



SciAps

a powerful combination

Materials characterization toolbox

product – measurement – technology – applications – features



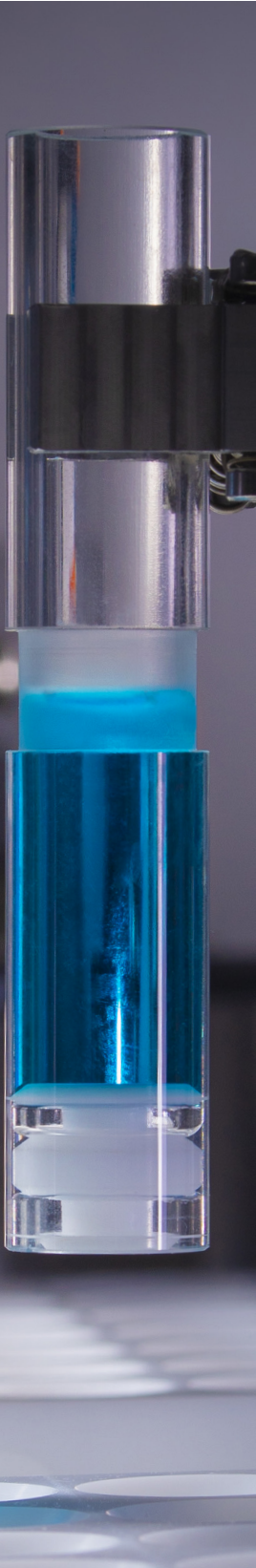
Laser diffraction • Light scattering • Imaging • Near infra-red • X-ray fluorescence
X-ray diffraction • Physisorption • Chemisorption • Mercury intrusion porosimetry • Capillary flow porometry
Powder rheology • Gravity sedimentation air permeability

Particle size, stability, concentration, and shape

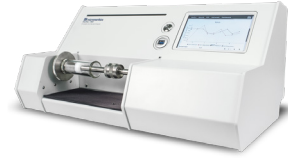


Product	Mastersizer 3000+	Hydro Insight	Morphologi 4/4-ID	SediGraph III Plus
What does it measure?	Particle size	Particle size, Shape, Appearance	Chemical identification, Particle shape, Particle size	Particle size
Technologies used	Laser diffraction	Dynamic imaging	Laser diffraction	X-ray Monitoring of gravity sedimentation
What is it used for?	- Measuring the size distribution of suspensions, emulsions and dry powders from 10nm to 3500µm - Controlling powder properties such as wettability, bulk density, powder flow and solubility - Optimizing suspension and emulsion rheology - Automated particle size distribution (PSD) measurements	- Sits alongside Mastersizer 3000+ collecting images of particles - Providing quantitative information about particle size and shape covering the size range from 1µm to 800µm - Helps in method design and simplifies troubleshooting	- Size measurement of non-spherical particles such as needle shaped crystals from 0.5µm to 1000µm - Measurement of shape differences where particle size alone does not allow differentiation - Detection and enumeration of agglomerates, oversized particles and contaminant particles - Automation of manual methods such as microscopy - Physical characterization of individual components within a mixture - Cross-validation of particle size measurements such as laser diffraction	- Measuring the size distribution of suspensions from 100 nm to 300 µm - Controlling powder properties to yield desired pore structures and surface areas - Particle size of cement affects setting time and strength characteristics of finished concrete and cement.
What is special about this product?	- Quality data you can rely on - Class-leading particle sizing performance with added intelligence - Intuitive software with built-in expertise to guide you - Flexible reporting to display your data the way you want - Fast smart swap between wet and dry units - Rapid and effective wet dispersion for dispersions and emulsions - Fast, reliable particle size measurement of fragile and cohesive dry powders - Unique adaptive diffraction to separate transient from steady state data - Smart Manager Enabled 	- High-speed, high resolution dynamic imaging technology 127-frames-per-second digital camera with up to 5 megapixel resolution - Imaging of individual particles and liquid particle dispersions - Thumbnail images saved for post-run viewing - Quantitative data on particle size and shape, including particle width and elongation data	- Measures particle size, shape and chemical identity in one platform - Integrated dry powder dispersion unit automates sample preparation for consistent measurements - Versatile sample presentation accessories for measuring suspended and filtered samples - Simple SOP operation from sample dispersion through to size, shape and chemical analysis - Automatic selection, targeting and chemical classification of thousands of individual particles - Powerful and intuitive software interface making both visual and statistical interpretation of your data easier than ever	- Large (50 mL dispersed) volume for representative sampling of heterogeneous materials - Complete particle accounting – including particles outside the direct measurement range - Available automation: measure up to 18 samples unattended - Conforms to ISO 13317-3, ASTM B761, ASTM C958, and ASTM C1730 - QC/QA of mined materials such as calcium carbonate and kaolin clay



