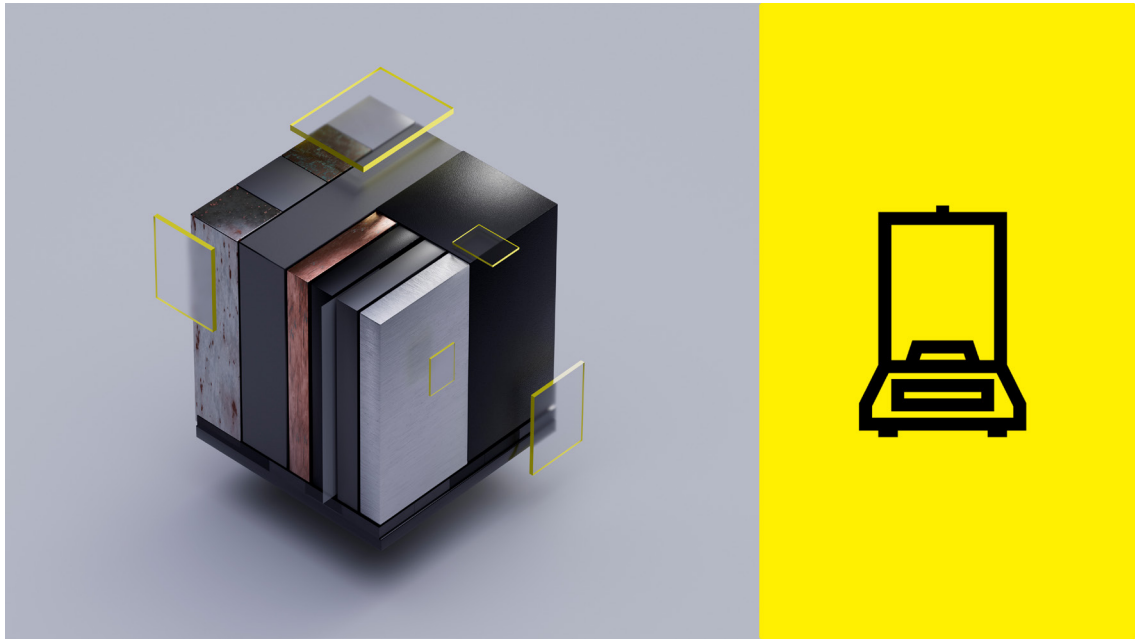
Blog

ACS Whitepaper

Battery manufacturers must deliver products with reliable performance and safety. This requires consistency throughout all parameters in the production chain, from active material refining to electrode manufacturing, assembling and OEMs' integration.

Sartorius can help you attain the perfect battery pack with accurate, reliable weighing instruments:

- Check the purity of constitutive components by density
- Calibrate dispensing heads
- Determine the grammage of electrode foils
- Ensure no parts are missing after assembly
- Count small pieces in large quantities

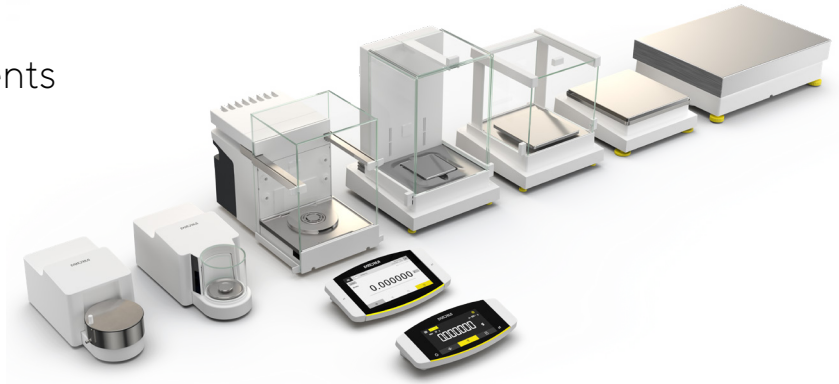


Delivering the right dose of components is critical in battery manufacturing. With configurable hardware, software and connectivity, the Cubis® II high-performance balance aligns with your unique needs.

- Seamless connectivity enhances productivity, efficiency and data integrity in your laboratory
- Customizable with 45 weighing modules, two user interfaces and seven draft shields
- Flexibility to enhance hardware and software configuration over time

Adaptable QApps software for weighing applications:

- QAPP305 Paper Weight automatically calculates the weight of each sample area. Use it for uniform coating of electrode slurry on each electrode sheet after calendering and notching.
- QAPP219 Averaging with Checkweighing provides instant checks of deposited weight, even in an unstable environment, and records the values for further analysis. It allows reliable, continuous dispensing of slurry, glue or gap fillers.
- QAPP Mixing enables accurate weighing and documenting of up to 100 components in a single recipe. It ensures accurate formulation of constituents in a slurry composition.
- QAPP205 Counting with Checkweighing checks if the number of pieces is within defined limits, so can be used to check the completeness of battery cells and modules.



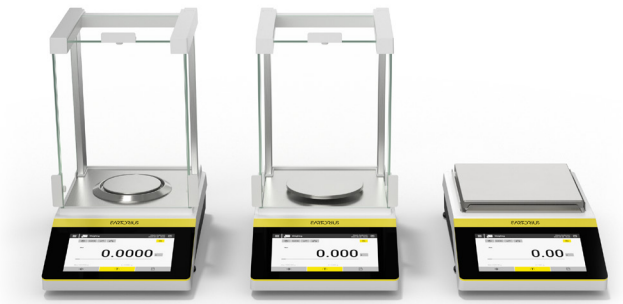
Verification by weighing is a non-destructive and precise way to check for the correct assembly of battery components and packs during the battery manufacturing process. The Sartorius Quintix® Pro balances ensure each step is performed correctly. 18 models covering a weighing range up to 12,200 g , with readability from 0.1 mg to 100 mg.

The built-in **Counting application** determines the number of objects that have approximately equal weight. In the first step, a reference weight with a defined quantity is weighed. In the second step, a sample with an unknown quantity is weighed.

