



H.A. Shah & Sons
Trusted partner for total laboratory solutions



DELIVERING
QUALITY To Every SINGLE
CUSTOMER



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OUR MISSION

Our organization is driven towards a single goal: customer satisfaction. We at H. A. Shah & Sons aim to ensure that our market leadership extends far beyond hardware, into turfs like customer loyalty, product diversity, and the establishment of mutual trust between our customers, suppliers, and employees. Our mission is not the quantitative growth of the company but to ensure that through our diversity, speed and quality we are able to bring about an improvement in the quality of life of society at large, by partnering with our customers to create economic opportunities.

OUR VISION

We aspire to become a leading global and national enterprise in the chemical analysis industry and the partner of choice for laboratory devices and solutions.

OUR CORPORATE VALUES

We perform with integrity at all levels and continue to ensure corporate excellence through innovation and focused quality conscious efforts in all our ventures. We strive to play our role as a good corporate citizen, by serving the people and society, for a better tomorrow.

WE SELL WORLD-CLASS PRODUCTS MANUFACTURED BY WORLD-CLASS MANUFACTURERS TO ENSURE THE PERFECT BLEND OF RENOWNED PRODUCTS, GUARANTEED QUALITY AND SUPREME SOLUTIONS.

BOARD OF DIRECTORS

MUSHARRAF BOKHARI CHAIRMAN



“H. A. Shah & Sons is a progressive and forward-thinking organization dedicated to the pursuit of global growth opportunities. With nearly a century of experience in international chemical industry business, we’re experts in forging partnerships to improve performance, customer loyalty, reduce costs, provide the best support services, and build strong, innovative businesses. This has equipped us to drive greater innovation, and create a distinctive corporate identity for ourselves.”

ZULFIQAR BOKHARI CEO



“H. A. Shah & Sons has come a long way since it embarked upon its journey of growth. It has evolved to become the leading name of the industry today, holding the very top niche in its area of operations within Pakistan by representing the world-reknoned market leaders in its product line. It gives me great pride to see the huge success and dynamic force that we have become today.”

WAQAR BOKHARI MANAGING DIRECTOR



“During the past years, we embarked upon a very successful expansion of our business. New banches were added in Bangladesh and UAE, and as of now the company has four major divisions working simultaneoualy: chemical analysis, life sciences, forensic sciences, and chemistries & supplies. Staffed by the industry’s most qualified and capable professionals, the company has also been presented with numerous prestigious achievement awards from our principals for best distributor in the entire south-asian pacific region; this is a mark of how far H. A. Shah & Sons has come since its inception several decades ago.”

ABOUT H. A. SHAH & SONS

We are ISO 9001:2015 certified representatives of the world's leading laboratory equipment manufacturers.

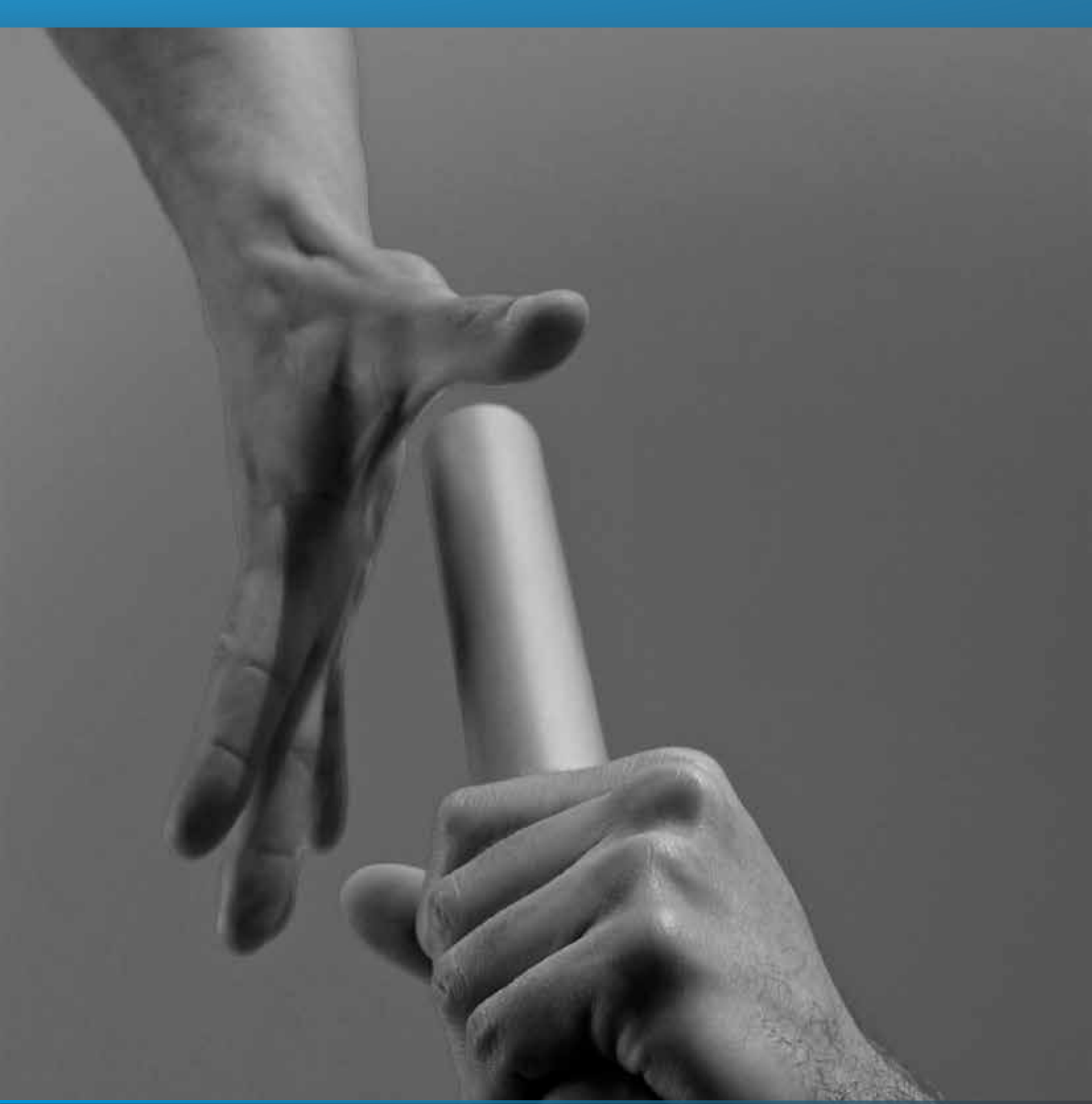
We are science aficionados. We are dedicated to providing you with all the latest and innovative products. We have four separate divisions involved in chemical analysis, life sciences, forensic sciences and chemistries & supplies.

We are hard working. Our trained and assiduous resources are working extremely hard to deliver you with the finest products on time. Our service team is dedicated, visionary and committed so that all your issues get resolved on time and we fulfill our promise of delivering you the finest products.

We are quality epitomized. We embody your trust in our products. All the products being delivered to you are not only world-class but also speak for themselves.

We are fantastic. Our pockets are filled with unflagging enthusiasm. Our customer support team never misses a chance to impress you by lucidly displaying its high level assistance and near to perfect services.

We are perfectionists. For the last forty years we have been depicting our vivid dedication to impersonate perfection. Back in 1975 H. A. Shah & Sons started off as an exclusive country wide distributor of world renowned laboratory manufacturers and till now we have never stopped, never looked back, never despised our conviction; yet still here to bring to our clients services of the finest quality.



OUR BUSINESS PARTNERS



Agilent

Authorized
Distributor

As the world's premier measurement company, Agilent offers the broadest range of innovative measurement solutions in the industry. The company's major businesses are Chemical Analysis, Life Sciences, & Diagnostics and Genomics. At Agilent Research Laboratories, research is conducted that anticipates customer needs and produces breakthroughs that power growth. Agilent's singular focus on measurement helps scientists, researchers and engineers address their toughest challenges with precision and confidence. With the help of their products and services, they are better able to deliver the breakthroughs that make a measurable difference.



www.agilent.com



Agilent

Authorized
Distributor

Formerly Cobalt Light Systems, Now Agilent's Raman Spectroscopy portfolio includes instruments, technologies, and accessories for a wide range of applications. Agilent's Raman instruments use our proprietary SORS and TRS technologies in fields ranging from aviation security, pharmaceutical analysis, and hazardous chemical identification. These technologies enable you to scan through-barriers, increasing the safety for first responders and throughput in quality control.



www.coballight.com



Anton Paar

Producers of high precision measuring and analytical instruments for industry and research, ISO Certified Anton Paar GmbH has had a quality management system according to ISO 9001 since 1994. They are the world leaders in the field of density, concentration measurement, CO₂ and of rheometry. The careful and responsible use of human and natural resources is a central and historical element of Anton Paar's philosophy and therefore the basis for its management system. The primary aim of which is to have a uniform and organized system across the whole concern in order to guarantee customers worldwide product and service quality.



www.anton-paar.com

Quantachrome

INSTRUMENTS

A brand of Anton Paar

The entire Quantachrome company is focused on sharing our expertise in porous material characterization to satisfy your instrument and application support requirements with integrity and first-class personal service. Our highly credentialed team of science and customer service representatives work closely with our customers to deliver an enhanced, individualized level of service upon which we have built our reputation.



www.quantachrome.com

ThermoFisher SCIENTIFIC

Applied Biosystems is one of the various brands under the Life Technologies brand of Thermo Fisher Scientific corporation. Applied Biosystems™ instruments and reagents have been trusted in the lab for over 20 years by the world's top scientists. Researchers who demand efficiency, accuracy, and gold-standard technology use Applied Biosystems integrated systems for sequencing, flow cytometry, and real-time, digital and end point PCR—from sample prep to data analysis.



www.thermofisher.com

GERSTEL

GERSTEL delivers automated solutions focused on the needs of the customer. As a specialist for automated sample preparation and sample introduction, GERSTEL is able to provide custom solutions, including complete solutions that include GC/MS and LC/MS with integrated software control. The innovative MAESTRO software enables intuitive control and flexible, efficient operation for R&D or routine laboratories. Your daily analysis tasks are set up using just a few mouse-clicks.



www.gerstel.com



MILLING SIEVING ASSISTING

RETSCH is active in the fields of homogenizing laboratory samples for analysis as well as particle size analysis of solid substances. On the basis of more than 90 years' experience they have developed into the leading instrument manufacturer in these technologies. Since 1990 RETSCH is part of the continuously growing technology group VERDER and forms the core of the group's Laboratory Division. Other companies belonging to this division are Retsch Technology GmbH, Eltra GmbH and Carbolite Ltd.



www.retsch.com

NETZSCH

The Analyzing & Testing business unit of the NETZSCH Group develops and manufactures a complete high-precision instrument line for thermal analysis and thermophysical properties measurement, as well as offering world class commercial testing services in our laboratories. Our instrumentation is employed for research and quality control in the polymer sector, the chemical industry, the areas of inorganic and building materials, and environmental analysis. Instruments for controlling – such as for in-situ cure monitoring – complete our product line.



www.netzsch.com

foster + freeman

Improving the Quality of Forensic Evidence

Established in 1978, Foster+Freeman has become one of the foremost forensic science equipment suppliers in the world, exporting market leading, and in many cases unique products from the United Kingdom to more than 155 countries worldwide. We believe the key elements essential in achieving our strategic direction are derived from this policy and are in controlling the company internal and external factors, identifying our risks and opportunities to achieve our objectives and meeting the needs of our customers and associated stakeholders.



www.fosterfreeman.com



Since being founded in 1990, Antec Scientific has sold worldwide more than 5,000 analytical instruments, such as DECADE™ Detectors, ROXY™ Reactors and ALEXYS™ Analysers. Being the world's most dedicated company providing analytical instrumentation based on Electrochemistry (EC), Antec Scientific is strongly committed to further fully meet its customers' needs as well as to continue to develop state-of-the-art technologies and innovative solutions for today's analytical challenges. Our instruments cover a broad range of applications in almost any analytical field ranging from research and development to routine analysis.



www.antecscientific.com



OrigalyS was founded in 2010, by R&D Engineers coming from a famous French Manufacturer (Tacussel and Radiometer Analytical) of Potentiostat, Galvanostat and Impedancemeter (EIS), based in Lyon, France. It's started within a business incubator Cap Nord. Our goal is to propose to the customer "design" products with an affordable price and a high level of quality. With a minimum of 30 years background and knowledge in electrochemistry and a worldwide distributor network, the company is able to provide a complete range of: Instruments, Potentiostat-Galvanostat-Impedancemeter, Multi-Potentiostats and Rotating Disc Electrode, Software, Electrode, Tips and Accessories.



www.origalys.com



OUR PRODUCTS



GC System Intuvo 9000

Uses direct heating and ferrule-free columns to save time in labs.



GC System 8890

Intelligent GCs allow for remote connectivity and autonomous monitoring to maximize productivity.



GC System 8860

Intelligent GC allows for remote connectivity designed for routine analysis with uncompromised quality.



GC System 990 Micro

System provides data in a compact footprint, separates gases in seconds with less space, power, and gas consumption than benchtop GC systems.



Micro GC System 490 Micro & 490-PRO

Gas Chromatograph for process-controlled applications that can operate unattended



Micro GC System 490-Mobile

Wireless Gas Chromatograph connects to your mobile device for on-site sample analysis



7890B GC System

Advanced GC instrument with carrier gas options to reduce helium levels



7820A GC System

Affordable, High-Quality Gas Chromatograph instrument for routine analyses using standard GC methods



Automatic Liquid Sampler 7693A

The Agilent 7693A ALS adds sample preparation capabilities to Agilent's industry-leading GC autosampler



Automatic Liquid Sampler 7650A

Intermediate Vial Capacity with High Precision ALS



Sample Prep Workbench 7696A

The Agilent 7696A Sample Prep Workbench provides automated sample preparation for HPLC & GC



Headspace Sampler 7697A

Intermediate Vial Capacity with High Precision ALS



Sulfur Chemiluminescence Detector

The reimaged and redesigned Agilent 8355 SCD represents the first major advance in sulfur chemiluminescence detection in 25 years, making the technology more reliable and easier to use.