	Zetasizer Advance	NanoSight Pro	SAS	Product
	Zeta potential, Particle size, Particle concentration, Molecular size, Molecular weight, Protein mobility	Particle concentration, Particle size	Average particle size, Specific surface area	What does it measure?
	Dynamic Light scattering, Electrophoretic light scattering, Static light scattering	Nanoparticle tracking analysis	Air Permeability mean size	Technologies used
	- Measuring the size of colloids, nanoparticles and molecules in solution from 0.6nm to 15µm - Determining the molecular weight of polymers and proteins - Optimizing and predicting dispersion stability of colloids and biomolecules - Monitoring molecular aggregation and particle flocculation processes	- Detection and visualization of nanoparticle populations on a particle-by-particle basis from 10nm to 1µm - Measurement of particle size and particle concentration - Tracking of aggregation and dissolution processes in real time - Applications include nanotoxicology, biomarker detection and drug delivery research - Fluorescence mode to provide differentiation of labeled or naturally fluorescing particles	- Measures average particle size and specific surface area by air permeability. - Automated direct replacement for the obsolete Fisher Model 95 SSS. - Particle size for heavy/dense metal powders that are challenging to pump in a liquid suspension	What is it used for?
	- Technologies include NIBS, M3-PALS, DLS, ELS - Simplicity of operation means minimal training and robust results - High sensitivity for nanoparticles, proteins, and macromolecules - High optical quality and temperature control ensures accuracy and repeatability - MPT-3 Autotitrator option - Adaptive Correlation to enhance repeatability - MADLS for angle independent size analysis with improved precision and resolution. Also used for accurate particle concentration measurements - M3-PAL and constant current mode for Zeta potential to reduce errors - NEW Zetasizer sample assistant to free the operator from manually changing samples	- Simultaneous measurement of multiple characteristics - Visual validation of results gives extra confidence - User friendly software with easy set-up of SOPs for routine use - Minimal sample preparation - Automated multiple sample analysis when used with a syringe pump or autosampler - Minimal consumables reduce running costs on a day-to-day basis - High resolution particle sizing technique, ideal for polydisperse systems - New practical and easy to use NS Xplorer software with embedded smart features	- Standalone operation with intuitive touchscreen - High-quality mass flow controller and high-sensitivity transducers for the highest accuracy in air pressure control and monitoring - Quick operation: live data monitoring and results generated in minutes - Fisher mapping tool available to report equivalent Fisher Number results - Compliant with ASTM standard B330-12, B330-15, C721-15, and E2980-15	What is special about this product?