The application **Checkweighing Solution** ensures complex devices have been assembled completely at every step of production. The readability of balances will be determined by the weight of the smallest component in the finished product assembly.

Additional safeguards:

- Ensure the highest weighing accuracy with the internal motorized levelling
- Fully automatic temperature- and time-controlled internal calibration and adjustment – isoCAL
- Smart design and chemically-resistant surfaces made of PBT, glass and stainless steel support routine cleaning protocols
- 19 models covering weighing range of 21 g to 6,100 g; readability from 0.002 mg to 100 mg



Density measurement gives important information about the purity of active material ingots or plastics, raw material of the concentration of electrode slurry components or the quality of electrode foil coating after calendering. Deviation from expected density may indicate the presence of impurities.

Sartorius Entris® II Advanced Line, together with the density kit YDK03**,** offers accurate density measurement you can trust.

- Built-in application Density Determination with printout/data output
- Real “PC-direct feature” facilitates easy transfer of weighing data into spreadsheets or other applications
- High chemical resistance - ensured using parts made from hard-wearing polybutylene terephthalate (PBT), stainless steel and glass
- 38 models with weighing range from 60 g to 12,200 g, and readability from 0.1 mg to 1 g

Related Resources

[Formulation](#)
QApps Formulation in multiple vessels and in single vessel has the ability to create recipes and save them in a shared database. Each component has a name and weight.

[Effects of Static Electricity on Analytical Weighing](#)
Get powerful, space-saving tips on eliminating static electricity during the analytical weighing process.

[Fogging Test Procedure](#)
Discover how Cubis® II – paired with fogging test QApp software – can help EV manufacturers identify semi-volatile organic compounds.

[Weighing in an Inert gas Atmosphere](#)
See how an inert gas environment affects weighing results and learn the best way to transfer and operate balances in inert atmosphere gas boxes.

Supporting Products

[OEM weigh cells](#)
Sartorius offers weigh cells featuring electromagnetic force compensation and electronic modules that can be installed in or connected to other equipment requiring a weighing function to operate.

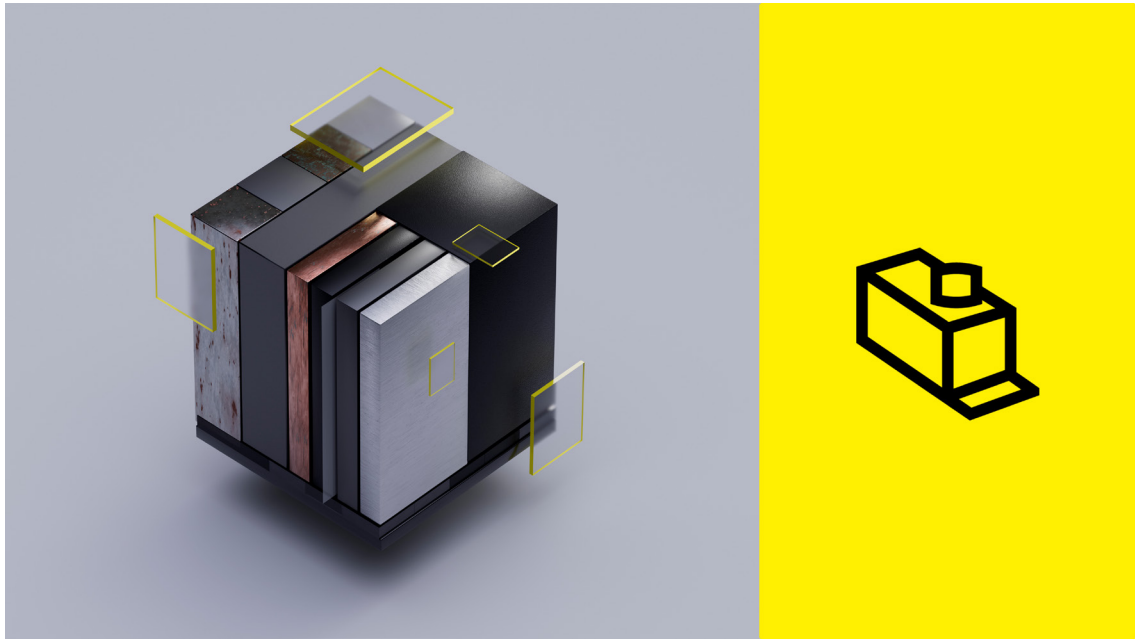
[Instrument Services : Calibration, Installation, Maintenance](#)
Service life cycle management is a critical part of purchasing your equipment. It starts with proper installation and basic user training, followed by routine preventative maintenance visits. These services increase the longevity of the unit while reducing downtime and limiting product loss.

[Density Kit](#)
Density determination kits for Entris® II Advanced Line

Even small deviations in the composition of slurry components can alter the shelf life and the quality of the battery cells, possibly damaging the cell modules and packs latterly, after their integration in the OEM.

Sartorius engineers weigh cells as solutions for integration of a force or weighing sensor into production lines. Our weigh cells with electromagnetic force compensation and electronic interface for configuration and data transfer can be installed at different stages:

- Checking of electrolyte, glue or gap filler dispensing heads
- Dosing and mixing of slurry constituents
- Control of correct assembly after stacking, dispensing or module assembly
- Full process control during production



High-throughput dispensing applications are common in the battery industry for delivering electrolyte, gap fillers or glue. Dispensing heads must be metrologically controlled and adjusted according to the ambient conditions, density, or viscosity of the delivered liquids.

Sartorius' closely integrated weigh cells are ideal for **calibrating dispensing heads** by automatic mass calculation and detection of value drifts over time.

- Designed for high-precision industrial applications; resolution of up to 0.001 mg
- Configurable for accurate weighing of moving samples or unstable environments
- Internal/external calibration weight for easy checks and necessary adjustments
- Simple communication via the data interface

Strict compliance to the slurry recipe is critical to ensuring perfect adhesion of the coating to the electrode foils and, therefore, extended battery life. However, variations in composition of both pure and recycled raw materials are inevitable across different batches, or suppliers.