Nitrogen Chemiluminescence Detector

The Agilent 8255 Nitrogen Chemiluminescence Detector (NCD) is a nitrogen-specific detector that produces a linear and equimolar response to nitrogen compounds.



Micro-ECD

The Agilent micro-electron capture detector (micro-ECD) revolutionizes trace-level analyses of halogenated



Flame Photometric Detector Plus (FPD Plus)

The Flame Photometric Detector Plus utilizes new photomultipliers



BloS Nitrogen-phosphorus Detector (NPD)

Nitrogen-phosphorus detectors (NPD) for gas chromatography are specific to nitrogen- or phosphorus-containing compounds and are well suited for environmental and forensic applications.



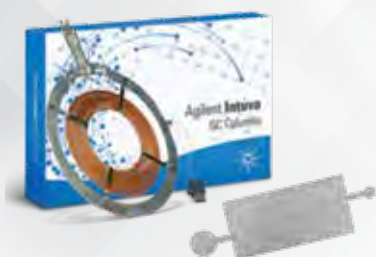
J&W GC Column

Agilent's GC columns help lab analysts maintain the highest standards of performance. Agilent J&W capillary columns deliver industry-leading technology with the highest inertness, lowest bleed levels and tightest column-to-column reproducibility.



Self Tightening Column Nuts

This unique, stainless steel GC column nut delivers a tight connection – without expensive upgrades or adaptors. An innovative spring-driven piston continuously presses against the short graphite/polyimide ferrule – maintaining a leak-free seal even after hundreds of injection.



J&W Ultra Inert Intuvo GC columns

As part of the Agilent J&W Ultra Inert GC column family, Ultra Inert Intuvo GC columns push industry standards for consistent column inertness and exceptionally low column bleed, resulting in lower detection limits and more accurate data for difficult analytes. Offered in a wide range of stationary phase polarities (non, low, mid, and high polarity).



Packed GC Columns

Agilent J&W Packed GC Columns are designed and manufactured to offer excellent and reproducible performance for all sample types associated with packed column separations, most important in the hydrocarbon processing industry. The highly efficient and rigorous packing technology used in Agilent J&W packed GC columns assures column-to-column reproducibility and ultimate efficiency,



Column Baskets and Hangers

Agilent offers column baskets and hangers, including a 13 cm (5 in) basket for 6850 capillary columns, column hanger for a 13 cm (5 in) basket, column hanger clip kit for a 18 cm (7 in) basket and column hanger for 6890, 5890 and 5880A systems.



Gas Chromatography Supplies

At Agilent, we understand that it is vital for your process to be efficient. gas chromatography supplies provide the best of both worlds: small, easily handled quantities in economical gas chromatography packaging. Ideal for high usage laboratories, Agilent GC supplies provide the quality and consistency of Agilent chromatography supplies offered in convenient and economical packaging.



HPLC Infinity II LC System 1220

An affordable, high-quality, integrated LC system to get you on the fast track to highest efficiency.



HPLC Infinity II LC System 1260

The trusted LC platform with the widest choice to take you to the next level of operational efficiency.



HPLC Infinity II Prime LC System 1260

The most capable and convenient LC of the 1260 Infinity II portfolio with pressure range up to 800 bar.



HPLC Infinity II LC System 1290

The next generation that sets the benchmark in UHPLC to deliver the maximum in efficiency.



LC Handheld Control 1200 Infinity Instant Pilot

Easy-to-use system control, status monitoring, signal plotting, and diagnostics for all your LC modules.



LC Handheld Control InfinityLab Companion

Local or remote system control, signal plotting, and basic diagnostics for Agilent LC modules.



HPLC Columns Family

Agilent liquid chromatography (LC) columns deliver reliable, consistent performance in a wide range of analytical LC. Agilent offers one of the broadest, most modern LC column portfolios for small molecule analysis, with columns suitable for nearly all separation modes and applications.



InfinityLab Poroshell 120 Column

InfinityLab Poroshell 120 columns provide exceptional efficiency and reliability, significantly boosting performance from all instruments, whether you want improved HPLC performance, UHPLC performance at lower pressures or the highest UHPLC performance.



AdvanceBio SEC Columns

Agilent AdvanceBio columns are designed and produced to provide results you can be sure of when analyzing highly complex biotherapeutic molecules and monitoring their purity, potency, and other critical quality attributes.

LC SUPPLIES



A-Line Quick Connect fittings

InfinityLab Quick Connect fittings are the only truly “finger-tight,” reusable fitting for UHPLC, stable to 1300 bar. There are no tools needed... just use your fingers to close the lever for a perfect connection every time.



Liquid Chromatography Supplies

Agilent InfinityLab supplies work seamlessly with InfinityLab LC Series instruments to achieve the highest performance, operational efficiency and lab safety. Smart consumables track usage for added confidence in your analysis. Learn more about InfinityLab. Our extensive portfolio of high quality instrument parts and generic LC supplies are designed for both Agilent and other manufacturers instruments.



LC Tubing, Fittings, Valve Supplies

Agilent provides a range of Chip LC supplies and replacement parts manufactured to high levels of quality and performance. Specially-designed PEEK fittings, along with fused silica/PEEK and sample transfer capillaries, are available as well as inner and outer valve rotors.

GC/MS INSTRUMENTS



GC/MSD 5977B

The Agilent 5977B High Efficiency Source GC/MSD builds on the most trusted single-quadrupole GC/MS



Triple Quadrupole GC/MS 7000D

The Agilent 7000D Triple Quadrupole GC/MS is now even easier to use and more efficient than ever.



Triple Quadrupole GC/MS 7010B

The Agilent 7010B Triple Quadrupole GC/MS is the latest version of the first compact benchtop triple quadrupole.



GC/Q-TOF 7250

Agilent 7250 GC/Q-TOF for high-resolution, accurate-mass GC/MS with low energy EI capability

LIQUID CHROMATOGRAPHY/MASS SPECTROMETRY (LC/MS)

LC/MS INSTRUMENTS

TRIPLE QUADRUPOLE LC/MS



Triple Quadrupole LC/MS (LC-TQ) Ultivo

The small stackable Ultivo LC/TQ delivers the robust performance needed for high-throughput sample analysis



Triple Quadrupole LC/MS 6495C

The 6495C delivers the highest sensitivity among all commercially available TQ LC/MS systems.



Triple Quadrupole LC/MS 6470A

The 6470A is a robust LC/MS/MS system for routine analysis that can detect targets at low levels.

QUADRUPOLE TIME OF FLIGHT LC/MS



LC/Q-TOF 6545

The 6545 LC/Q-TOF is a mid-range Quadrupole Time-of-Flight LC/MS for untargeted sample analysis.



AdvanceBio LC/Q-TOF 6545XT

The 6545XT AdvanceBio LC/Q-TOF enables multiple workflows in biopharmaceutical characterization.



LC/Q-TOF 6546

The Agilent 6546 LC/Q-TOF is the highest resolution, widest dynamic range system in the portfolio.



Ion Mobility LC/Q-TOF 6560

The 6560 Ion Mobility Q-TOF LC/MS delivers collision cross sections and structural information.

GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

QUADRUPOLE TIME OF FLIGHT LC/MS



Q-TOF LC/MS 6530

The Agilent 6530 Q-TOF LC/MS delivers accurate mass measurements for greater confidence.



iFunnel Q-TOF LC/MS 6550

The Agilent 6550 iFunnel Q-TOF LC/MS system is the most sensitive LC/Q-TOF in the portfolio.

SINGLE QUADRUPOLE LC/MS



LC/MSDiQ

The Agilent LC/MSD iQ is an easy-to use, cost-effective mass detector for chromatographers.



LC/MSD

The Agilent LC/MSD uses the power of routine mass selective detection to enhance efficiency.



LC/MSD XT

The sensitive Agilent LC/MSD XT offers highest performance for large molecule applications

TIME OF FLIGHT LC/MS



Time of Flight (TOF) LC/MS 6230B

The Agilent 6230 LC/TOF delivers full-spectrum MS with accurate mass and TOF resolution.

SAMPLE INTRODUCTION SUPPLIES AND SYRINGES



Autosampler Syringes

Agilent has what you need for precise, effective, sample delivery from your GC autosampler. Agilent offers two major lines of syringes for Agilent liquid autosamplers: Blue line and gold standard syringes. Blue line syringes are designed to support the higher productivity features of the Agilent 7693A automatic liquid sampler.



Manual Syringes for GC

Many of Agilent's manual syringes for GC have color-coded barrels to facilitate volume selection while making life in the lab more colorful. Each denomination (0.5 μ L to 50 mL) features a distinct color boldly embossed on the glass barrel for fast, easy identification.

INLET SEPTA SUPPLIES



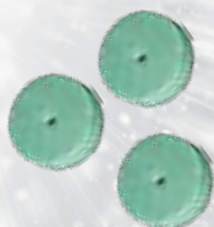
Long Life Septa

Agilent now treats each premium 11mm inlet septa to eliminate sticking in the GC inlet. With our premium non-stick septa, you'll never have to scrape bits of septum out of your inlet. Agilent's premium septa also have a recess on the injection side, to guide the syringe needle to the same point with every injection.



General Purpose Septa

Agilent's General Purpose Septa are made from an enhanced injection-molded silicone rubber material. The septa material, dark red or gray in color, is specified to withstand over 200 automatic injections at an injection port temperature of 350 $^{\circ}$ C.



Advanced Green Septa

Agilent now treats each premium 11 mm inlet septa to eliminate sticking in the GC inlet. With our premium non-stick septa, you'll never have to scrape bits of septum out of your inlet. Agilent's premium septa also have a recess on the injection side, to guide the syringe needle to the same point with every injection.



IDP Dry Scroll Pumps

Agilent Isolated Dry Scroll Pumps (IDP) are oil-free, compact, quiet, high performance vacuum pumps. IDP pumps use a single-sided scroll design that allows for a straightforward 15-minute maintenance procedure with simple tools. Large pumping speeds and compact sizes are ideal for many applications in the research, analytical instrument, and laboratory markets.



Vacuum Pump Supplies for GC/MS

To ensure the highest levels of accuracy and performance of Agilent's GC/MS systems, a range of vacuum pump supplies are available. These supplies include foreline and diffusion pump supplies such as oil mist filter kits, gauge tubes for measuring vacuum, and pump oil.



GC Instrument Evaluation, Installation and Calibration Standards

Biodiesel Test Samples, GC Instrument Evaluation, Installation and Calibration Standards, GC Qualitative Standards, GC/MS Analyzer Kit Standards, GC/MS Test and Performance Samples and J&W GC Column Test Standards



Gas Clean Purification System

The Agilent Gas Clean Filter System delivers clean gases, reducing the risks of column damage, sensitivity loss, and instrument downtime. Inserting a Gas Clean Filter System in the gas line immediately before the instrument inlet greatly reduces the level of impurities, thus improving trace analysis. Contaminants entering your GC column will also be reduced, which is critical for high temperature analysis and essential for longer column lifetime.



Intuvo Guard Chips

The Agilent Intuvo Guard Chip harnesses the protective power of a traditional retention gap within an easy-to-install, disposable, microfluidic chip. It traps sample residue by providing almost one meter of inert flow path between the liner and the column. With rapid, regular replacement, sample contamination never reaches the head of the Intuvo GC column, eliminating the need for column trimming.



Intuvo Gas Clean Filter Kit

The Agilent Gas Clean Filter System delivers clean gases, reducing the risks of column damage, sensitivity loss, and instrument downtime. Inserting a Gas Clean Filter System in the gas line immediately before the instrument inlet greatly reduces the level of impurities, thus improving trace analysis. Contaminants entering your GC column will also be reduced, which is critical for high-temperature analysis and essential for longer column life.



Atomic Absorption Systems 200 Series

Fast Sequential AA measures all elements in each sample before the next. AA offers high sensitivity, performance, and simplicity with 8 fixed lamp positions



MP-AES System 4210

The Agilent 4210 MP-AES provides cost efficient and flexible analysis beyond flame atomic absorption.



ICP-OES Instrument 5800

The 5800 ICP-OES is designed for busy labs looking to reclaim wasted time.



ICP-OES Instrument 5900

The Agilent 5900 SVDV ICP-OES system is designed for high throughput labs that demand the best.



ICP-OES Instrument 5110

Superb ICP-OES accuracy on even the toughest samples in a single measurement.



ICP-MS 7800

The 7800 ICP-MS combines proven, robust hardware, and pre-set methods for a simpler routine analysis



ICP-MS 7900

Agilent 7900 ICP-MS has 10x higher matrix tolerance, 10x wider dynamic range and 10x better signal to noise



Triple Quadrupole ICP-MS 8900

The 8900 ICP-QQQ offers a range of configurations to cover applications from routine contract analysis



Cary Eclipse Fluorescence Spectrophotometer

Cary Eclipse Fluorescence Spectrophotometer is the best, no-nonsense, solution for unrivalled productivity, performance and value that will exceed all of your analytical expectations.

FTIR BENCHTOP SYSTEMS



FTIR Spectrometer Cary 630

Versatile, innovative, and intuitive- providing superior quantitative and qualitative information for routine analyses.

FTIR COMPACT & PORTABLE SYSTEMS



FTIR Handheld 4300

The 4300 Handheld FTIR is the first of its kind employing lightweight ergonomics, ease of use.



FTIR Microscopes Cary 610

The Cary 610-FTIR is an industry leading FTIR single element detector microscope suitable for Superb imaging sensitivity at high spectral and spatial resolutions.



UV-Vis Cary 3500

The innovative Cary 3500 UV-Vis will streamline your experimental design and amplify confidence in your results



UV-Vis Cary 60

The Cary 60 UV-Vis Spectrophotometer is efficient, accurate and flexible, and is designed to meet your immediate needs.



Universal Measurement Spectrophotometer (UMS) Cary 7000

Cary 7000 Universal Measurement Spectrophotometer (UMS) will satisfy all your solid sampling needs.



UV-Vis Cary 4000

The Cary 4000 UV-visible spectrophotometer provides excellent photometric performance in the 175-900 nm range



UV-Vis Cary 5000

The Cary 5000 UV-Vis-NIR spectrophotometer provides superb photometric accuracy and resolution in the 175-3300 nm range



UV-Vis Cary 6000i

The Cary 6000i UV-Visible-NIR spectrophotometer provides superb photometric accuracy and resolution in the 175-1800 nm range

AVIATION SECURITY



Cobalt Insight100 Series

Liquid explosive detection system. The latest member of the Insight range is Insight200M.