Powder flow, density and porosity

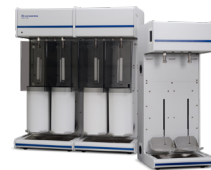


Product	FT4	AccuPyc	GeoPyc
What does it measure?	Powder behavior during processing	Skeletal density	Envelope & bulk density
Technologies used	Powder rheology	Gas displacement pycnometry	Solid displacement pycnometry
What is it used for?	- Predicting processing issues such as blockages, clumping, inconsistent feeding, mixing and packing. This can prevent waste and processing downtime. - Offers the tools to optimize powder performance in specific processes to obtain best quality and yield of product	- Measuring the volume of a sample using gas displacement - Determining the skeletal density of solids and powders, as well as slurries	- Measuring the volume of a free-flowing powder displaced by solid materials - Determining the envelope density of solids - Measuring the compacted volume of a powder under controlled conditions
What is special about this product?	- Provides a full picture of powder behavior and expected issues in every step of manufacturing processes, in a single instrument - Torque and force measurement ranges defined for powder needs and typical processing conditions - Carries 30 years experience supporting applications	- Temperature controlled from 4°C to 60°C, stable to $\pm 0.025^\circ\text{C}$ - Demonstrating highest accuracy available for commercial gas pycnometer - PowderSafe mode for materials with low bulk density - Hinged self-aligning lid closes to same position every test, ensuring repeatability	- Provides fast, highly accurate, and reproducible results while maintaining the integrity of the sample. - Repeatability and reproducibility are achieved by a controlled method of compaction - Combined with AccuPyc provides total pore volume and percent porosity





Porosimetry, surface area, and structure

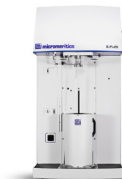


Product	AutoPore V	AccuPore	Gemini	TriStar II Plus	ASAP 2425/2460
What does it measure?	Pore volume distribution, Bulk and apparent density, Porosity	Through-pore size distribution in sheets and membranes	Surface area, pore volume, and pore size distribution (on models p and t)	Surface area, pore volume, and pore size distribution	Surface area and pore size distribution
Technologies used	Mercury intrusion porosimetry	Capillary flow porometry	Physisorption	Physisorption	Physisorption
What is it used for?	- Measuring pore volume as a function of pore opening size from 3 nm to 1100 μm - Calculating pore area as a function of pore opening size - Determining bulk and apparent skeletal density, as well as percent porosity	- Bubble point (largest pore) - Mean flow pore - Smallest pore - Pore size distribution	Rapid measurement of BET surface area, pore size/volume of solids and powders	Measuring BET surface area, pore size/volume of solids and powders	Measuring BET surface area, pore size/volume of solids and powders
What is special about this product?	- High resolution analysis for macroporous and mesoporous materials in both intrusion and extrusion analyses - New enhancements focus on improving operator safety - Complies with the ASTM methods D4284, D4404, and D6761, as well as ISO 15901-1 and USP <267>	- SmartFlow system using two modes of pressure control: pressure ramp and pressure step - Different analysis modes capability for sample preservation - Adaptive gas supply, using low-pressure compressor then switching to bottled high-pressure gas when needed for cost savings - Flexible sample handling, supports samples with diameters of 13 mm, 25 mm, or 47 mm in the same chamber - Built-in touchscreen, remote access via PC/network - Data can be integrated with MIP using MicroActive - Wide applications including batteries, filtration, non-wovens, ceramics, and metals	- Unique twin design helps to minimize thermal fluctuations and free space errors - Low surface area measurement with nitrogen - Adaptive rate dosing and servo control for fast results - Model 2390a: fast single and multipoint BET - Model 2390p: Same as model 2390a plus continuous Po measurement for pore size distribution - Model 2390t: Same as model 2390p plus larger Dewar and longer sample tubes for full adsorption/desorption isotherms - Nondestructive analysis	- Three port analysis instrument for high throughput - Analysis ports can be independent or simultaneous - Dedicated Po tube for continuous saturation pressure measurement for accurate isotherm - Supports a broad range of non-corrosive gases (N_2, Ar, CO_2, hydrocarbons, etc.) - Up to four gases can be connected for easy gas switching - Low surface area capability with Kr option - High-detail isotherm - Interactive and easy to use MicroActive software included - Confirm software supporting 21 CFR Part 11 available for controlled environments - Nondestructive analysis	- High-performance and high sample throughput instruments - ASAP 2425: Six port analysis instrument, twelve port built in vacuum degas station - ASAP 2460: Two -port master unit, capable of expanding up to six - Analysis ports independently operated - Kr and micropore options available - High capacity Dewar for long analysis time - Up to five gas inlets, with one dedicated to helium for free space - Nondestructive analysis