Sartorius' integrated weigh cells are ideal for **gravimetric measurement of deviation** from the target value of each component, and guiding the reformulation of slurry recipes.

- Excellent monolithic weighing system with high resolution of up to 0.001 mg and fast stabilization time
- Internal or external calibration weight for easy checks in automated environments
- Control of the weighing cell via the interface
- Chemical protection, easy to clean, stainless steel housing

Embedding weighing steps strategically along your battery production can detect missing components, ensure accurate dispensing, and enable perfect assembly of all systems, from stacking to module assembly.

In-line weighing controls identify **deviations right when they happen**, with high precision, allowing checking of 100% of products. Measurement accuracy can be adjusted to the product and the measurement time can be optimized using the integrated digital filter.

Sartorius Weigh Cells are ideal for collecting data quickly and alerting on deviations.

- Excellent monolithic weighing system in stainless steel housing
- Internal or external calibration weight for easy checks in automated environments
- Adjustable load receptor with overload protection, optional lift-off protection
- Accurate determination of even small mass differences

Additional Content

Related Resources

[OEM Weigh Cells & High Resolution Load Cells]
Integrators use weigh cells as a force or weighing sensor in production lines, industrial equipment, or other types of machines.

[High Resolution OEM weigh Cells]
The WZA-NC series provide a readability of 1 µg | 10 µg for a capacity of 20 g | 240 g. Designed in SS for space sensitive applications.

[High Resolution Load Cells, IP68]
WZA25-NC has a capacity of 20 g with a readability of 10 µg in a small housing. Multiple weighing systems can be arranged in linear fashion.

Supporting Products

[Explosion Protected IP44 OEM-Weigh Cells]
Explosion-protected weigh cells for use in hazardous areas suited for Zone 1 and 2 with gases of group IIC and temperature class T4.

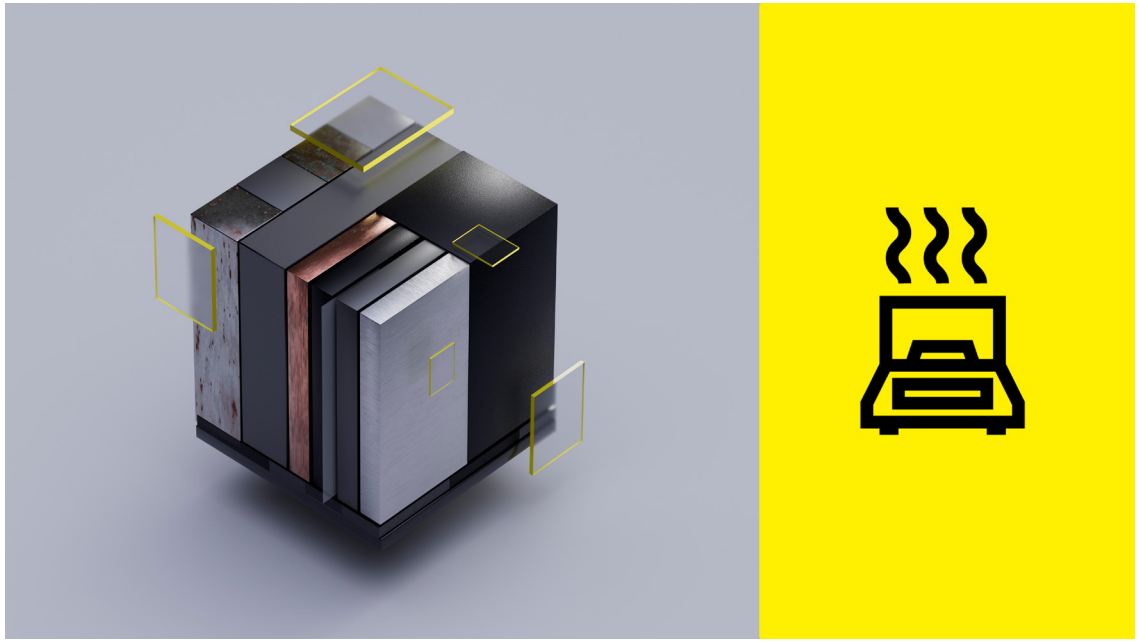
[Picus® 2 Connected Electronic Pipette]
Picus® 2 pipettes offer reliable performance while being kind to your hand. Equipped with Bluetooth and open connectivity that allows you to integrate Picus® 2 with Sartorius Pipetting App or other systems for automated solutions.

[Entris® II Balances]
Entris® II offers protection systems to ensure only valid data is transferred. It is easy to clean and minimizes weighing errors caused by electrostatically charged samples.

Maintaining minimal water content is a strict requirement when producing certain types of batteries, like lithium-ion batteries. The Karl Fischer method is commonly used for routine monitoring of raw materials and environmental conditions, but it requires separate laboratory analysis.

Sartorius thermogravimetric moisture analyzers allow for rapid evaluation of moisture content at various stages of production:

- Quality control of raw materials - plastics, separators, graphite, active materials
- Residual quantity of solvents after drying steps
- In-process checking of electrode slurry or gap fillers
- Characterization of materials after recycling or innovation stages



Electrodes for batteries are commonly made by a wet paint style application of the slurry onto either aluminum or copper foils. Drying steps influence the electrode thickness, substrate adhesion, and can lead to cracks. In lithium-ion batteries, water reduces the structural stability and capacity of the battery.

Sartorius MA 160 Moisture Analyzer can determine the **moisture content of liquids**, pastes and solids conveniently, reliably and quickly.

- Powerful heating for up to 30% faster measurement times combined with our special Better-Clean design for unequalled cleaning possibilities
- Method Development Assistant function enables you to create your own methods for different samples and efficiently manage the methods in a library
- High memory capacity for methods, results, calibration, and performance data ensures traceable documentation at any time
- Capacity 200 g. Readability 1 mg. For Moisture determination > 1%

Developing the batteries of tomorrow requires constant innovation. The development of new chemistries, the increase in battery performance and the future stages of industrialisation require a perfect knowledge of all constitutive materials.