Cobalt Insight200M - The Bottle Screener for Liquid, Aerosols & Gels

The Insight200M bottle screener is the latest liquid explosive detection system

PHARMACEUTICAL ANALYSIS



RapID Raw Material ID Verification System

The RapID Raman system is the next generation in raw material testing, a crucial component of pharmaceutical quality control at GMP facilities.



TRS100 Quantitative Pharmaceutical Analysis System

Quantitative analysis for content uniformity & polymorph screening in pharmaceutical. Enables fast, easy to use.

HANDHELD CHEMICAL IDENTIFICATION



Resolve Handheld Through-Barrier Identification System

Handheld Raman identification of explosives, narcotics, hazardous material incident response.



LDIR Chemical Imaging System 8700

Bringing Clarity and Unprecedented Speed to Chemical Imaging

LDIR ACCESSORY



Agilent Sample Planer

Flat Surface Sample Preparation made simple

AA SUPPLIES



Hollow Cathode Lamps

Agilent provide a wide range of lamps regardless of make, model or manufacture. Background Correction Lamps, Coded Multi-Element Lamps, Coded Single Element Lamps, High Intensity UltrAA Coded Multi-Element Lamps, High Intensity UltrAA Coded Single Element Lamps, Hollow Cathode Lamps for PerkinElmer, Uncoded Multi-Element Lamps, Uncoded Single Element Lamps.



AA Standards

Agilent offers a comprehensive range of single and multi-element standards, ionization buffers and environmental standards for Atomic Spectroscopy. With the assurance of NIST traceability, Agilent's selection of standard mixes offers accurate, reliable calibrations at great value.

MP-AES SUPPLIES



Nebulizers

Agilent 4100/4200 Series MP-AES instruments are compatible with a range of Agilent accessories and supplies designed to extend the instruments capabilities, including the Agilent OneNeb Series 2 nebulizer. The OneNeb Series 2 nebulizer offers superior performance with MP-AES instruments.



Torches

The Agilent 4200 MP-AES features a plug and play torch, optimized for high precision and sensitivity with the recommended power and gas flow settings. The torch features a unique polymer base that fits easily into the simple and effective torch-loader mechanism.



MP-AES Spray Chambers

The Agilent 4100/4200 Microwave Plasma-Atomic Emission Spectrometer runs entirely on air, which means your lab can eliminate flammable and expensive gases. It's safer and more cost efficient than other spectrometers. The 4100/4200 MP-AES enables superior detection and can perform unattended multi-element analyses.



Nebulizers

Agilent ICP-OES series instruments are compatible with a range of accessories and supplies designed to extend their capabilities, including the Agilent OneNeb Series 2 nebulizer.



Torches

Agilent's ICP-OES series are compatible with a range of accessories and supplies designed to extend the capabilities of the instruments. Agilent axial fully demountable torches for ICP-OES instruments light easily and stay lit, reducing downtime.



ICP-OES Standards (single element)

Agilent offers a comprehensive range of single and multi-element standards, ionization buffers and environmental standards for Atomic Spectroscopy. With the assurance of NIST traceability, Agilent's selection of standard mixes offers accurate, reliable calibrations at great value.

ICP-MS SUPPLIES



Spray Chambers

Agilent manufactures a range of high quality spray chambers and associated accessories for use with our market-leading portfolio of ICP-MS systems. Two spray chamber models are available, both of which can be effectively utilised with our full range of nebulizers. The two models are manufactured of Quartz and Polypropylene (with sapphire tube) respectively, and both should be replaced when memory effects remain after cleaning.



Torches

Comprised of three Concentric Quartz tubes through which streams of argon gas pass. Three streams = plasma, auxiliary, and nebulizer (carrier) gas. The Quartz torch is not suitable for samples containing hydrofluoric acid. It must be completely dried before installing and igniting the plasma. The torch should be replaced if chipped, cracked or distorted.



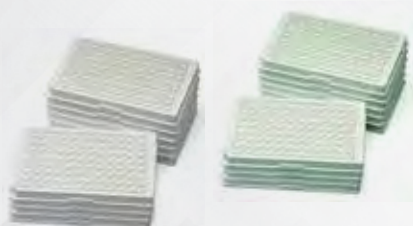
Interface Cones for 7700/7800/7900 and 8800/8900

The influence of good quality plasma/vacuum interface design on the overall performance and sensitivity of an ICP-MS system is vitally important and high quality interface cones are key elements.



Fluorescence Standards and Reference Materials

Agilent's fluorescence spectrophotometers are augmented by a wide range of accessories and supplies including fluorescence standards and reference materials.



Microplates

96-well Microplates and 384-well Microplates. Our microplates are available in white for best overall well-to-well reproducibility, or black for the lowest background signal levels. Both types have high binding surfaces that bind medium and large biomolecules (greater than 10 kDa) that have hydrophobic and/or ionic groups. These microplates are recommended for the Cary Eclipse Microplate Reader Accessory.

FTIR SUPPLIES



Cary Series FTIR Instrument Supplies and Sources

Our range of consumables for the Agilent Cary Series FTIR instruments includes desiccant cartridges, replacement windows and assemblies, filters, and sources.



Cary 630 FTIR System Supplies

Agilent is proud to offer a variety of supplies and replacement parts for the Cary 630 FTIR: window, desiccant cartridges, ATR tips, and more.



FTIR Standards

Included in are NIST traceable polystyrene test film and spectroscopic grade KBr powder.



Cuvettes and Flow Cells

Cylindrical Cells, Disposable Cells, Flow-through Cells, Macro Cells, Rectangular Cells, Semi-micro Cells and Ultra-micro Cells.



8453 UV-Vis Supplies

8-Position Multicell Transport, 8453 Source Lamps, Autosampler, Cell Holders, Dissolution Testing, Peltier Temperature Controller, Sipper, Spacers and Accessories and Tubing and Fittings



Cary UV-Vis Supplies

Cary 50 Cells, Cary Cell Holders and Bases, Cary Source Lamps, Cary Tubing, Fiber Optic Probes, Magnetic Stir Bars, Optical Filters, Polarizer and Depolarizer and Probe Accessories.

Standards

UV-Vis Certified Calibration Standards

Agilent chemical standards and accessory kits provide an inexpensive and time-saving solution for OQ/PV. The kits are designed for analysts who need to conform closely to both quality and regulatory requirements when performing UV-visible measurements.



UV-Vis Installation and Checkout Solutions

UV-Vis Installation and Checkout Solutions for Cary Eclipse Fluorescence



Dissolution Sampling Station 850-DS

The 850-DS Dissolution Sampling Station offers the latest capabilities for centralizing laboratory workflow of sample transfer, filtration and collection.

AUTOMATED SYSTEMS



Cary 60 Multicell UV Dissolution System

Provides a fully integrated, automated dissolution testing system using UV



Cary 60 Fiber Optic UV Dissolution System

Offers versatility and flexibility while delivering the highest level of quality provides excellent optical transmission and reproducibility capabilities



Dissolution Apparatus 708-DS

The 708-DS is designed for reproducibility and ease of qualification, and is the ideal platform for standardizing dissolution testing.



BIO-DIS Reciprocating Cylinder Apparatus

The Agilent BIO-DIS Reciprocating Cylinder Apparatus is ideal for automatic dissolution testing of dosage forms that require different types of media.



Reciprocating Holder Apparatus 7

The Reciprocating Holder Apparatus 7 is ideal for automatic dissolution testing of dosage forms requiring a change of media, smaller volume or more vigorous agitation.



Apparatus 7 400-DS

The Agilent 400-DS Dissolution Apparatus 7 sets the performance standard standard for small-volume drug-release testing of medical devices such as drug eluting stents (DES).



280-DS Mechanical Qualification System

The Agilent 280-DS Mechanical Qualification System (MQS) revolutionizes dissolution qualification by measuring critical physical parameters of dissolution apparatus with unmatched unprecedented precision. Using Instrument and Vessel Modules and powered by the intuitive Agilent 280-DS Workstation Software, the 280-DS provides accurate, qualitative measurements by eliminating the guesswork of interpreting values obtained with individual manual gauges.

ACCESSORIES



Dissolution Paddles, Baskets and Shafts

For Apparatus 1 (baskets) and Apparatus 2 (paddles) dissolution testing, Agilent's variety of quality accessories can support your laboratory's needs while maintaining compliance with regulatory standards. In keeping with the most current guidance for mechanical qualification, Agilent also offers Verified Dissolution Accessories including baskets, paddles and basket shafts with certificates of conformity (CoCs) with actual component measurements for all critical dimensions using traceable devices.



Dissolution Vessels

Agilent provides a variety of dissolution vessels for use with Agilent dissolution apparatus, as well as other equipment manufacturers.

- TruAlign Vessels for the 708-DS and 709-DS
- TruCenter Vessels for the discontinued 7025 and 7030 Dissolution Apparatus.
- EaseAlign Vessels for the discontinued 705-DS, 7000 and 7010 dissolution apparatus
- Molded Vessels are vacuum formed (VF) and offer the tightest precision available to reduce position-to-position variability and improve uniformity.



Filters

Ensure the integrity of your dissolution sample with the original Full Flow Filter design. These filters offer increased surface area to optimize filter life and prevent clogging when taking dissolution samples. These are made of a low protein-binding material that can filter a wide variety of active drug substances.



Captiva EMR-Lipid

Captiva EMR Lipid provides highly selective, efficient lipid/matrix removal without analyte loss. The novel EMR Lipid technology removes lipids based on size exclusion and hydrophobic interaction. Effective lipid removal ensures minimal ion suppression of target analytes, significantly improving method reliability and ruggedness.



Captiva Filter Plates & Cartridges

Captiva filtration plates and cartridges completely remove precipitated proteins and strongly protect against HPLC column clogging. Captiva 96-well filter plates, available in 0.2 and 0.45 μm pore sizes, are ideal for preparing precipitated protein samples for LC/MS. Captiva 10 and 20 μm glass fiber filter plates are perfect for automated systems and for clarifying particle-laden samples.



Captiva Syringe Filters/Econofilters Syringe Filter

Sample filtration is critical to achieving optimal system performance. Agilent Captiva Premium Syringe Filters make the process faster than ever with the industry's highest flow rates and loading capacities. In addition, Agilent sets the standard for LC/MS testing and certifying more syringe filters to be completely free of observed extractables than any other manufacturer. All Agilent Captiva Premium Syringe Filters are supplied with a HPLC or LC/MS Certificate. Choose from a variety of membrane types and pore sizes to suit your needs.

QUENCHERS KITS & STANDARDS



Bond Elut EMR-Lipid

Bond Elut Enhanced Matrix Removal Lipid provides the most comprehensive matrix removal of any sample preparation product. Lipids can be extracted selectively from high-fat samples without analyte loss. The final polishing step removes excess water and improves analyte partitioning.



Dispersive Kits

QuEChERS dispersive kits supplied in 2 or 15 mL centrifuge tubes accommodate the aliquot volumes specified by current AOAC and EN methodologies. Select the dispersive kit suited to the type of food analyzed and the method followed. The sorbent extracts the sample matrix, while MgSO_4 helps remove excess water and improve analyte partitioning.

SAMPLE PREPARATION METHODS

QuEChERS KITS & STANDARDS



Extraction Kits

QuEChERS salts and buffers are prepackaged in anhydrous packages. This allows you to add them to the sample after the solvent, based on your method of analysis (AOAC or EN). Extraction kits include: 50 polypropylene centrifuge tubes (50 mL) with caps, MgSO₄, NaCl, or other salts for buffering.



Standards for QuEChERS Products

In addition to our QuEChERS Kits, Agilent makes your analysis easier by providing standards for the most commonly used regulatory methods, including AOAC and EN.

SOLID PHASE EXTRACTION (SPE)



Bond Elut Plexa

We offer a wide range of solid phase extraction (SPE) products in various polarities and chemistries. A broad selection of Bond Elut sorbents is available in cartridge and well plate formats and as bulk sorbents. Frits, adapter caps, empty cartridges for custom packing.



OpenLab CDS

Our newest generation CDS combines chromatography and mass spectrometry into one single data system.



OpenLab CDS ChemStation Edition

Offers the most complete instrument control of Agilent LC, GC, CE, CE/MS, and LC/MS instruments systems you have now, with limited instrument control of other vendors' systems.



OpenLab CDS EZChrom Edition

Provides the most complete control of other vendors' instruments, plus full control of Agilent LC and GC instruments.

DATA MANAGEMENT



OpenLab ECM

Manage all the data your lab produces, from any technology or vendor—even across multiple sites.



OpenLab ECM XT

Use this cost-effective system to archive analytical data and capture electronic reports and files.

LAB WORKFLOW MANAGEMENT



SLIMS

All-in-one digital platform designed to manage all the information in your lab.



MassHunter Software

The all new Agilent MassHunter Workstation software provides intuitive, yet powerful, instrument control, data acquisition, qualitative and quantitative data analysis,



MassHunter Software with MSD ChemStation DA

Updated version of your familiar GC/MSD software – with the option to have either MSD Productivity ChemStation mode for easy, rapid deployment into an existing GC/MSD lab.

MASSHUNTER FOR LIFE SCIENCE RESEARCH



Life Science Research

- MassHunter Software
- Mass Profiler Professional Software
- Profinder Software



Life Science Research

- METLIN Metabolomics Database and Library
- Spectrum Mill
- VistaFlux Software

MASSHUNTER FOR PHARMA



Software for Pharma

- MassHunter Software
- Analytical Studio Reviewer
- BioConfirm Software



Software for Pharma

- Profinder Software
- Spectrum Mill
- WalkUp Software

**MassHunter Software**

MassHunter Workstation software provides intuitive, instrument control, data acquisition, and data analysis

**Mass Profiler Software**

Mass Profiler is specifically designed for expression profiling applications such as biomarker discovery.

MASSHUNTER FOR FOOD AGRICULTURE AND ENVIRONMENTAL

**MassHunter Software**

MassHunter Workstation software provides intuitive, instrument control, data acquisition, and data analysis.

**Mass Profiler Professional Software**

MPP is the only chemometrics software package designed to exploit the high information content of MS data and can be used in any MS-based differential analysis.