ASAP 2020 Plus	3Flex	Empyrean	Aeris	Product
Surface area, pore size distribution, vapor adsorption	Surface area, pore size distribution, vapor adsorption	Crystalline phase crystallographic structure materials microstructure Thin film structure Epitaxial strain	Crystalline phase	What does it measure?
Physisorption	Physisorption	X-ray diffraction, reflectometry, SAXS, CT	X-ray diffraction, reflectometry	Technologies used
- Measuring BET surface area of micro or mesoporous materials - Determining PSD of pores from 3.5 - 1000 Angstroms - Collecting vapor adsorption isotherms - Collecting gaseous isotherms of other industrial and research species	- Measuring BET surface area of micro or mesoporous materials - Determining PSD of pores from 3.5 - 1000 Angstroms - Collecting vapor adsorption isotherms - Collecting gaseous isotherms of other industrial and research species	- Phase identification - Phase quantification - Thin film characterization - Epitaxial layer analysis - Bulk material characterization - Non-ambient phase change - Battery in-operando study - In-situ phase change - Stress and residual strain - Crystallographic texture 3D flaw detection - Nanoparticle analysis	- Phase identification and quantification in reflection, transmission or grazing incidence - Thin film analysis - Stress measurement	What is it used for?
- Single port analysis instrument with two degas ports for low throughput laboratory applications - Upgradeable to allow for vapor or chemisorption analysis - Nondestructive analysis - Sample preparation and analysis in a single cabinet with separate vacuum systems	- Three port analysis instrument for conducting high-end research - Upgradeable to allow chemisorption analysis or corrosion resistance - Achieves the lowest vacuum pressure in the industry - Can measure the widest variety of gases and vapors in the industry - Nondestructive analysis - Largest library of DFT models for pore size calculations commercially available	- Most versatile and productive XRD system with the highest data and product quality on the market - Highest angular resolution of any laboratory powder diffractometer and delivers data closest to synchrotron quality - Widest range of non-ambient and in-situ environments - All relevant diffraction geometries (reflection, transmission, capillary, microdiffraction, Debye-Scherrer) with batch automation - Wide selection of components to match every customer - Cost-effective options for SAXS and CT configurations - Customizable and special solutions - Full selection of analysis software packages including HighScore+	- Compact X-ray diffractometer - External loading - intuitive operation, accessible to non-experts - Touchscreen user interface lets you proceed effortlessly through the measurement process of your samples - Low cost of ownership, limited infrastructure requirements no need for compressed air or external cooling, lowest power consumption - X-ray tube has a virtually unlimited lifetime - Automation capabilities - HighScore software for ease of analysis - Upgradable for power, grazing incidence, transmission, non-ambience	What is special about this product?

Activity

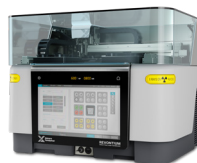
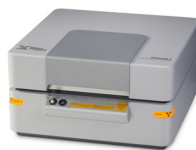