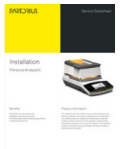
Sartorius MA100 flexible moisture analyzer helps characterize printed, recycled or newly developed materials for wet or solid-state batteries.

- Determination of moisture contents as low as 1%, precisely and reproducibly
- Choice of three different infrared heat sources: halogen, ceramic, CQR quartz glass and a broad range of different functions to adapt the measurement of challenging samples
- Samples with low moisture content > 0.001% and/or other special requirements in different applications like plastics, powders, 3D printers
- Capacity 100 g. Readability 0.1 mg

Related Resources

[Moisture Analyzer Overview]
Discover our broad range of moisture analyzers from the user-friendly basic to our high-end model.

[Installation Moisture Analyzers]
The reliability and service life of your moisture analyzers depend on its installation and configuration.



Supporting Products

[Glass fiber pads]
For moisture analysis of liquid, pasty or greasy samples (80/ box), hard quality

[Instrument Services : Calibration, Installation, Maintenance]
Service life cycle management is a critical part of purchasing your equipment. It starts with the proper installation and basic user training and is followed by routine preventative maintenance visits.

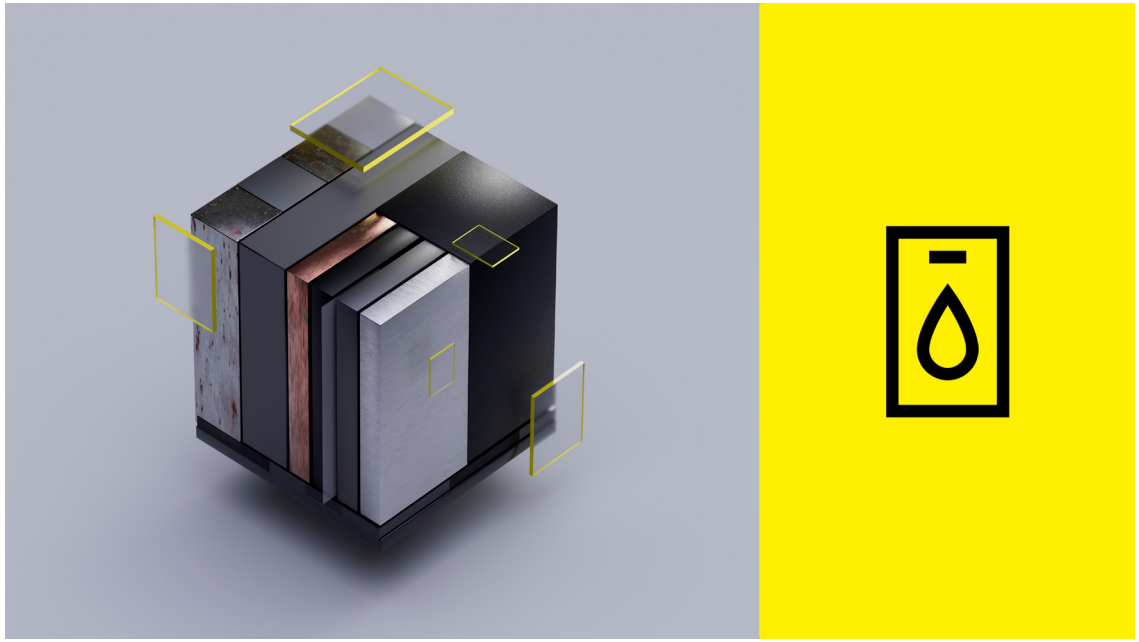
[ReproEasy Pad for User Testing]
Performance test to ensure functionality of your MA37 or MA160 in 5 minutes

[Cubis® II Semi Micro Balance]
The Cubis® II Semi Micro Balances with the Qapp for Loss on Drying Application help to determine the moisture content

In battery production, total ion-free water is mandatory for preparing water-based slurries and samples or simply rinsing the battery cases to avoid interferences on the charged poles. A common method of producing ion-free water is distillation, but this method is usually associated with high energy costs. Purification methods like reverse osmosis and ion exchange are significantly lower cost alternative.

Sample preparation or rinsing in sensitive analytical applications has an additional requirement for low-TOC water that might interfere with results.

Sartorius Arium® water purification systems offer a wide range of options to meet your laboratory water needs regarding quality (ultrapure, pure or Reverse Osmosis water), daily volume usage and flexibility.



Slurry deposited on the electrodes of lithium-ion batteries is usually composed of a mixture of active powder, conductive carbon black, binder and solvents. Solvents, such as NMP, are removed (and recycled) by evaporation and require working in dry rooms. Aside from toxicity and potential flammability, solvents can consume over 50% of the energy of the entire electrode manufacturing process.

In place of solvents, ultrapure water combined with suitable binder can lower manufacturing costs, ease recycling of the active material components and be kinder to the planet.

As a reliable source of ultrapure water, the Arium® Pro UV TOC offers a **flexible and modular system**. All systems meet and exceed the ASTM Type 1 water quality standards and ensure reproducible results in their class. Up to 2L of consistently high-quality ion-free water with a conductivity of 0.055 µS/cm (18.2 MΩ x cm, 25 °C) can be dispensed per minute.

- System selection specifically for your application
- Perfect integration into any laboratory
- Display with touch function and intuitive menu
- Favorites function with direct access for recurring volumes

Several instruments and systems require feed water for regular operations. Because of impurities, standard tap water is not sufficient and must be purified to reduce the possibility of calcification or avoid ionic contamination.

- Feed ultrapure water systems
- Feed distilled systems
- Water for washing machines

Arium® Advance EDI and Arium® Advance RO systems **reliably remove oxidants, organic contamination, heavy metal ions and particles** from the feed water, with an optimal water yield thanks to the iJust® Software.