**Mass Profiler Software**

Mass Profiler is specifically designed for expression profiling applications such as biomarker discovery.

**MassHunter Software**

MassHunter Workstation software provides intuitive, instrument control, data acquisition, and data analysis.

**Mass Profiler Software**

Mass Profiler is specifically designed for expression profiling applications such as biomarker discovery.



ICP-MS MassHunter Software

ICP-MS MassHunter Workstation software controls all aspects of the setup and operation of your Agilent ICP-MS and ICP-QQQ instruments and accessories.



ICP-MS Intelligent Sequencing Software

Customize to meet your QA/QC functionality needs. Automate QA/QC checks.



ICP-MS Plasma Chromatographic Software

Developed by Agilent, this optional software handles chromatographic data with powerful integration, calibration and quantification capabilities.



ICP Expert Software for ICP-OES

Powerful ICP Expert Software for the 5110 ICP-OES and 5100 ICP-OES features a familiar worksheet interface, easy method development.



MP Expert Software for MP-AES

With a familiar worksheet interface, automated method development, and software applets that include pre-set method templates, the Agilent MP Expert dramatically simplifies analysis.



SpectrAA Software

The SpectrAA Worksheet software features an innovative spreadsheet-design format that displays sample.

MOLECULAR SPECTROSCOPY DATA SYSTEMS



IR Software

- Agilent Clarity Software
- FTIR Libraries for 4100/4200
- MicroLab Expert
- MicroLab FTIR Software
- MicroLab Mobile Software
- Resolutions Pro FTIR Software



UV-Vis & UV-Vis-NIR Software

- Cary UV Workstation software
- Cary Eclipse Software
- Cary WinUV Software
- UV-Vis ChemStation Software

AUTOMATION SOLUTIONS



VWorks Automation Control Software

Agilent VWorks Automation Control software is a complete solution for driving the integration of laboratory automation throughout the discovery process.

DISSOLUTION SYSTEMS



Dissolution Workstation Software

Dissolution Workstation Software integrates control of dissolution apparatus and automated sampling.



UV Dissolution Software

Cary WinUV Dissolution Software supports both Agilent's Multicell and Fiber Optic Online UV Dissolution Systems.

GPC/SEC DATA SYSTEMS



GPC/SEC Data Systems

- GPC/SEC Software
- Cirrus GPC Software
- Bio-SEC Software
- GPC/SEC Software for OpenLAB CDS

DENSITY METER



Density Meter DMA™ 4500 M

For thousands of users around the world, density measurement means DMA™ 4500 M. These density meters are in use day in, day out, wherever reliable and accurate 5-digit density values are required. To achieve this, the patented Repeated Fade-out Method applied by DMA™ 4500 M delivers the most stable density results based on comprehensive knowledge of the oscillation characteristics.



Density Meter: DMA™ 501/ 1001

Has everything that industry standards for density measurement stipulate: 4-digits in density measuring accuracy. Based on comprehensive knowledge of the oscillation characteristics of the newly designed measuring cell, the applied patented repeated fade-out method delivers the most stable density results.



Density Meter DMA™ 35 Portable

The DMA™ 35 portable density meter measures the density and concentration of your sample and is characterized by the highest level of user-friendliness. It employs the oscillating U-tube principle from Anton Paar. This means: 50 years of density measurement experience in one small instrument.

POLARIMETER



Modular Circular Polarimeter MCP 100/150

The powerful MCP polarimeter series from Anton Paar precisely, quickly, and easily determines the optical rotation of chiral substances. Based on a modular concept, the user-friendly MCP polarimeters are open to customer-specific configuration and are easily extended with a variety of sample cells and wavelength options in order to ideally suit your requirements.

REFRACTOMETER



Compact Refractometers Abbemat 3X00

Reliability, precision and convenience: Abbemat 3X00 refractometers offer you an exceptional combination of technical expertise and user-friendly operation for your refractive index and concentration measurements. The premium technology and compactness of the Abbemat 3X00 transform time-consuming measurements into highly efficient quality control.



Microwave Digestion/Extraction: Multiwave GO

The Multiwave GO microwave digestion system represents a masterstroke of Anton Paar's engineering. The newly designed DMC Directed Multimode Cavity provides the best of both monomode and multimode microwaves. As in a monomode system, the microwaves are directed to the sample, providing highly efficient heating in a small-footprint system.



Microwave Digestion/Extraction: Multiwave 5000

Multiwave 5000 is a microwave reaction system for the digestion of samples (varying in difficulty or volume), evaporation, acid leaching, and extractions. Thanks to the flexible platform concept you can configure Multiwave 5000 to be the best fit for your applications.



Microwave Digestion/Extraction: Multiwave 7000

Multiwave 7000 can digest food, environmental, polymer, cosmetic, pharmaceutical, geological, chemical, and petrochemical samples, even in the same run. Different samples with different reaction mixtures can be processed simultaneously in the Pressurized Digestion Cavity (PDC). Sample clustering is no longer necessary.

MICROWAVE SYNTHESIS & SYNTHETIC CHEMISTRY



Synthesis Reactor - Monowave 50

Monowave 50 even fits into a crowded lab. High level organic synthesis is performed simply with the reactor, a vial and a silicone cap. Ideal for educational purposes, Monowave 50's safety standards ensure the safest handling even with inexperienced students. You save money, time and space as Monowave 50 provides the best combination of price and quality



Monowave 400/200 and 450 Microwave-Assisted Extraction

Monowave 400 and Monowave 200 are high performance microwave reactors specially designed for small scale microwave synthesis applications in research and development laboratories. Monowave 450 is a modern microwave reactor specially designed for microwave-assisted extractions in analytical laboratories.

RHEOMETER



Rheometer: MCR 102/302/502

The MCR rheometer series is the result of continuous development and based on decades of experience in rheology and rheometry. The combination of innovative and thousandfold field-proven technology with the robust design represents the benchmark in its class.



Rheometer: MCR 72 and MCR 92

The two new members of the renowned Modular Compact Rheometer (MCR) series – MCR 72 and MCR 92 – are the two wisest choices for quick and easy rheological measurements. These real rheometer “pearls” from Anton Paar are streamlined for your daily lab routine, easy to use in a Plug and Play fashion and available at an accommodating price.



Rotational Rheometer: RheolabQC

RheolabQC is a rotational rheometer based on state-of-the-art technologies also used in R&D rheometers. It combines unrivaled performance with easy operation and robust design. From quick single-point checks over flow curve and yield point determinations to complex rheological investigations: RheolabQC sets new standards for carrying out routine rheological tests. This powerful rheometer is an excellent example of a modern measuring instrument utilizing all available technical possibilities to ensure flexible, reliable and simple operation.

PARTICLE CHARACTERIZATION



Particle Analysis Litesizer™ 100/500

The Litesizer™ is an instrument for characterizing nano- and microparticles in dispersions and solutions. It determines particle size by measuring dynamic light scattering (DLS). A highlight of the Litesizer™ 100/500 is its ingeniously simple software.



Particle Size Analyzer (PSA) 990/1090/1190

Anton Paar has acquired the particle size analyzer (PSA) product line from CILAS. The particle size analyzers measure size distributions of particles in dry powders or in liquid dispersions. A practical example: the knowledge and control of the powder particle size is used to increase the efficiency of medical products.

VISCOMETER



SVM™ Series 2001/3001/4001

The SVM™ series gives you more parameters than any other kinematic viscometer on the market. There are three different models: SVM™ 2001 is a quick and easy-to-use viscometer for measuring kinematic viscosity at any temperature between 15 °C and 100 °C, whereas SVM™ 3001 provides measurements between -60 °C and +135 °C. SVM™ 4001 is designed to determine viscosity and density simultaneously at any two temperatures between 15 °C and 100



Rotational Viscometer ViscoQC™ 100

ViscoQC™ 100 is Anton Paar's brand new entry-level digital rotational viscometer that measures the dynamic viscosity as a single-point value. Unbeatable ease of use makes ViscoQC™ the new standard for traceable viscosity checks. Unique features include automatic spindle detection by Toolmaster™, automatic guard detection, magnetic spindle coupling for easy one-hand exchange of spindles, a special Auto Mode, and many more – See for yourself!



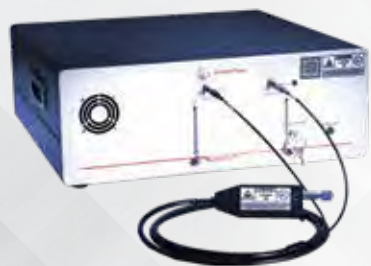
Rotational Viscometer ViscoQC 300

Developed for a wide range of applications, ViscoQC 300 ensures the quality of your substance – from almost any fluid to semi-solid samples – by delivering fully traceable viscosity results right at your fingertip. Starting from a multi-point viscosity measurement for your respective purpose, your system is upgradeable with compliance (21 CFR Part 11) and/or additional analysis software to also meet your future needs. Further improve your process with the optional sample bar code scanner and data processing via LIMS Bridge software.



Raman Spectrometers Cora 5X00

The Cora 5X00 series combines the small footprint – about the size of an open laboratory book – with the performance and the high repeatability of a benchtop instrument. You can choose between a single-wavelength (Cora 5100, Cora 5200, or Cora 5300) and a dual-wavelength instrument (Cora 5500, Cora 5600, or Cora 5700) in order to achieve measurements with maximum Raman signal and minimum fluorescence background.



Raman Spectrometers Cora 7X00

The Cora 7X00 series of high-performance Raman spectrometers has been developed for use in academic and industrial research. It provides high resolution, a wavelength of 3 cm⁻¹ to 4 cm⁻¹ up to 15 cm⁻¹, a low noise level, and a high sensitivity in a space-saving 19-inch housing, which makes it easy to fit into your laboratory. Cora 7100/Cora 7200/Cora 7200 Deep Cooled and Cora 7300 Deep Cooled



Handheld Raman Spectrometer Cora 100

Cora 100 is a small Raman analyzer which fits in your hand. It is ideal for point-and-shoot measurements to identify substances at the touch of a button. You can simply identify unknown samples such as hazardous materials, narcotics, explosives, and chemical warfare agents or verify incoming goods without being a trained chemist. The easy-to-use software and accessories enable you to assess the risks involved with substances in order to make life-saving decisions on the spot or in hot-zone environments.

ATOMIC FORCE MICROSCOPE (AFM)



Tosca™ 400

Tosca™ 400 uniquely combines a premium technology with simple and user-friendly operation, which makes this AFM fit for industrial users as well as scientists. Automation is an integral element on every level of operation, increasing efficiency and simplifying the handling of your AFM measurements. Discover how your material performs – with peak performance AFM.



FTIR Wine Analyzer: Lyza 5000 Wine

The novel multi-parameter FTIR analyzer Lyza 5000 Wine is your solution for the analysis of wine. Fast measurements for a multitude of parameters ensure you have all the information you need. Thanks to a quick setup and pre-installed models all important results for wine analysis, including ethanol, sugars, and acid profile are just a tap away. Lyza 5000 Wine can be used as a stand-alone device, automated for high throughput, or connected to your benchmark instruments – Anton Paar density meters and Alcozyzer – for the most powerful wine analysis.

FLASH POINT



Abel Flash Point Tester: ABA 4

The automatic Abel closed-cup tester measures the flash point, the lowest temperature at which the vapors of a sample ignite upon the application of an ignition source. The tester can also be used to detect the ability of a sample to yield flammable vapors when maintained at an equilibrium temperature by the flash/no flash method. ABA 4 is suitable for flash point applications of jet fuels, solvents, chemicals, etc.



Pensky-Martens Flash Point Tester: PMA 5

The automatic Pensky-Martens closed-cup tester measures the flash point at the lowest temperature at which the application of an ignition source causes the vapors of a sample to ignite. PMA 5 is suitable for flammability applications on both biodiesel and biodiesel-blended fuels along with distillate fuels like diesel, heating oil and kerosene. It is also commonly used for other potentially flammable liquids.

THERMAL ANALYSIS



Thermo-optical Oscillating Refraction Characterization - TORC 5000

TORC 5000 features unique technology in a robust and compact instrument and combines this with powerful measurement software. The Thermo-optical Oscillating Refraction Characterization (TORC) technique enables determination of the coefficient of thermal expansion and monitoring of phase and glass transitions. TORC 5000 is an interesting and economic solution for adhesive and polymer manufacturers.

OXIDATION STABILITY & COLD FLOW PROPERTIES



Cold Filter Plugging Point Tester: Callisto 100

The fully automated, compact, stand-alone CFPP tester Callisto 100 determines the low-temperature operability in diesel fuel, biodiesel, diesel blends and gas oils. Callisto 100 comes with a newly developed state-of-the-art Peltier element concept which allows the connection of a methanol-free cooling system. It ensures outstanding homogeneity of the cooling jacket, which is the most critical and decisive parameter for a correct CFPP value determination.

MILLING AND GRINDING



Ball Mill BM500

BM500 is a versatile laboratory ball mill intended for the milling and homogenization of a broad variety of samples ranging from soft, fibrous to hard and brittle materials. With a simplified handling principle, it enables the quick processing of dry, wet, and even cryogenic milling procedures. As the all-rounder suitable for any application segment, BM500 quickly manages routine as well as scientific applications.

HIGH-PRECISION THERMOMETERS



MKT 50 and MKT 10

The high-precision thermometers from Anton Paar are designed for the most accurate temperature measurements, comparison calibrations and fixed point calibrations in industry, laboratories and research. Combined with calibrated platinum resistance thermometers, Anton Paar's thermometers achieve a measuring uncertainty of 10 mK or less.

DISTILLATION



Atmospheric Distillation Analyzer: Diana 700

Diana 700 is the ideal solution for automatically performing high-precision distillation range analysis at atmospheric pressure. Typical samples to be characterized include petrochemical products, aromatic hydrocarbons as well as other volatile organic liquids. The combination of premium technology and distinguished features leads to unrivaled ease of use, high efficiency, and safe operation.



CO₂ Meter: CarboQC

CarboQC is the precise CO₂ meter which allows reliable QC on finished packages as well as highly accurate measurements in the laboratory for product development. It gives you fast, accurate and reliable determination of dissolved carbon dioxide in beverages.