Product	AutoChem	ChemiSorb Auto	ASAP 2020 Plus Chemi	3Flex Chemi
What does it measure?	- Active surface area and dispersion - Temperature Programmed Reduction (TPR) - Temperature Programmed Oxidation (TPO) - Temperature Programmed Desorption (TPD) - Temperature Programmed Surface Reaction (TPSR) - Breakthrough Analysis - Single point BET Surface Area (BET)	- Active surface area and dispersion - Temperature Programmed Reduction (TPR) - Temperature Programmed Oxidation (TPO) - Temperature Programmed Desorption (TPD) - Temperature Programmed Surface Reaction (TPSR) - Single point BET Surface Area (BET)	- Static chemisorption at various temperatures to calculate heats of adsorption - Active surface area and dispersion	- Active surface area and dispersion - Temperature Programmed Reduction (TPR) - Temperature Programmed Oxidation (TPO) - Temperature Programmed Desorption (TPD) - Temperature Programmed Surface Reaction (TPSR)
Technologies used	Dynamic chemisorption	Dynamic chemisorption	Static chemisorption	Static & dynamic chemisorption
What is it used for?	- Catalyst characterization and research - Active particle size - Metallic active surface area - H₂ Quantity Consumption - Activation Behavior - Characterize carbon deposition - Number of acid/basic sites - Heat of desorption - Evaluate binding affinity - Evaluate catalyst reactivity - Breakthrough curve - Single point surface area	- Catalyst characterization and evaluation - Active particle size - Metallic active surface area - H₂ Quantity Consumption - Activation Behavior - Characterize carbon deposition - Number of acid/basic sites - Heat of desorption - Evaluate binding affinity - Evaluate catalyst reactivity - Single point surface area	- Characterization of catalysts - Metal dispersion - Crystal size	- Characterization of catalysts - Metal dispersion - Crystal size - Reduction temperature - Number of basic / acidic sites - Desorption temperature
What is special about this product?	- Can characterize catalysts in-situ - Capable of performing single point BET surface area - Automatic gas calibration with patented blending valve - Can use organic solvents to perform TPSR - Upgradeable to a corrosion resistant version to work with challenging gases & vapors - Vortex cooler increases sample throughput by rapidly cooling the furnace - AutoTrap eliminates use of the slush bath as a cold trap to capture vapors generated during analysis	- Can characterize catalysts in-situ - Capable of performing single point BET surface area - Automatic gas calibration with patented blending valve - Zeolite trap with MicroPrep option to replace cold trap	- Perform both physisorption and chemisorption on the same instrument - Switching between physisorption and chemisorption only takes a few minutes	- Perform both physisorption and chemisorption on the same instrument - Can analyze the widest variety of gases for chemisorption in the industry - Fully characterize catalyst for adsorption in one instrument



Breakthrough Analyzer (BTA)	Flow Reactor (FR-100)	In-Situ Catalyst Characterization (ICCS)	Product
Dynamic adsorption of gas mixtures; selective adsorption	Evaluation of catalytic activity and performance	- Active surface area and dispersion - Temperature Programmed Reduction (TPR) - Temperature Programmed Oxidation (TPO) - Temperature Programmed Desorption (TPD) - Temperature Programmed Surface Reaction (TPSR)	What does it measure?
Breakthrough analysis	Catalysis/Chemical Reactions	Dynamic chemisorption	Technologies used
- Conducting small-scale experiments for industrial applications; - Determination of breakthrough curves - Investigation of kinetic performance of adsorbents - Investigation of co-adsorption and displacement - Determination of sorption selectivity - High resolution separations using small sample quantities - Dynamic adsorption and desorption experiments - Determination of single- and multi-component adsorption data - Carbon capture using porous materials	- Evaluation of catalytic activity and performance - Testing of chemical reaction and optimization - Evaluation performance of new catalysts or feedstocks - Process optimization - Kinetics study	- Fractional coverage - Active particle size - Metallic active surface area - H2 Quantity Consumption - Activation Behavior - Characterize carbon deposition - Number of acid/basic sites - Heat of desorption - Evaluate binding affinity - Evaluate catalyst reactivity	What is it used for?
- Provides users an off the shelf unit to perform complex dynamic adsorption experiments - Software saves users time in equipment setup and analysis; - Patented high performance blending valves for the precise control of both composition and flow rate, while minimizing dead volume - Highest accuracy and reproducibility - Pressure control up to 30 bar - Automated software for completely unattended operation - Automated execution of multiple programmed experiments including complete data acquisition - The system includes optional add-ons for enhanced functionality; factory installed or future instrument upgrades, including ECR	- Configured as a single or dual reactor system to meet research demands - Patented pressure control valve allows for operation up to 100 bar in pressure - Minimal volume liquid/gas and liquid/liquid/gas separator used to condense vapors from product stream - Automated software for completely unattended operation - Integrated safety systems featuring alarms, fail-safes, and automated response to undesired conditions - Benchtop system that allows testing catalyst samples from a few milligrams to several grams - Automated execution of multiple programmed experiments including complete data acquisition - Flexible configuration to address key reactions: Fischer-Tropsch, ammonia synthesis/decomposition, methanol synthesis, steam/dry reforming, Sabatier process, hydrogenation, and more - The system includes optional add-ons for enhanced functionality; factory installed or future instrument upgrades allowing for complete system customization	- Connected to any existing laboratory reactor with furnace and temperature control - High pressure capability (up to 20 bar) - In-situ characterization before and after the reaction, with no risk of material exposure to the external environment - Automated cold trap with a Peltier system to efficiently remove condensable fluids, such as water produced during the reduction of oxides	What is special about this product?