- Arium® Advance RO produces high-quality reverse osmosis water with a production flow rate of up to 24L/h.
- Arium® Advance EDI consistently delivers Type 2 water of a high quality at rates of up to 10 L/h. Moreover, the Advance EDI attains a high retention rate of ions with the latest EDI technology.

Pure water is stored, while protected from secondary contamination in the innovative, closed Arium® Bagtank. The Bagtank technology comes with an optional pump and up to 100L storage capacity, allowing prompt withdrawing. The Bag is exchangeable and does not require cleaning, while reducing down-time.

Ultrapure water is necessary for numerous lab applications, including preparing samples, rinsing glassware, as well as creating instrument blanks, calibration curves, and standard solutions for spectrometry and other applications.

Battery production and recycling requires water that is free of conductive elements.

The compact Arium® Mini water purification systems have been designed to meet your Type 1 ultrapure water needs, handling up to 10L/d for general, life-science and analytical applications,ensuring reproducible results. The newest member of the Arium® Mini family: Arium® Mini Extend. Experience maximum convenience with the flexible, removable dispensing unit, keeping you ahead in your lab routines.

- **Flexible:** Different versions for different inlet water and connection options, as well as the desired water withdrawal
- **Compact:** Space-saving with a width of only 28 cm (+ 9 cm for versions with attached dispensing unit)
- **Intuitive:** Color touch display, with direct access to all important information and dispensing options
- **Innovative:** Depending on the type of system, our unique Bagtank technology saves time as no intensive tank cleaning with hazardous substances is required
- **Reliable:** Delivers consistently high water quality for reliable and reproducible results

Related Resources

[Brochure Arium® Water Purification Systems]
A choice of more than 70 Arium® versions is available to meet requirement on water quality and to cover any application.

[Preparation of GC and HPLC Standards]
Reverse pipetting and pre-wetting of the pipette tip are necessary to accurately pipette ethanol, methanol, acetone, or volatile liquids.

[Ultrapure Water For Trace Analysis with ICP-MS]
Test series ensure that the Arium pro UV systems generate a high purity water, which can be used for trace analysis of elements by ICP-MS.

[Arium® Bagtank Video]

Supporting Products

[Arium® Smart Station Water Dispensing System]
Flexible Arium® Smart Station can dispense water, in the quality (ultrapure or pure/RO) and quantities required for your experiments, when and where you need it.

[Arium® Mini]
Compact Laboratory Water Systems

[Installation, Qualification & Maintenance of Water Systems]
Trust the experience of our service organization throughout the life cycle of your Arium® water purification systems.

[Arium® Pro Trace Analysis Certificate]

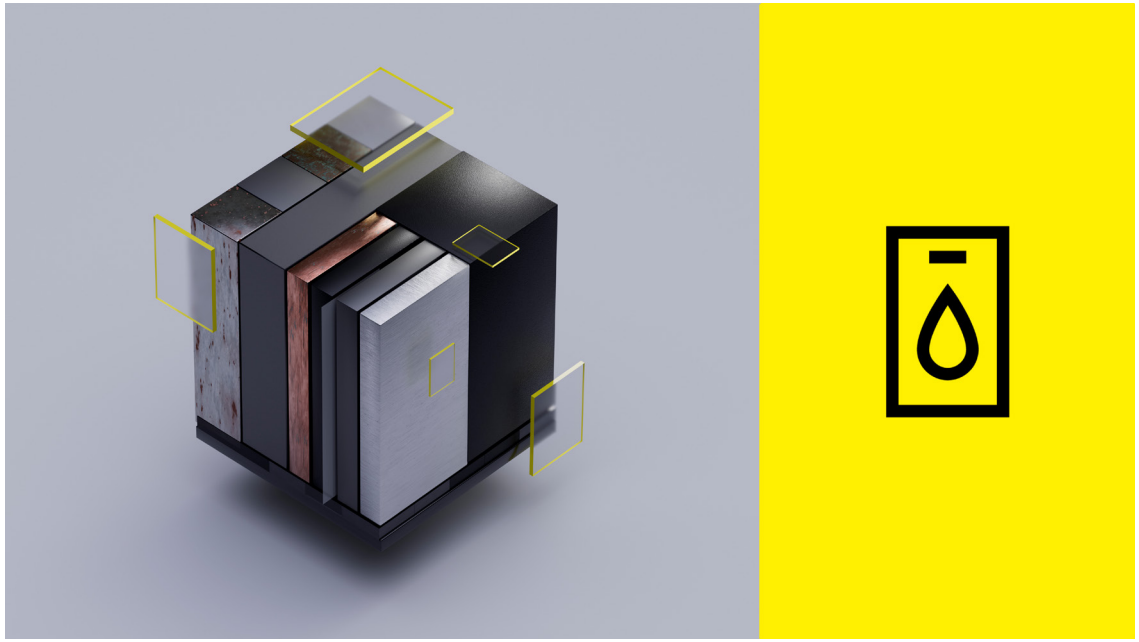
[Arium® Smart Station Video]

Separation technology is often an important element in laboratory-based research, development and analytics across battery manufacturing applications and workflows.

From the isolation of particles to sample preparation of wastewater and the concentration of elements, not all filters and membranes are alike. It is important that membranes do not interfere with the analysis and are resistant to the solvents and diluents used.

With over 150 years of experience in manufacturing filters and membranes, Sartorius is one of the industry's market leaders in lab filtration.

- Glass microfiber filters as battery separators
- Membranes and filter papers to separate particles of interest
- Pressure filters to clarify wastewater
- Syringe filters for sample preparation of analytics
- Paper coated with polyethylene to keep your lab clean



Binder-free glass microfiber filters are inert, resistant to most chemicals, and can withstand temperatures of up to 500°C.

It makes them ideal not only for analytical and gravimetric analyses, such as wastewater analysis, but also to **separate cathode and anode in battery development**.