Combined CO₂ and O₂ Meter: CboxQC™

CboxQC™ is the precise combined CO₂ and O₂ meter which allows reliable QC on finished packages as well as highly accurate measurements in the laboratory for product development. It gives you fast, accurate, and reliable determination of dissolved carbon dioxide and oxygen in beverages. When combined with Anton Paar's PFD filling device, sample is taken directly from the package into the measuring chamber of CboxQC™ – with no loss of dissolved carbon dioxide and dissolved oxygen during sample transfer. CboxQC™ for the laboratory provides reliable CO₂ and O₂ results, even out of very small packages.



Surface Area Analyzer Autosorb- iQ-MP®/XR

A highly sophisticated gas sorption analyzer available with up to three physisorption analysis ports for surface area analysis and pore size measurements; any or all can be equipped for low pressure micropore analysis including 0.1 torr transducer(s).



Surface Area Analyzer Autosorb-6iSA®

Autosorb 6iSA surface area and Pore Size Analyzer allows a researcher to get a 360 degree perspective of the complex material pore structure enabling a variety of analysis techniques including adsorption isotherms, desorption isotherms, single point BET, multi-point BET, Langmuir surface area, mesopore volume, micropore size distribution (using carbon dioxide), and micropore surface area.



Surface Area Analyzer Quadrasorb-evo™

The standard evo version provides fast and accurate B.E.T surface area measurements. The new B.E.T Quick Mode provides high throughput industrial material characterization labs the ability to process multiple samples at dramatically improved speeds. For advanced material characterization the micropore equipped version provides a 1 torr low pressure transducer and turbo pump to allow the measurement of microporous materials and extremely low surface area samples using Krypton.



Surface Area Analyzer NOVAtouch® Series

The NOVAtouch- Series gas sorption analyzers deliver increased throughput and superior performance for BET surface area and pore size analyses. Eight models are available as standard and advanced LX versions with 2-or-4 analysis stations, a dedicated PO station, and four built-in sample preparation ports. All NOVAtouch models can produce BET surface area results using the classical helium void volume method, or via the patented helium-free method. Every NOVAtouch is also a pore size analyzer capable of measuring both adsorption and desorption isotherms with BET surface area results provided in a matter of minutes.



Surface Area Analyzer NOVA e® Series

The NOVA e- Series of surface area analyzers offers a full line of rapid, high throughput B.E.T. surface area and pore size analyzers. Eight fully automatic models meet the needs of any research or quality assurance laboratory.



Surface Area Analyzer AutoFlow BET+®

The AutoFlow BET+ is a fully automated state-of-the-art dynamic flow system designed to enable an extremely rapid evaluation of the surface areas of solid samples. Single-point or multi-point determination of surface areas using different standard methods (such as BET and STSA) is easily carried out without the need for measuring system void volumes or recalibrating signal responses.

CHEMISORPTION ANALYZERS



Chemisorption Nanalyzer Autosorb iQ-C-MP

When bench space is at a premium and maximum capability is essential. The only combined chemisorption-physisorption manometric analyzers available with built-in degassing stations and optional second and third micropore- capable physisorption ports. Built-in TCD options for flow methods of catalysts characterization, options put this model even further ahead of the field.



Chemisorption Nanalyzer Autosorb iQ-C-XR

These analyzers are unrivalled in catalyst characterization capability: one moment they are rapid surface area and pore size analyzers, the next they are measuring active metal area and dispersion, and even temperature programmed analyses. The mass spectrometer option is truly unique and remarkably cost-effective, being close-coupled via a built-in vacuum chamber and a gas sampling system.



Pore Size Analyzer Autosorb® iQ Series

The Autosorb iQ series represents the gold standard in high resolution/high sensitivity gas sorption. Metal-to-metal (VCR) fittings are employed in the measurement manifold(s) for extremely low leak rates. Available with up to three physisorption analysis ports for surface area analysis and pore size measurements; any or all can be equipped for low pressure micropore analysis including 0.1 torr transducer(s).



Pore Size Analyzer Quadrasorb-evo™

Up to four simultaneous and independent analysis ports remove the limitations of single dewar systems allowing samples to be started as soon as previous measurements are completed. Krypton / Micropore option available for low surface area and micropore measurements. External roughing pump supplied separately. Secure PC version (21 CFR Part II) is also available.



Surface Area Analyzer NOVAtouch® Series

The next generation of well-established NOVA analyzers, offering higher speed and performance enhancements including a touch-sensitive, multi-functional color screen that provides real time graphical and tabular displays of analyses, and enables local control in multiple languages and without a dedicated PC.



Pore Size Analyzer Nova®e Series

High-speed surface area and pore size analyzers for quality control and research. Meets different throughput needs with single or multi-port (two, three or four sample stations) models. Can be run as stand-alone or PC-based. Secure PC version (21 CFR Part II) is also available. Nova's small footprint even includes built-in sample preparation stations! Operates in classical or helium-free mode. Vacuum pump supplied separately.



Surface Area Analyzer Autosorb®-6iSA

The new Autosorb-6iSA provides six ports for independent analysis of 1 to 6 samples. Dedicated pressure transducers, dewar flasks, coolant level sensors, and Po cells allow independent and simultaneous operation of each station. Its Windows®-based software, available as a 21 CFR Part 11 version, provides the ability to perform a multitude of data analysis methods including single and multi-point BET Langmuir surface area, mesopore volume and size distribution, micropore area, total pore volume and much more. Modern data communication provides ease of data input and export.

VAPOR SORPTION ANALYZERS



Vapor Sorption Analyzer VStar™

Vapor sorption analyzer dedicated to the analysis of materials using water and organic vapors. A single thermostatically controlled chamber houses the vapor source and manifold and independently controlled sample cells provides the best temperature control available for the most accurate analyses. The VSTAR is available in 2 or 4 station model(s) to fit your needs.



Vapor Sorption Analyzer Aquadyne™ DVS-1 & DVS-2HT

The Aquadyne DVS is a fully automated, gravimetric, one or two sample, dynamic water vapor sorption analyzer. It measures adsorption and desorption isotherms of water vapor both accurately and sensitively, including sorption kinetics, with minimal operator involvement.



Vapor Sorption Analyzer Autosorb iQ® with Vapor Option

Manometric (static, volumetric) analyzer for gas and vapor physisorption measurements. Typical vapors include water, alcohols, and aromatics. The vapor generator is housed within the manifold chamber... heated and thermostatically controlled. A solenoid valve opens the pump ballast for all-important venting of condensable vapors. The vapor option is available on all models of the Autosorb-iQ, one- and two-station versions.

Density Analyzer Gas Pycnometer Pentapyc™ 5200e/Pentafoam™5200e

Five station, automatic gas pycnometer for specific volume and true (skeletal) density measurement of porous solids and powders. Each of the five stations can be individually “tailored” for different sample amounts/shapes. Features data archiving to PC (Ethernet) or USB flash/thumb drive, interface to electronic balance and USB printer port. Easy-seal covers ensure reproducible operation. Thermostatted version available



Density Analyzer Gas Pycnometer Ultrapyc® 1200e

Single station automatic gas pycnometers for volume and density measurement of porous solids and powders. Ultrapyc 1200e up to 135 cm³ sample volume, micro-Ultrapyc 1200e down to 0.1 cm³. Like the Pentapyc 5200e, it operates via keypad or your PC and standard web browser. Same standard features as the Pentapyc. Additional vacuum purge option reduces consumption of analysis gas.



Density Analyzer Gas Pycnometer Micro-Ultrapyc 1200e

The cell type of porous materials correlates with performance attributes such as strength, fluid exclusion (or acceptance) and insulating properties. Closed cells impart water resistance, thermal insulation, buoyancy and resilience. Open cells determine properties related to filtration, acoustics and wicking.



Density Analyzer Gas Pycnometer Ultrafoam™1200e

Upgraded pycnometers for cellular plastics etc.; both conform to ASTM D6226. Pre-programmed modes include open and closed cell %, isometric compressibility and rigid foam fracture. Both retain all the features of the standard automatic pycnometers including normal density mode, with rapid switching between methods.



Density Analyzer Automated Tap Autotap™ / Dual Autotap™

Tap density analyzers for bulk density and powder packing tests including Hausner Ratio and Carr index for predicting flowability. Built-in counter for error-free operation. Automated one and two sample models feature unique adapters for range of sample cylinder volumes. Also used for envelope (geometric) density measurement by dry powder displacement.





Carbo 510 Smart Sensor

Our proven online CO₂ sensors have taken the next leap in their evolution: The Carbo 510 Smart Sensor has arrived. This sensor delivers values every 15 seconds and is hailed as the fastest CO₂ analyzer on the market. It is designed in accordance with the hygiene guidelines of EHEDG (European Hygienic Engineering & Design Group) and provides the highest accuracy and reliability.



Carbo 520 Optical

Anton Paar's patented* innovations offer you true values: on any beverage – at any time. With the new Carbo 520 Optical inline sensor you always know the actual CO₂ concentration of all beverages in your process. In addition to process monitoring, the measuring interval of 4 seconds enables a reliable and stable closed-loop control of carbonators.



Inline Refractometer L-Rix 510/520

Enjoy the simplicity of refractive index measurement without maintenance or adjustments. Soldered optics: no serviceable sealing with full CIP/SIP capability, Full range sugar scale instrument 0 to 100%, Accomplishes hygiene requirement according to the European Hygienic Engineering & Design Group, Integrated display and evaluation unit with standard industrial interfaces.



Inline Viscometer: L-Vis 510

L-Vis 510 is an inline viscometer which is immersed directly in the production liquid. It continuously displays the viscosity and temperature of lubricants, starch adhesives, suspensions, and many more process liquids, allowing 24-hour production monitoring. L-Vis 510 is available in three versions: L-Vis 510 Smart Sensor combined with an mPDS 5 evaluation unit L-Vis 510 Smart Sensor with Operating Terminal (OT) - the measurement values are displayed directly on the instrument.



Cobrix 5500/5600

The new Cobrix 5500 and Cobrix 5600 provide continuous measurements of °Brix, %Diet, and CO₂ during soft drink production. Being pre-adjusted in the factory, they do not require time-consuming, product-specific on-site adjustments and commissioning procedures. Besides measuring °Brix, %Diet, and CO₂ concentration, various other parameters, such as alcohol content, sugar inversion, and optionally also conductivity, color, and oxygen, can be determined.



Inline Oxygen Sensor Oxy 510

The oxygen content is a crucial parameter for the taste and shelf life of beverages. Oxy 510 is an inline oxygen sensor which measures dissolved oxygen (DO) in real-time. It provides accurate, drift-free measurements throughout the entire production process. Oxy 510 extends the Anton Paar portfolio for multiple-parameter analysis of beverages and can easily be combined with additional process sensors to meet all future production and quality control requirements.



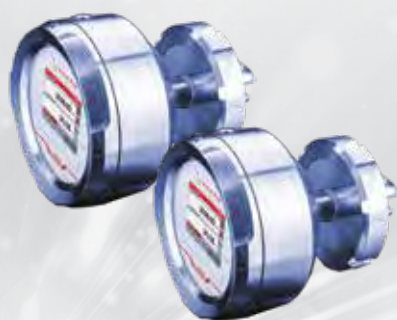
Density Sensors Series L-Dens 7000

The new L-Dens 7000 series – the new generation of Anton Paar’s process density sensors with a tube size of 6.3 mm (inner diameter) – is a result of more than 35 years of essential practical experience. There are two types: 4-digit accuracy L-Dens 7400 and 5-digit accuracy L-Dens 7500. Density values are directly calculated by the sensor electronics.



Density Sensors L-Dens 3300

The new L-Dens 3300 density sensor is a powerful and flexible measuring instrument for online density measurement and concentration determination at a 3-digit accuracy. It continuously determines the density and concentration of liquids. The wide range of application programs makes the instrument extremely versatile, even for small lab production setups. W-shaped oscillating tubes made of glass enable the measurement of aggressive media such as sulphuric acid.



Sound Velocity Sensors L-Sonic 5100/L-Sonic 6100

30 years of experience have substantially contributed to the development of the new generation of sound velocity sensors. The new sensors offer two types of sensing elements: a fork-type L-Sonic 5100 and a tube-type L-Sonic 6100. They are ready for various applications, such as inline concentration measurements, interface detection, or product identification. The sensors continuously monitor the product quality of liquids during production.



DAVIS 5: Software for the recording, storing, visualization and analysis of measured data

Davis 5 continuously records all sensor-specific and product-specific data which are determined by the mPDS 5 evaluation unit. The modern interface design of the software makes it intuitive and extremely easy to use.

REAL-TIME PCR (qPCR)



QuantStudio 1 System

The Applied Biosystems QuantStudio 1 Real-Time PCR System makes quality and reliability the practical choice. This affordable instrument offers basic features ideal for those new to qPCR or those who have a limited budget. Despite its affordability, the QuantStudio 1 system offers the quality, reliability, and advanced user experience of our QuantStudio family of instruments.



QuantStudio 3 System

Now you can get up and running quickly with the Applied Biosystems QuantStudio 3 Real-Time PCR System, a simple and affordable real-time PCR solution designed for users with all levels of experience.



QuantStudio 3D Digital PCR System

Go beyond the limits of real-time PCR. QuantStudio 3D Digital PCR System produces absolute quantification data with the precision and sensitivity you need for your more demanding applications.



QuantStudio 5 System

The QuantStudio 5 Real-Time PCR System is ideal for all levels of users who need a high-performance instrument with features for maximum experiment control. With built-in security features, locked workflows, user account management and options for Web browser-based or desktop analysis, the QuantStudio 5 Real-Time PCR System helps connect you to your data more easily than ever before and offers uncompromising performance and quality.



QuantStudio 6 Flex System

The Applied Biosystems™ QuantStudio™ 6 Flex Real-Time PCR System is ideal for laboratories with multiple applications and end users on a limited budget. With a planned upgrade path to a Applied Biosystems™ QuantStudio™ 7 Flex System that accommodates automation or TaqMan Array Cards, the QuantStudio 6 Flex System is an ideal qPCR platform to accommodate changing future needs.



QuantStudio 6 Pro System

QuantStudio 6 Pro Real-Time PCR System adds innovative smart features to the real-time PCR (qPCR) workflow, all in a compact footprint. With facial authentication, voice commands, Smart Help, multiplex capability, motorized interchangeable blocks, simplified workflow, intuitive software, and large capacitive touch-screen interface.