Elemental composition



Product	Epsilon 1	Epsilon 4	Revontium	Zetium
What does it measure?	Elemental composition Film thickness	Elemental composition Film thickness	Elemental composition Film thickness	Elemental composition Film thickness
Technologies used	X-ray fluorescence (XRF)	X-ray fluorescence (XRF)	X-ray fluorescence (XRF)	X-ray fluorescence (XRF)
What is it used for?	- Quantification of elements from Na to Am with lowest limits of detection for most elements - Online elemental analysis of solids, powders and liquids	- Quantification of elements C-Am with lowest limits of detection for most elements - All materials in solid, powder or liquid form - Detection and measurement of elements in thin films including film thickness measurement	- Quantification of elements Na-Am with lowest limits of detection for most elements - All materials, in solid, powder or liquid form - Detection and measurement of elements in thin films including film thickness measurement	- Quantification of elements Be-Am with superior lowest limits of detection for most elements - All materials in solid, powder or liquid form - Detection and measurement of elements in thin films including film thickness measurement - Small spot mapping for all elements across the range
What is special about this product?	- All measurements in air. No need for helium or vacuum pump - Highest analytical performance in its class - Completely X-ray safe operation - Built-in drift monitor for best accuracy and easy operation - Creating unlimited applications - Automatic Program Selection (APS) for easy operation - Supported by expertise and CRMs for all materials types	- Can handle a large variety of sample sizes, from less than a gram up to larger bulk samples, including irregularly shaped objects - Small footprint allows it to be sited near to, or even next to, the production line for process control - Automatable - Close coupling of Tube-sample-detector for optimized sensitivity - Automatic and builtin drift monitor for best accuracy - Unique combination of 10 position sample changer with spinner - Creating unlimited applications - Automatic Program Selection (APS) for easy operation - Supported by expertise and CRMs for all materials types	- High sample throughput, speedy analysis, responsive feedback - Can handle a large variety of sample sizes - Small footprint allows it to be sited near to, or even next to, the production line for process control - Automatable - Close coupling of Tube-sample-detector for optimized sensitivity - Automatic and built in drift monitor for best accuracy - Unique combination of 32 position sample changer with spinner - Patented X-ray tube with ZETA technology - Power consumption is only 200 watts - Supported by expertise and CRMs for all materials types - Cutting edge SuperQ software - Smart Manager connectivity	- Combination of ED and WD reduce measurement time up to 50% - Batch automation - Simple & Intuitive SuperQ software with the Virtual Analyst - FastScan Omnian program standardless analysis - Largest range of bespoke and in-house certified calibration standards - Dust removal device minimizes contamination and maximizes instrument uptime - SST R-MAX tube with CHI-BLUE window coating for increased X-ray tube durability and less drifting - Small-volume airlock design for rapid cycling of samples into vacuum, or low He consumption for liquids analysis - Supported by expertise and CRMs for all materials types