- Manufactured from 100 % borosilicate glass, withstands temperatures up to 500°C
- 100 % binder free
- pH stable
- Supplied as discs, sheets and customized shapes

Filters may be used to separate specific constituents for further chemical or physical characterization in basic research, recycling or non-conformity testing. Examples include, sparks during vents and combustion caused by thermal runaways, salts (LIPF6, LiBF4) contained in the electrolyte that may not have completely dissolved in the solvents, foreign particles detected during QC requiring further investigation or for size discrimination in the black mass.

The Sartorius laboratory filtration products are engineered to support every filtration application, from air, to aqueous, to caustic solvents.

Benefit from the Sartorius quality: ISO9001 and ISO14001 compliance for exceptional product quality, performance and product uniformity that is critical for continued success.

- Membrane filters made of Regenerated Cellulose RC, Polyamide PA, Polytetrafluoroethylene PTFE, or Polycarbonate PC
- Quartz Microfiber filters are especially suited for emission monitoring at high temperatures and wherever filters of the highest purity are needed
- Filter papers for multiple quantitative, qualitative, and gravimetric analyses like ash content, precipitates, routine work, and phase separation

Groundwater is a drinking water source and consequently must be monitored closely to confirm its suitability for consumption. Unfortunately, groundwater can become contaminated with heavy metals from landfill and industrial site wastewater.

Continuous monitoring of the wastewater emerging from refining or battery production sites is critical for detecting potential contaminants that leach into the surrounding groundwater, compromising its quality and safety.

The Sartolab® P20 pressure filter can be used for sterile filtration or clarification of media, solvent mixtures, and aqueous solutions. The filters can process batches up to 10 L at a time. These pressure **filters can help workflows to detect heavy metals** and chlorine in water.

- Other benefits include:
- Highest flow rates with a large surface of filtration (20 cm^2)
- Version available with a prefilter for particle-high-loaded solutions

Related Resources

[Filter Papers Brochure]
Sartorius supplies you with a broad range of filter papers for myriad filtration tasks and supports you in solving all your filtration challenges.

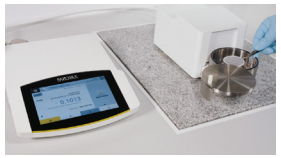
[Residue on Ignition – Application Highlight]
Residue on Ignition is a back-weighing application used to determine the ratio of inorganic and organic components in samples.

[Gravimetric Analysis of Particulates Emissions]
The particulate matter quantity is calculated from the difference between the weight of the initially unpolluted filter and its weight when subsequently loaded with emission particulates.

[Polyethylene-Coated Paper for Surface Protection]
The LabSorb is a highly absorbent paper coated on one side with polyethylene. It is highly effective for absorbing liquids or keeping black mass away from your workstation.

Supporting Products

[Cubis® II Filter Weighing]
Air quality is an important topic to reach carbon neutrality. Filter weighing is a reference method to determine the level of air pollution.



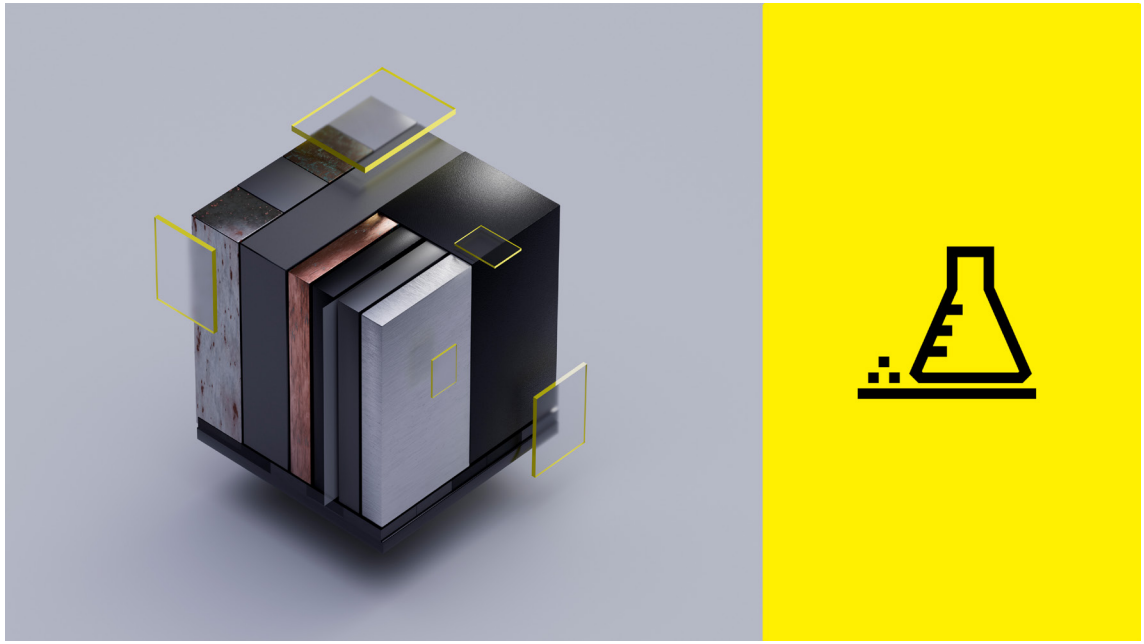
[Filtration Holders & Support Accessories]
Variety of custom designed filter holders and support pieces that are engineered for use with our many filters. Review our complete line of filter support and accessories.

[Sample Preparation for Analytics]
Minisart® PP Syringe Filters offer essential elimination of particle from the sample prior to HPLC | UHPLC | ICP-MS or other chromatographic analysis.

Innovation and R&D in battery development are highly dependent on the availability and quality of raw materials. The quality and longevity of the final battery is determined by the quality of the components used. Additionally, increased and more sensitive quality controls are required to comply with new regulations and changing environmental standards.

Both QC and R&D require routine and detailed characterization of individual components or interactions.

Sartorius analytical sample preparation solutions combine quality and reliability to provide the very best in all your analytical preparation needs.