QuantStudio 7 Flex System

The Applied Biosystems™ QuantStudio™ 7 Flex Real-Time PCR System delivers the proven reliability, sensitivity, and accuracy of the Applied Biosystems™ ViiA™ 7 System in a new industrial design. The QuantStudio 7 Flex System has been optimized to enable the broadest range of quantitative PCR applications, with additional dyes, formats, and automation options.



QuantStudio 7 Pro Real-Time PCR System

QuantStudio 7 Pro Real-Time PCR System adds innovative smart features to the real-time PCR (qPCR) workflow, all in a compact footprint. Designed for ultimate ease-of-use, the system offers high quality, high throughput, excellent reliability, and an optimal user experience for researchers who want to work smarter in the lab. Compatible with over 8 million TaqMan Assays for gene expression, genetic variation, gene regulation, or protein.



QuantStudio 12K Flex System

Combining flexible throughput capabilities with a streamlined workflow, the Applied Biosystems™ QuantStudio™ 12K Flex system takes you from targeted discovery through confirmation and screening, all on a single platform.



Real-Time PCR System StepOne/StepOnePlus™

The StepOne/StepOnePlus™ Real-Time PCR System is a 96-well Real-Time PCR instrument perfect for both first-time and experienced users. The StepOnePlus™ Real-Time PCR System can be setup in a variety of configurations and comes ready to use, out of the box. The StepOnePlus™ Real-Time PCR System is designed to deliver precise, quantitative Real-Time PCR results for a variety of genomic research applications.



PCR Instrument 7500 Fast Real-Time, with laptop computer

The Applied Biosystems™ 7500 Fast Real-Time PCR Instrument, with Sequence Detection System (SDS) Software, is a 96-well, 5-color real-time PCR instrument available for in vitro diagnostic use. Based on Peltier block technology, the 7500 Fast Real-Time PCR Instrument is designed to deliver the performance required for high-quality results, in a 96-well format.



PCR System ProFlex

High-performance thermal cycler with advanced flexibility and control, Multiuser accessible run three experiments at once with three independently controlled blocks. Flexible block configuration accepts five different block formats for optimization and throughput, including the triple 32-well block with independent control



Thermal Cycler SimpliAmp

Elegant design, smart choice. Compact design saves bench space. Easy to operate—large, color LCD touch-screen that simplifies operations. Three independent temperature zones for PCR optimization—features VeriFlex Blocks.



Thermal Cycler Veriti

Easy-to-program, robust thermal cycling. Six temperature zones for PCR optimization features Applied Biosystems™ VeriFlex™ Blocks. Easy to operate—easy-to-use graphical interface, fast protocol setup, and convenient protocol transfer with a USB memory stick.



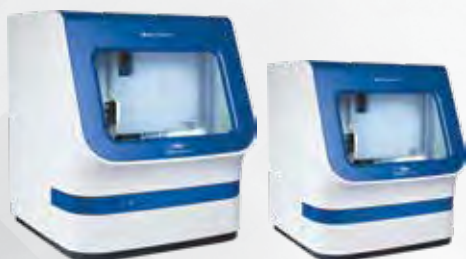
Thermal Cyclers MiniAmp Plus and MiniAmp

The Applied Biosystems MiniAmp Thermal Cycler is a compact, accurate, and economical thermal cycler designed to fit your lab's basic thermal cycling needs. The MiniAmp Thermal Cycler has a 5-inch color touchscreen, making it easy to control, and it can also be accessed through Thermo Fisher Connect, giving you the freedom to design and securely upload your methods from any mobile device or desktop computer.



Genetic Analyzer SeqStudio

The new Applied Biosystems SeqStudio Genetic Analyzer is a low-throughput, easy-to-use, and convenient benchtop system that delivers gold standard Sanger sequencing and fragment analysis with just a simple click. It is easily used across a broad range of applications as well as by multiple users.



Genetic Analyzers 3500 and 3500 xL Series

The 3500 (8-capillary) and the 3500 (24-capillary) Genetic Analyzers are new standard in capillary electrophoresis. The 3500 DX series instruments are the first genetic analyzers designed with a specific feature set and workflow. The complete product combines the instrument with Applied Biosystems® reagents, consumables and software.



Ion GeneStudio S5 Series Next-Generation Sequencing

The Ion GeneStudio S5 Series is flexibly designed to enable a broad range of targeted NGS applications with industry-leading speed and scalability. Select from five different sequencing chips to sequence a throughput range from 2M to 130M reads per run. Simply choose the chip size and the instrument that matches your throughput and application needs. Comes in 3 models Ion GeneStudio S5 System, Ion GeneStudio S5 Plus System and Ion GeneStudio S5 Prime System



Ion Chef Instrument Next-Generation Sequencing

The Ion Chef System is the next generation of workflow simplification products for the Ion S5, Ion Proton, and Ion PGM systems. The Ion Chef System provides automated library preparation, template preparation, and chip loading for users at any experience level. In less than 15 minutes of up-front hands-on time and with the use of pre-packaged library preparation reagent kits.



Ion OneTouch 2 System Next-Generation Sequencing

Fast and simple sample preparation. The Ion OneTouch 2 System simplifies the workflows for the Ion GeneStudio S5 Series, Ion Proton, and Ion PGM systems by providing an automated solution for scalable and reproducible template preparation.



Ion Proton System for Next-Generation Sequencing

Accurate high-throughput sequencing. The Ion Proton System reduces the high cost and complexity of high-throughput sequencing, bringing it to your lab on your schedule.

HUMAN IDENTIFICATION SOLUTIONS

GENETIC ANALYZER & REAL-TIME PCR



HID 3500 & 3500xL Series Genetic Analyzers

The Applied Biosystems™ 3500 Series Genetic Analyzer is designed to maintain the unsurpassed application versatility that life science researchers . The versatile throughput system (48–1200 samples per day) supports a wide variety of applications using its DNA sequencing and fragment-sizing capabilities and, unlike its predecessors, has been designed with a specific feature set and workflow for Human Identification (HID) applications.



HID Ion Chef System

The Ion Chef™ System for human identification (HID) does the repetitive lab work without the need for complex robotics and confusing scripts. Paired with Ion Torrent™ nextgeneration sequencing platforms (Ion PGM™ and Ion S5™ Systems), the Ion Chef System automates Ion AmpliSeq™ library preparation, template generation, and chip loading with push-button simplicity—enabling DNA to data in as little as 45 minutes of hands-on time.



HID AutoMate Express™ Forensic DNA Extraction System

The AutoMate Express™ Forensic DNA Extraction System is an easy to use, robust bench-top instrument that utilizes the PrepFiler Express™ and PrepFiler Express BTA™ chemistries packaged in pre-filled, foil sealed cartridges. We have designed the PrepFiler chemistry specifically to improve the quantity and quality of DNA isolated from forensic samples, thereby increasing the potential to obtain maximum information from downstream Short Tandem Repeat (STR) analysis.



HID Instruments for QuantStudio 5 Real-Time-PCR

The QuantStudio 5 Real-Time PCR System is ideal for all levels of users who need a high-performance instrument with features for maximum experiment control. With built-in security features, locked workflows, user account management and options for Web browser-based or desktop analysis, the QuantStudio 5 Real-Time PCR System helps connect you to your data more easily than ever before and offers uncompromising performance and quality.



HID Veriti™ 96-Well Thermal Cycler, 0.2 mL

The HID Veriti® Thermal Cycler features a 96-well (0.2 mL) format with six independent temperature zones to provide precise temperature control and rapid temperature changes for conducting polymerase chain reactions (PCR). Each HID Veriti® 96-Well Thermal Cycler features a powerful color touch screen and a USB port to simplify instrument setup and use.



HID 7500 Real-Time PCR System

The Applied Biosystems® 7500 Real-Time PCR System for Human Identification provides an advanced, validated solution for casework, databasing, and paternity applications.

MICROARRAY ANALYSIS



GeneChip™ Scanner 3000 7G System

The GeneChip™ Instrument System is a fully integrated platform for conducting your research using GeneChip brand probe arrays. We offer three versions of this system: The GeneChip Scanner 3000 7G System, GeneChip Scanner 3000 7G Whole-Genome Association System and the GeneChip Scanner 3000 Targeted Genotyping System.



GeneTitan Multi-Channel (MC) Instrument

Transform your lab with a GeneTitan™ instrument and experience the superior power of streamlining array processing for discovery, exploration, and screening. Both the GeneTitan Instrument for expression applications and the GeneTitan™ Multi-Channel (MC) Instrument for expression and genotyping seamlessly integrate hybridization, washing, and imaging in a single instrument to provide automated array processing—whether you are performing basic or applied research.

SAMPLE PREP INSTRUMENTS FOR SEQUENCING



Pharma KingFisher™ Flex 96 Deep-Well Magnetic Particle Processor

intended for pharmaceutical analytics applications and is an excellent option for facilities that wish to automate their PrepSEQ™ Residual DNA or PrepSEQ™ 1-2-3 nucleic acid extraction kit protocols. The KingFisher Flex platform is a premier automated platform designed to meet your high-throughput needs. It seamlessly incorporates the rapid, reliable, and cost-effective magnetic bead-based extraction of nucleic acids that you expect from PrepSEQ technology with a 96-well automation system.

CELL ANALYSIS

FLOW CYTOMETRY INSTRUMENTS



Attune NxT Flow Cytometer With Attune NxT Autosampler

The 2018 Invitrogen Attune NxT Flow Cytometer with acoustic focusing technology is now available with 6 fluorescence detectors off the violet laser, allowing measurement of up to 11 fluorescence parameters with a 2-laser instrument, 12 fluorescence parameters with a 3-laser instrument, or 14 fluorescence parameters with a 4-laser instrument (Table 1).



Flow Cytometry Assays and Reagents (Cell Analysis Kits)

Innovative, robust technologies for flow cytometry. We are committed to accelerating your science by providing a comprehensive suite of solutions for the analysis of cells and their function by delivering you our flagship flow cytometry products designed to deliver high-performance results and save you time.

CELLULAR IMAGING

EVOS CELL IMAGING SYSTEMS



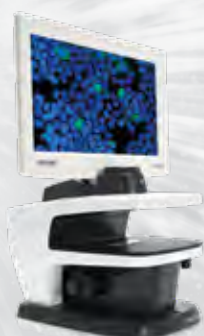
EVOS M7000 Imaging System

Powerful, flexible, intuitive, fast, and fully automated system. The EVOS M7000 Imaging System replaces the EVOS FL Auto 2 instrument. It features high-resolution CMOS cameras (mono and color) with improved resolution and sensitivity across the spectrum and a high-performance PC with a responsive SSD and GPU for faster autofocus.



EVOS M5000 Imaging System

Revolutionizing your imaging routine. The EVOS M5000 microscope is a workhorse for cell imaging labs across a broad range of applications and imaging requirements.



EVOS FLoid Cell Imaging Station

Tired of complicated microscopes? Easy. Fast. Affordable. Designed with input from researchers who use fluorescence microscopy, the Invitrogen EVOS FLoid Cell Imaging Station captures high-quality, three-color fluorescent cell images right at your benchtop.

CELL ANALYSIS

EVOS CELL IMAGING SYSTEMS



EVOS XL Core Cell Imaging System

Easy cell monitoring and imaging in your cell culture hood. The Invitrogen EVOS XL Core Cell Imaging System is the perfect addition to any cell culture room or facility. Ergonomically designed, the all-in-one XL Core system can fit into your tissue culture hood or on an adjacent bench, making it easy for you to quickly analyze the status of your cell cultures.

CELL ANALYSIS

HIGH-CONTENT SCREENING INSTRUMENTS



CellInsight CX5 High-Content Screening (HCS) Platform

The Thermo Scientific CellInsight CX5 High-Content Screening (HCS) Platform is a compact, affordable screening system for researchers looking to increase scale and capacity in everyday use. Designed for researchers looking to increase their screening throughput.



CellInsight CX7 High-Content Screening (HCS) Platform

Flexible imaging options with the CellInsight CX7 High-Content Screening Platform. The Thermo Scientific CellInsight CX7 High-Content Screening (HCS) Platform is an integrated system for all-around performance in screening and analysis.



CellInsight CX7 LZR High-Content Screening (HCS) Platform

Even more advanced performance through powerful laser illumination light source. The Thermo Scientific CellInsight CX7 LZR High Content Screening (HCS) Platform is a fast, laser-based, automated cellular imaging and analysis platform for quantitative microscopy and phenotypic screening. It's designed to provide you with the sensitivity and speed that's needed for emerging assays.



pH & ORP measurement

Meet your pH and ORP needs with an extensive line of pH meters, pH electrodes, buffers, and kits designed to make your complex lab and field measurements routine and reliable.



Conductivity Measurement

Our benchtop meters, conductivity probes, conductivity cells, and conductivity standards are designed to offer maximum repeatability and accuracy in your conductivity readings.



Ion Concentration Measurement (ISE)

Meters, electrodes, and solutions designed to measure a range of ions, including fluoride, chloride, ammonia, sodium, silver sulfide, bromide, cadmium, calcium, carbon dioxide, cyanide, and more.



Dissolved Oxygen Measurement

Dissolved oxygen meters, rugged dissolved oxygen probes, and solutions designed to meet your standards for performance and price for your dissolved oxygen readings.



Multiparameter Meters

Measure pH, ion concentration, conductivity, dissolved oxygen, and temperature with a single, powerful meter. Our benchtop and portable multiparameter meters are designed to increase your productivity in the lab and in the field.



pH & ORP measurement

Meet your pH and ORP needs with an extensive line of pH meters, pH electrodes, buffers, and kits designed to make your complex lab and field measurements routine and reliable.



Conductivity Measurement

Our portable conductivity meters, conductivity probes, conductivity cells, and conductivity standards are designed to offer maximum repeatability and accuracy in your conductivity readings.



Ion Concentration Measurement (ISE)

Meters, electrodes, and solutions designed to measure a range of ions, including fluoride, chloride, ammonia, sodium, silver sulfide, bromide, cadmium, calcium, carbon dioxide, cyanide, and more.



Dissolved Oxygen Measurement

Dissolved oxygen meters, rugged dissolved oxygen probes, and solutions designed to meet your standards for performance and price for your dissolved oxygen readings.