SciAps X Series	SciAps Z Series	reveNIR	Powerhouse X	Product
Elemental concentrations	Elemental concentrations	Mineral identification	Elemental Concentrations	What does it measure?
X-ray Fluorescence (XRF)	Laser Induced Breakdown Spectroscopy (LIBS)	Vis-NIR	Field Portable XRF	Technologies used
XRF Spectrometry uses Empirical Methods (calibration curves using standards similar in property to the unknown) or Fundamental Parameters (FP) to arrive at quantitative elemental analysis. It is used for analysis on Alloys (NDT/ PMI), Low Atomic Number Elements, Geochemistry / Mining / Soil Analysis, and Compliance / Regulatory Elements.	LIBS has been used for more than 30 years as a laboratory technique, capable of analyzing any element in the periodic table. Recently, the technique has been miniaturized into a handheld device (HH LIBS) capable of analyzing any element, depending on the spectrometer range chosen for the device	Perfect for reconnaissance, core logging, rock chip analysis, and expanding mapping areas. The SciAps reveNIR allows users to analyze outcrops, measure various positions, and assess the mineralogy of geological formations effortlessly.	The REE unit is used for in-field analysis of rare earth elements. The PM unit (40 kv) is used for Precious Metals, and the RoHS (50 kv) is used for Restriction of Hazardous Substances like Lead, Mercury, and Cadmium.	What is it used for?
SciAps analyzers support “apps” or modes optimized for particular tasks - e.g. “Aluminum App”, “Residuals App”, “Sulfidic Corrosion App”, etc. These define which elements are measured, how long the measurement takes, what detection limits are needed, making analysis easy on users. Also, handheld instruments can go wherever the user needs it, in the field or in the lab.	Unlike XRF analyzers, there’s no sensitive detector element near the front window. The Z uses a virtually impenetrable “tough as Pyrex” quartz window. SciAps analyzers support “apps” or modes optimized for particular tasks—e.g. “Alloy”, “Carbon”, “Geochem”, etc. These define which elements are measured, how long the measurement takes, what detection limits are needed, making analysis easy on users. Also, handheld instruments can go wherever the user needs it, in the field or in the lab.	There is no other handheld technology available since the discontinuation of the Halo. This is the updated version of Halo.	The PowerHouse is the first field-portable, fully-shielded benchtop analyzer. It operates for 6+ hours on twin Li-ion batteries or AC power that also recharges the batteries.	What is special about this product?

a powerful
combination



SciAps

The integration of Malvern Panalytical, Micromeritics, and SciAps.

Together we are a powerful and highly complementary combination of market-leading technologies.

We are the toolmakers for the world's most innovative companies, academic institutions, and government laboratories.

More than 92,000 of our instruments are used every day in our customers' laboratories. Customers value us not only for the power of our analytical technologies, but also for the depth of our expertise. We are their partners in discovery.

Customers see the difference when they use our instruments and feel the difference when they deal with our people.

Malvern Panalytical instruments analyze the chemical, physical and structural nature of materials, from proteins to polymers and semiconductors to minerals. Our leading

technologies measure particle size, shape, concentration and zeta potential, biomolecular interactions and stability, elemental concentrations and crystallographic structure.

Micromeritics manufactures systems for the characterization of particles, powders, and porous materials for a wide-range of end markets including catalysts, chemicals, building materials, clean-tech and battery. Our leading technologies measure surface area, porosity, density, adsorption and particle activity.

SciAps specializes in portable X-ray fluorescence (XRF), laser-based (LIBS) and near-infrared (NIR) analyzers to measure any element in any environment. SciAps is the Center of Excellence for our handheld instruments.

Service & Support

Malvern Panalytical provides the global training, service and support you need to continuously drive your analytical processes at the highest level. We help you increase the return on your investment, and ensure that as your analytical requirements grow, we're there to support you.

Our worldwide team of specialists adds value to your business processes by ensuring applications expertise, rapid response, and maximum instrument uptime.

- Proactive local and remote support
- Full and flexible range of service agreements
- Compliance and validation support
- Onsite or classroom-based training courses
- e-Learning training courses and web seminars
- Digital services, including MyStore and My Customer Support Portal
- Sample analysis, method development, and applications consultancy



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