Studies have shown that up to 80% of the challenges associated with HPLC and other chromatography analyses can be avoided by improving water quality. Ultrapure water is necessary to create instrument blanks, calibration curves, and standard solutions in chromatography and any other applications.

Ultrapure water with traces of elements below the detection limit is essential for sample preparation to avoid any false positive results.

The Arium® Pro UV is a flexible and modular system, providing a reliable source of ultrapure water.

- System selection specifically for your application
- Meet or exceed ASTM Type 1 water quality to increase sensitivity of analytical results
- Display with touch function and intuitive menu
- Favorites function with direct access for recurring volumes
- Perfect integration into any laboratory

The preparation of standard series with defined concentrations is a routine step for quantitative methods. However, the process can be complicated, error-prone, and expensive because it is nearly impossible to accurately weigh a solid for a pre-defined volume of solvent.

Customized Q-App software connects your Cubis® high-capacity micro balance directly to your dispenser and **accurately calculates the required solvent** volume based on the quantity of solid weighed.

- Accurate dispensing of solvent with a weighing accuracy of up to 5 decimal places and a dispenser motor providing 48,000-step resolution
- Software-guided workflow and digital record of the entire process and all parameters
- Automated and fast preparation of 100% consistent standard series, plus documentation
- Motorized levelling function & touch-free automated draft shield

Using inadequate tools to pipette solvents can lead to unintentional consequences, such as aerosol contamination of your sample or pipette, or dissolution of the tip by the solvent. Our pipettes and tips are highly durable and suitable for pipetting most solvents.

Proline® Plus mechanical pipettes offer **comfort and quality for everyday manual pipetting**. It combines durable construction with ease and lightness of use. Easy volume adjustment with click stop system and big, forward facing, volume helps in choosing the correct volume.

- Wide variety of adjustable single and multi-channel models as well as fixed single-channel
- Volume range from 3 µL to 10 mL
- Materials have high chemical resistance to secure long life-time of the pipette
- Safe-Cone Filters available for models > 10 µL; They help to prevent aerosols and fluids from penetrating the pipette, also in case of over-aspiration

Syringe filters are the method of choice for filtration of HPLC samples for reproducible and clean particulate-removal.

Featuring pore sizes of 0.2 µm or 0.45 µm and a selection of special membrane materials and diameters, the proven Minisart® with a polypropylene housing reliably **removes particles, without adding extractables or leachables** to your sample. Each Minisart® RC pack now comes with a lot-specific HPLC purity certificate.

- Minisart® NY with a nylon membrane and Minisart® GF+NY with the purest glass fiber prefilter and nylon membrane are optimally designed for the filtration of alkaline aqueous solutions and solvents. Their unique purity compared with other common polyamide membranes ensures clean samples.
- Minisart® RC with a regenerated cellulose membrane has been optimized for aqueous solutions and solvents. The high chemical compatibility permits it to be used in a wide variety of applications. Minisart® RC is resistant to DMSO, other amides, ketones, esters and ether compounds.

Related Resources

[Preparation of GC and HPLC standards]
Reverse pipetting and pre-wetting of the pipette tip are necessary to accurately pipette ethanol, methanol, acetone, or volatile liquids.

[The Story Behind a Game-Changing Collaboration in Accurate Titration]
Partnership between Cubis® II balances & Metrohm's OMNIS platform. Easy-to-use system complying with highest data integrity requirements

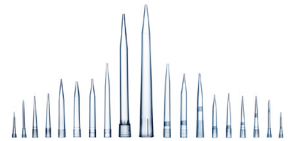
[Ultrapure Water for Trace Analysis With ICP-MS]
Test series ensure that the Arium pro UV systems generate a high purity water which can be used for trace analysis of elements by ICP-MS.

Supporting Products

[Cubis® II Ultra Micro & Micro Balance]
The development of analytical methods with lower detection and quantification limits LOD/LOQ, especially in the field of battery optimization, starts with evolutive and highly sensitive preparation instruments.

[Ash-free Filter Papers for Quantitative and Gravimetric Analysis]
Sartorius offers a large portfolio of top quality, ash-free (ash content <0.01%), 100% cotton fiber linter filters designed especially for quantitative and gravimetric analysis.

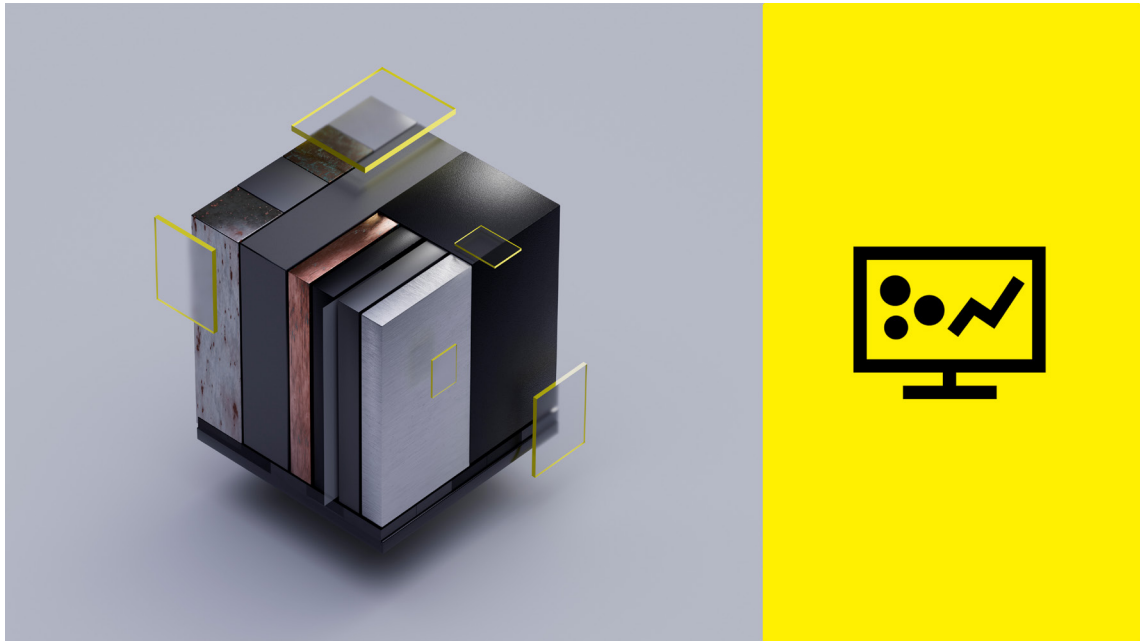
[Pipette Tips]
The best fitting pipette tips for Sartorius pipettes are Optifit standard pipette tips and Safetyspace® Filter Tips. They ensure the performance of Sartorius pipettes and repeatability of your results like no other tip can.