Multiparameter Meters

Measure pH, ion concentration, conductivity, dissolved oxygen, and temperature with a single, powerful meter. Our benchtop and portable multiparameter meters are designed to increase your productivity in the lab and in the field.



pH Titrator Orion Star T910

Use the Orion Star T910 pH titrator for dedicated acid-base titrations including titratable acidity of juices and wines, acidity of food products, alkalinity of waters, acidity and alkalinity of consumer products, total acid number (TAN) and total base number (TBN). Titration techniques include equivalence point titrations and preset pH endpoint titrations for versatile sample analysis.



Redox Titrator Orion Star T920

Use the Orion Star T920 redox titrator for dedicated redox titrations including sulfite/SO₂ and reducing sugar in juice and wine, ascorbic acid (vitamin C) and peroxide value in food products, dissolved oxygen in wastewater by Winkler titration and organic matter in soil. Titration techniques include equivalence point titrations and preset mV endpoint titrations for versatile sample analysis.



Ion Titrator Orion Star T930

Use the Orion Star T930 ion titrator for dedicated ion concentration titrations including salt in food products, calcium in juice and milk, total hardness of drinking water and wastewater, chloride in drinking water and wastewater, ammonia and Total Kjeldahl Nitrogen (TKN) of wastewater and surfactants in consumer products. Titration techniques include equivalence point titrations and preset mV endpoint titrations plus multiple known addition (MKA) mode.



All-in-One Titrator Orion Star T940

Use the Orion Star T940 all-in-one titrator for flexible pH, redox and ion concentration titrations including equivalence point titrations, preset pH or mV endpoint titrations plus multiple known addition (MKA) mode for automated known addition of various ions.



GenPure standard water system

Produce Type 1 ultrapure water with consistent quality for your most demanding and sensitive applications with the Thermo Scientific™ Barnstead™ GenPure™ water purification system. This system offers outstanding control, high-precision and USP-complying conductivity measurement with temperature compensation that can be switched on or off. All GenPure™ systems exceed international standard ASTM Type I, ISO 3696 Grade 1, ASTM D1193 and CLSI-CLRW.



GenPure Pro water system

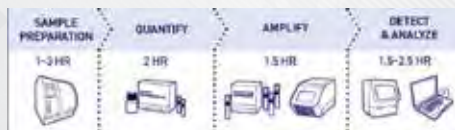
Produce Type 1 ultrapure water while conserving space with the compact and flexible Thermo Scientific™ Barnstead™ GenPure™ Pro Water Purification System. Suitable for the most demanding laboratory applications, this system delivers 18.2 megohm-cm water with consistent quality. Gain flexibility with the dispenser that reaches up to 24" (60cm) from the unit. It can be used on a laboratory bench or on a wall. Integrated feed water monitoring helps to maximize cartridge life. Easily change cartridges within seconds with Aquastop quick-connects.



GenPure xCAD Plus water system

Gain flexibility in the lab with the new Thermo Scientific™ Barnstead™ GenPure™ xCAD Plus Ultrapure Water Purification System. Its advanced technologies allow for simultaneous dispensing from up to three remote dispensers for ease of use in shared laboratory environments. This lab water system comes with leak detection, electronic dispensing for fully automatic volume control and feed water monitoring that alerts users to fluctuations in the feed water quality. All consumables needed for start-up come with the system, allowing for simple ordering and setup.

FORENSIC DNA IDENTIFICATION KITS



GlobalFiler STR Kits (Forensic DNA Identification Kits)

Around the world, forensic labs are asked to do more with less. That's why Applied Biosystems GlobalFiler STR kits are tailored to combine maximum data recovery power with reduced amplification time. As part of the only fully integrated and validated forensic workflow, this 6-dye, 24-locus technology is designed to deliver superior lab performance—all facilitated by high-quality manufacturing at our ISO18385 certified facility, along with comprehensive training, service, and support.



Yfiler Plus PCR Amplification Kit (Forensic DNA Identification Kits)

Y-STR analysis focuses on short tandem repeats (STRs) found on the Y chromosome, only carried by male individuals. For forensic labs, the most common application of Y-STRs is in criminal cases such as sexual assault, where evidence samples are difficult to resolve with traditional autosomal STR analysis due to low amounts of male DNA present in a high background of female DNA.



Identifiler™ Plus (Forensic DNA Identification Kits)

Optimized for casework, the AmpFLSTR Identifiler Plus PCR Amplification Kit enables forensic analysts to recover more interpretable results from a wider range of DNA evidence samples with increased confidence. The new kit includes the same primers and allelic ladder as the widely used Identifiler Kit and harnesses next-generation PCR amplification technology to help provide enhanced sensitivity, a cleaner baseline, improved performance on mixtures, and the ability to overcome high levels of PCR inhibition.



Quantifiler™ Duo DNA Quantification Kit (Forensic DNA Identification Kits)

The Quantifiler® Duo DNA Quantification Kit enables forensic laboratories to simultaneously obtain a quantitative and qualitative assessment of total human and human male DNA in a single, highly sensitive real-time PCR reaction. This guides selection of the optimal STR chemistry (autosomal, Y-STR or miniSTR) and streamlines the workflow while increasing downstream analysis success rates.

MPS ROBOTIC ARM FOR GC/MS AND LC/MS



MPS Robotic Arm for GC and GC/MS

GERSTEL develops and produces automated sample preparation and sample introduction accessories for GC and GC/MS. GERSTEL is the leading partner of Agilent Technologies world-wide for customer focused solutions. GERSTEL solutions are available on all standard GC and GC/MS.



MPS Robotic Arm for LC and LC/MS

As sample preparation specialist GERSTEL offers an array of innovative automated solutions for HPLC & LC/MS Sample Preparation. The optional LC/MS Tool for the GERSTEL MultiPurposes Sampler MPS robotic series offers near zero carryover, fast injection cycles and exceptional sensitivity for LC/MS systems.

MPS ROBOTIC ARM LIQUID



MPS Liquid for GC/MS and LC/MS Analysis Workflow

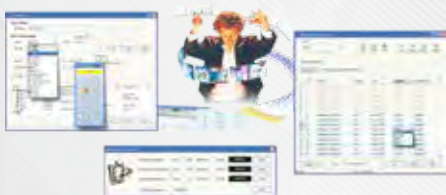
Focusing on the core tasks of an autosampler, the MPS liquid offers large sample capacity, modern intuitive software control, as well as the capability to perform key sample preparation steps such as the addition of internal standards or a derivatization reagent. The MPS helps you ensure that your laboratory offers fast, responsive and productive analyses. Last but not least, the MPS liquid helps to ensure that your results are reliable and accurate.

MPS ROBOTIC WORKSTATION



MPS Robotic WorkStation

The stand-alone MPS robotic Work- Station operates independent of the analysis instrumentation enabling it to prepare samples for multiple analysis techniques. The modular concept of the MPS makes it easy to change to other sample preparation methods enabling you to react quickly and flexibly to changes in lab requirements.



MAESTRO Software

The MAESTRO software operates all GERSTEL modules and system solutions in a simple and efficient manner. MAESTRO can be operated as stand-alone software or fully integrated with the Agilent Technologies ChemStation. Just one method and one sequence table run the complete system from Sample Prep and Sample Introduction to GC/MS or LC/MS analysis. Set-up is performed in a very simple manner: By mouse-click.



Jaw Crusher BB 50

The Jaw Crusher BB 50 has been specially designed for sample preparation in the laboratory. It is used for the rapid, effective crushing and pre-crushing of medium-hard, hard, brittle and tough materials. The space-saving, dust-tight instrument fits on any laboratory bench and is ideally suited to crush small amounts of sample with large feed sizes gently and without loss.



Ultra Centrifugal Mill ZM 200

The Ultra Centrifugal Mill ZM 200 is a high-speed rotor mill with unmatched performance. It is used for the rapid size reduction of soft to medium-hard and fibrous materials. Because of the efficient technique it employs, the ZM 200 ensures the gentle preparation of analytical samples in a very short time.



Cutting Mill SM 100

Cutting mills are suitable for the grinding of soft, medium-hard, elastic, fibrous, and heterogeneous mixes of products. The SM 100 is the budget-priced basic model among the RETSCH cutting mills. With its strong 1.5 kW drive and 1,500 rpm rotor speed the mill is particularly suitable for routine applications. Cleaning is made particularly easy.



Knife Mill GRINDOMIX GM 200

The knife mill GRINDOMIX GM 200 is the ideal instrument for grinding and homogenizing foods and feeds. It allows to process sample volumes up to 0.7 liters quickly and reproducibly. With two sharp, robust blades and a powerful 1000 W motor, it is ideal for homogenizing substances with a high water, oil or fat content as well as for grinding dry, soft and medium-hard products.



Mortar Grinder RM 200

Mortar Grinder can mix and homogenize powders, suspension and pastes even with high viscosity. The RM 200 is suitable for the proper and reproducible sample preparation to analytical fineness.



Vibratory Disc Mill RS 200

The Vibratory Disc Mill RS 200 is suitable for the extremely quick, loss-free and reproducible grinding of medium-hard, brittle and fibrous materials to analytical fineness. The instrument runs steadily and smoothly, even with heavy grinding sets, at maximum speed thanks to the new Stabilized-Plane-Drive.

LABORATORY MILLS, GRINDERS & CRUSHERS



High Energy Ball Mill E_{max}

The E_{max} is an entirely new type of ball mill for high energy milling. The unique combination of high friction and impact results in extremely fine particles within the shortest amount of time. The high energy input is a result of an unrivaled speed of 2000 min⁻¹ and the optimized jar design.



Planetary Ball Mill PM 100

Planetary Ball Mills are used wherever the highest degree of fineness is required. In addition to well-proven mixing and size reduction processes, these mills also meet all technical requirements for colloidal grinding and provide the energy input necessary for mechanical alloying. The extremely high centrifugal forces of a planetary ball mill result in very high pulverization energy and therefore short grinding times.



Mixer Mill MM 200

The mixer mill MM 200 is a compact versatile benchtop unit, which has been developed specially for dry grinding of small amounts of sample. It can mix and homogenize powders in only a few seconds. It is also perfectly suitable for the disruption of biological cells as well as for DNA/RNA extraction. With its high performance and great flexibility the mixer mill MM 200 is a unique product in the market.

SIEVING & FRACTIONING



Vibratory Sieve Shaker AS 200 basic/ AS 200 digit cA/ AS 200 control

The vibratory sieve shakers of the series AS 200 are used in research & development, quality control of raw materials, interim and finished products as well as in production monitoring. The controllable electromagnetic drive offers an optimal adaption for every product. Sharp fractions are obtained even after short sieving times. The AS 200 basic sieve shaker is the economical alternative of the series with familiar RETSCH quality and reliability.



Tap Sieve Shaker AS 200 tap

The analytical sieve shaker AS 200 tap is used in research & development, quality control of raw materials, interim and finished products as well as in production monitoring. Its tapping motion supports the sieve analysis of certain products such as activated carbon, abrasives, metal powder, spices and diamonds, as specified in the corresponding standards.



Test Sieves

The well-proven RETSCH sieves consist of a solid stainless-steel sieve frame of high stability for reliable sieving results. Paying close attention to mesh-specific requirements, the sieve fabric is precisely joined into the frame and tautened. The individual laser engraving of each RETSCH test sieve provides a clear and accurate labeling with full traceability.



EasySieve / EasySieve CFR Evaluation Software

EasySieve, the software for particle size analyses, exceeds manual evaluation in many aspects, due to the fact that the software is able to automatically control the necessary measurement and weighing procedures – from the registration of the weight of the sieve up to the evaluation of the data. It is more simple and more comfortable to use than ever before, and, to put it simply, “easy”. The new EasySieve CFR version offers compliance with FDA 21 CFR Part 11.



Particle Size and Shape Analyzer CAMSIZER X2

The design of the CAMSIZER X2 is based on the well-proven optical particle measurement system Camsizer but is optimized for finer samples (from 0.8 μm to 8 mm). Not only the improved optical resolution but also new options for material feeding allow for an extended application range. Fine particles tend to agglomerate which makes it difficult to record the properties of a single particle. Therefore, it is important to have various possibilities of feeding the sample to the analysis area to be able to find for each material the optimum between the desired dispersion of the agglomerates and the undesired destruction of the individual particle.

SAMPLE PREPARATION - DIVIDING, FEEDING, DRYING & PELLETIZING SAMPLES



Sample Divider PT 100

The sample divider PT 100 divides a sample so exactly that the composition of each fraction of the sample corresponds exactly to that of the original bulk sample. This applies both for fine-powdered & coarse materials. The material feed and dividing processes take place automatically without interruption and without loss of material.

SAMPLE PREPARATION - DIVIDING, FEEDING, DRYING & PELLETIZING SAMPLES



Pellet Press PP 25

Solid, high-quality pellets are an important precondition for reliable and meaningful XRF analysis. The PP 25 is a compact benchtop unit with particularly simple and safe operation. With a pressure force of 25 t it is ideally suited for the preparation of solid samples for XRF analysis. The pellets produced are of high quality and are characterized by their high degree of stability.



Bond Index Tester BT 100 XL

A detailed overview and knowledge of the characteristics of a raw material is of utmost importance, especially when planning the layout of a crushing plant. In order to minimize all possible risks extensive trials are necessary to obtain information on the properties of the raw materials. A clear definition of the required crushing capacities and the desired product quality can be precisely determined by using the Bond Index test methods.



Fluid Bed Dryer TG 200

The fluid bed dryer TG 200 is used in quality control, sample preparation and R&D departments. It permits the gentle drying of organic, inorganic, chemical or pharmaceutical bulk materials without localized overheating. Suitable materials can be coarse, fine, crystalline, fibrous or leafy. The powerful fan of the fluid bed dryer ensures optimal air throughput so that the products to be dried are loosened up and thoroughly mixed resulting in short drying times.



Vibratory Feeder DR 100

The vibratory feeder DR 100 is used for the uniform, continuous feeding and conveyance of pourable bulk materials and fine powders. The DR 100 feeds RETSCH mills, sample dividers, and particle measuring devices, and it is also suitable for other feeding tasks.