Battery production involves the collection of an astronomical amount of data over the entire process: materials discovery, solid and liquid electrolytes, and electrode and cell manufacturing.
Some research communities generate more than 1 petabyte of data per year (1 million Gigabytes - 10^{15} byte), while some industries report more than 700 million characterization data per day.

Data sets that are not properly analyzed and interpreted can lead to incorrect decisions, delays and even costly recalls. Incomplete datasets can also lead to wrong predictions.

Sartorius Umetrics® Suite of data analytics software gives you access to powerful yet easy-to-use tools to optimize your manufacturing processes, bring quality products to market faster and increase your production yield. Across the entire Umetrics® Suite of software, you'll find clear data visualization, extensive wizard functionality and customizable plots that maximize usability and versatility, without being overly complicated.

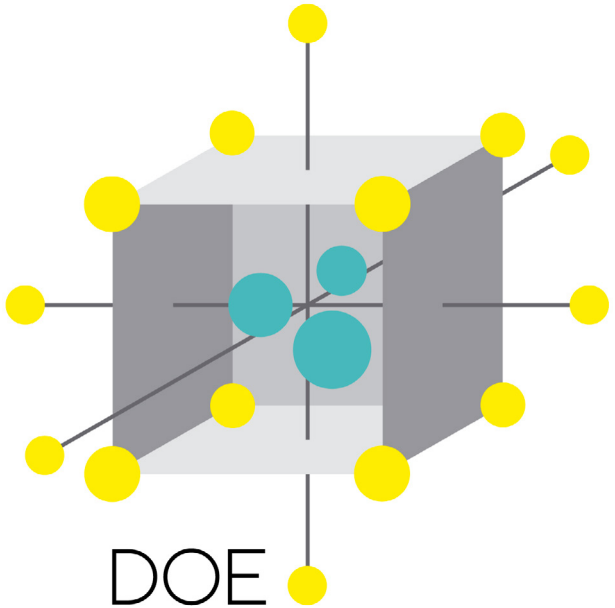


Design of experiment (DOE) is an important and useful tool that can add extra confidence with built-in knowledge and understanding for setting up new experiments to verify or challenge existing knowledge or testing the boundaries for new development.

MODDE® does a lot more than ordinary DOE software. Its built-in guidance and quality measures ensure users make the best experimental choices, so you get the most relevant and effective outcomes. MODDE® is designed to help experimentalists get DOE right from the start.

With an efficient DOE approach to problem-solving, you can:

- Significantly reduce experimental costs
- De-risk projects and increase success rates
- Make the most of valuable samples, raw materials and human resources
- Accelerate progress and time-to-market while keeping within budget



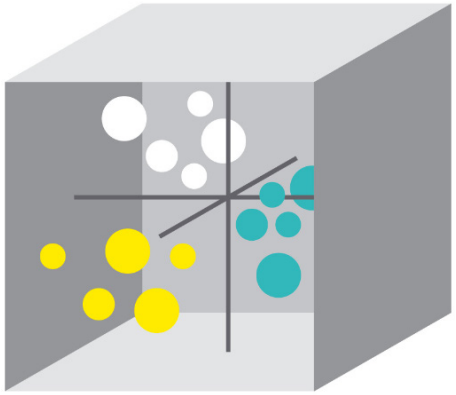
This data from multi-step manufacturing process must be processed and exploited to gain better understanding and make the right decision at the right moment. It is very common to use multivariate analysis, a trusted Artificial Intelligence AI & Machine learning ML tool and very useful for getting a comprehensive overview, making quality predictions or monitoring the entire production line in real-time.

Adding transparency to AI&ML is very important for the understanding and continuous improvement work.

SIMCA® Multivariate Data Analysis software is the benchmark data analytics tool for scientists, engineers, researchers, product developers and others striving to gain information from large quantities of data.

This data analysis software tool:

- Enables easy production interpretation and analysis of large process data sets
- Provides a summary of all types of process information, key trends, correlations and patterns all in one convenient data model
- Permits faster troubleshooting
- Reduces the risk of costly downtime
- Creates deployable multivariate calibration models for further predictions.



MVDA

Multivariate Data Analysis

Related Resources

[Case study – Manufacturer of flat panel display]
AU Optronics gets higher margins using predictive and prescriptive multivariate data analysis

[Blog How Embedded Data Analytics Improves Raman Instrument Success]
Data analytics solutions can be connected seamlessly with instruments for spectroscopy, NIR, Raman, mass spectrometry or chromatography.

[Case study – Energy Provider- FINAL VERIFICATION]
Predictive maintenance with SIMCA promises significant savings for a major energy provider.

Supporting Products

[Data Connectivity with Cubis® II Lab Balance]
Cubis® II MCA Lab Balance interface eliminates manual data transcription errors and enhances your data quality and integrity.

[Data Analytics Training & Courses]
Give your team the advantage of in-house training, which brings some of our top courses on data analytics to your doorstep.

[Predicting the product lifetime of a battery in production with SIMCA-online]
Our proprietary multivariate prediction technology gives you early warning of process anomalies that will affect the end product.

MVDA
Multivariate Data Analysis

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