Ultrasonic Baths UR 1 & UR 3

The ultrasonic bath range UR includes three sizes for cleaning test sieves and grinding tools quickly and easily. UR 1 is for test sieves up to 203 mm dia., UR 2 for test sieves up to 450 mm dia., and the UR 3 for the simultaneous cleaning of up to 5 test sieves 200/203 mm dia. The gentle yet thorough cleaning of test sieves in an ultrasonic bath increases their working lives as damage which could occur during manual cleaning is avoided.

DIFFERENTIAL SCANNING CALORIMETRY (DSC)

**DSC 204 F1 Phoenix**

The DSC measuring cell consists of a cylindrical high-conductivity silver block with an embedded heating coil for broad thermal symmetry (3D symmetry) in the sample chamber, the cooling ports for liquid nitrogen or compressed air cooling and a cooling ring for connection of the intracooler (also with simultaneous liquid nitrogen cooling). The gas-tight construction and integrated mass flow controllers for the purge and protective gases allow coupling to an FT-IR or MS for gas analysis.

**Photo-DSC 204 F1 Phoenix**

The main advantage of light-curing systems is their fast reaction time. Monomer solutions which are mostly free of solvents can be cured within only a few seconds and already at low temperatures. A combination of thermal and light curing reactions is often applied to dual cure adhesives or paints. The NETZSCH Photo-DSC 204 F1 Phoenix®, Differential Photocalorimeter, works in the temperature range from -100°C to 200°C.

SIMULTANEOUS THERMOGRAVIMETRY ANALYSIS (STA)

**STA 449 F3 Jupiter**

The simultaneous thermal analyzer NETZSCH STA 449 F3 Jupiter® allows the measurement of mass changes and thermal effects between -150°C and 2400°C. The high flexibility caused by the various sensors, the great variety of sample crucibles and the wide TGA-measuring range make the system applicable for analysis of all kinds of materials including also inhomogenous substances.

**STA 2500 Regulus**

The natural gas flow in the top-loading system guarantees automatic protection of the balance against condensation and contamination. The tailor-made differential balance system cancels out buoyancy and convection influences over a broad temperature range. This provides easy operation without the need for timeconsuming baseline runs.



TG 209 F1 Libra

In contrast with other thermobalances, no time-consuming baseline determinations need normally to be carried out with the TG 209 F1 Libra® prior to a measurement. The unique BeFlat® function of the Libra automatically compensates for any external factors influencing the measurement. This cut work hours by up to 50%, leaving more time available, for example, for further measurements.



TG 209 F3 Tarsus

The easy-to-use and cost-effective thermo-microbalance the thermo-microbalance, TG 209 F3 Tarsus®, represents a cost-effective overall concept, tailored not only to the quality assurance of polymers, but also to routine applications in the fields of organic, chemistry, pharmaceuticals, cosmetics and food.

DILATOMETRY (DIL)



DIL 402 Expedis Classic

The dilatometer DIL 402 Expedis Classic offers state-of-the-art dilatometer technology and is designed for sophisticated applications. Like all instruments of the DIL Expedis series, the Classic version features the revolutionary NanoEye measuring cell; a new dimension in measuring range and accuracy.



DIL 402 Expedis Select & Supreme

The dilatometer DIL 402 Expedis Select and Supreme offer state-of-the-art dilatometer technology and are designed for a wide range of sophisticated applications. All instruments of the DIL Expedis series feature the revolutionary NanoEye measuring cell; a new dimension in measuring range and accuracy.

THERMOMECHANICAL ANALYSIS (TMA)

**TMA 402 F1/F3 Hyperion**

The heart of the TMA 402 Hyperion® is a highly precise inductive displacement transducer (LVDT). This technology has stood the test of time; it is also used for dilatometers and allows measurement of even the smallest of length changes, into the nanometer range (digital resolution of 0.125 nm).

DYNAMIC-MECHANICAL ANALYSIS (DMA)

**DMA 242 E Artemis**

The new DMA 242 E Artemis combines ease of handling with the user-friendly Proteus® measurement and evaluation software. This makes it fast and easy to characterize the dynamic mechanical properties as a function of frequency, temperature and time. Its modular design along with a wide variety of sample holders and cooling systems allow the DMA 242 E Artemis to handle a broad range of applications and samples. Various add-on options make it the ideal device for any laboratory and a safe investment for the long-term

**EPLEXOR Series Up to ±500 N.**

The testing instruments of the EPLEXOR® series up to ±500 N enable the dynamic mechanical (or static) characterization of a wide range of different materials including elastomers and polymers, composites, metals, glasses, ceramics, biomaterials and foods, adhesives, and liquids.

MULTIPLE MODE CALORIMETRY (MMC)

**MMC 274 Nexus Multiple Module Calorimeter**

The MMC 274 Nexus® consists of two parts: the base unit with electronics and the exchangeable calorimeter module. This guarantees maximum flexibility. Exchangeable calorimeter modules are available for different applications. The Accelerating Rate Calorimeter (ARC®) module can be used for standard process safety work. The External heater module can be employed for more sophisticated measurements. The HT Coin Cell Module can be used to characterize coin cell as a whole.

ANALYZING & TESTING

ACCELERATING RATE CALORIMETRY (ARC)



Accelerating Rate Calorimeter 254 (ARC®)

The easy-to-use and cost-effective thermo-microbalance The thermo-microbalance, TG 209 F3 Tarsus®, represents a cost-effective overall concept, tailored not only to the quality assurance of polymers, but also to routine applications in the fields of organic, chemistry, pharmaceuticals, cosmetics and food.

DIELECTRIC ANALYSIS (DEA)



DEA 288 Ionic - Dielectric Analyzer

The multi-functional design of the DEA 288 Ionic allows for the application of a great variety of different test conditions such as heat, cold or UV light. This enables the user to easily and conveniently determine the best parameters for processing the material

SEEBECK COEFFICIENT AND ELECTRICAL CONDUCTIVITY (SBA)



SBA 458 Nemesis

The SBA 458 Nemesis® is heralded for its unique measurement setup, which accommodates more sample geometries than usually for this technique. Measurements can be carried out at temperatures up to 1100°C. The SBA 458 Nemesis® has two heavy systems that are employed in an alternating manner for each temperature step. Deviations from linearity and hysteresis due to inaccurate measurement can be immediately observed before and during the measurement.

NETZSCH SOFTWARE



Proteus® Software for Thermal Analysis

First-rate software achievements that have been highly praised among experts, particularly in the area of evaluation (such as reaction kinetics or multicomponent analysis), attest to our high degree of technical progress and warrants the superiority of our products and services.



403 Aëolos Quadro quadrupole mass spectrometer Coupling System

The 403 Aëolos Quadro quadrupole mass spectrometer is a new compact mass spectrometer with a heated capillary inlet system for routine analysis of gases and, in particular, volatile decomposition products of thermal analysis. This system is optimized for coupling to differential scanning calorimeters (DSCs), thermogravimetric analyzers (TGAs) and dilatometers (DILs). The software is unique: fully integrated MS software for measurement and analysis.



(FT-IR) Spectrometers Coupled to Thermal Analysis

Especially in the polymer field as well as in the pharmaceutical and chemical industries, it can be very useful to have knowledge about the gases that evolve during a process, curing/cross-linking, decomposition or any other reaction.



Thermal Analysis GC/MS Coupling

The primary scope of TGA/STA-GC-MS coupling is to detect, separate and analyze organic components. GC is a high-resolution method for separating volatile and semi-volatile compounds. The gas mixtures are separated based on the differences in component distribution between a stationary phase (e.g. inner coating of a capillary) and a mobile phase (purge gas; e.g., helium).

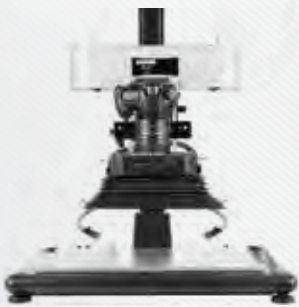
THERMAL DIFFUSIVITY AND THERMAL CONDUCTIVITY LFA / GHP / HFM



LFA 467 HyperFlash – Light Flash Apparatus

With a single instrument setup – that is, without having to swap out either the detector or the furnace – the LFA 467 HyperFlash® can carry out measurements from -100°C to 500°C. Coupled with the broadest range of accessories available on the market, the instrument opens the door to completely new dimensions in the determination of thermophysical properties.

FINGERPRINT EVIDENCE



Fingerprint Photography Workstations, DCS®5

DCS 5 is a comprehensive imaging system for the detection, capture and enhancement of almost any type of fingerprint on any surface or background to ensure that maximum detail is revealed. Not only does the DCS 5 high resolution, 36.3MP camera fitted with application specific macro lenses produce images of exceptional quality, advanced digital enhancement, applied simply, maximises print detail to improve the value of evidence.



Fingerprint Imaging Accessory, Cylindrical Surface Unwrapper (CSU)

'Un-wrap' 2D images of fingerprints on 3D objects including bullets, pens, tools & syringes etc. An innovative new accessory for use with the Crime-lite Imager and DCS fingerprint imaging systems, the Cylindrical Surface Un-wrapper (CSU) enables the forensic examiner to extract 2D images of fingerprints from a 3D cylindrical surface.



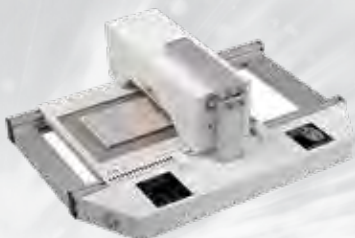
Fingerprint Fuming Systems, SUPERfume®

SUPERfume is a cyanoacrylate fuming system for developing latent fingerprints in situ at major scenes of crime. Designed to treat domestic rooms, offices, garages, and vehicles, the kit eliminates the need for dismantling fixtures and fittings and transporting items back to the laboratory for processing.



Novel Fingerprint Enhancement Techniques, Crime-lite® ASV

The Crime-lite ASV is a bench-top viewing enclosure for the stimulation of infrared activated anti-Stokes fingerprint dusting powders. Anti-Stokes powders absorb invisible infrared radiation and re-emit the energy at visible wavelengths, a process that is the reverse of standard fluorescence.



Thermal Fingerprint Developer, TFD-2

Designed and manufactured by Foster + Freeman, the TFD-2 marks a breakthrough in the detection and enhancement of latent fingerprints using non-destructive thermal development. The first of its kind, the TFD-2 is an automated, high-throughput device capable of developing fingerprints on large quantities of documents, dramatically reducing examination time and manpower requirements.



Fingerprint Treatments, fpNATURAL® Powders

IR fluorescent fingerprint powders fpNATURAL® reveal high contrast fingermarks whilst suppressing background interference. Despite the vast quantity of fingerprint treatments currently available, examiners continue to be frustrated by a number of 'difficult' substrates.

LIGHT SOURCES



Handheld Forensic Light Sources, Crime-lite®82S

Each Crime-lite 82S features 16 LEDs hand-picked for brightness and wavelength accuracy, ensuring consistent performance and effectiveness. The range includes UV, Violet, Blue, Blue/Green, Green, Orange, Red and Infrared narrow bandwidth illumination for detecting blood, body fluids, drugs, and fibers as well as for examining chemically treated fingerprints.



Handheld Forensic Light Sources, Crime-lite®82L

16 high-intensity white LEDs mounted behind a cylindrical lens give a wide floor level light beam that is ideal for detecting surface debris and shoe prints. A concept developed by Foster + Freeman, the Crime-lite 82L produces a 'sheet' of variable intensity (10%, 50%, 100%) white light to reveal floor level evidence and is supplied with blue, green and red clip-on filters to enhance contrast on colored backgrounds.



Handheld Forensic Light Sources, Crime-lite®2

A range of lightweight LED forensic light sources effective at short range providing intense, even and shadow free illumination for locating and examining evidence. The range includes a white light model for general search and eight narrow band light sources with wavelengths in UV, violet, blue, blue-green, green, orange, and red for detecting fluorescent stains.



Handheld Forensic Light Sources, Crime-lite®XL

96 high power LEDs providing 115 Watts of narrowband illumination. Fully portable and robust, the XL has been optimized for wide area examination of crime scenes and emulates the power density and effectiveness of a forensic laser at a fraction of the cost.



Forensic Laboratory Light Sources, Crime-lite®8x4MK2

The Crime-lite 8x4MK2 is designed to meet the varying demands of forensic photography enabling the operator to create the optimum illumination for all types of evidence and backgrounds, enhancing image contrast and definition.



UV-Vis-IR Examination Systems, Crime Scene Investigation

Crime-lite® Beyond Visible is a unique range of products designed to search for evidence in the UV and IR wavebands - beyond the limits of human vision- in order to detect the presence of blood and other body fluids, and to reveal fingerprints while greatly suppressing backgrounds.

DOCUMENT EXAMINATION



VSC®8000/ VSC®80 & VSC®80i Workstations

The VSC®8000/ VSC®80 & VSC®80i Workstations combines sophisticated digital imaging and multi-wavelength LED technology with a clear and efficient software interface, to provide a complete solution to the examination of all forms of questioned documents.



2nd Line Document Examination, VSC®QC1+

Far more than a desktop scanner, the touchscreen VSC®QC1+ enables a series of high-level checks to be carried out on a passport or ID card in seconds, combining ease of use with rapid examination, facial comparison, and data capture.



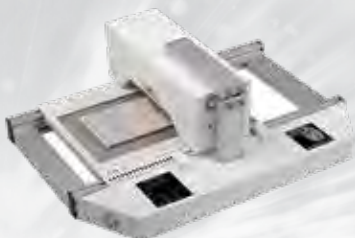
2nd Line Document Examination, eye-D®

Designed for checking standard security features of travel documents, the eye-D® is a low-cost system that can be deployed in large numbers to improve national and border security. Compact, lightweight, and with a padded carrying case that unfolds to provide light shielding, the eye-D® is designed for use in any location from either standard AC power source or 12V DC from a vehicle.



Reveal Indented Writing, ESDA® 2 & ESDA®lite

ESDA® works by creating an electrostatic image of indented writing, which is then visualized by the application of charge sensitive toners. The sensitive imaging process reacts to sites of microscopic damages to fibers at the surface of a document, which have been created by abrasive interaction with overlying surfaces during the act of handwriting.



Advanced Document Analysis, ECCO®2

With a large sample chamber, ECCO 2 is designed for the analysis of paper, glass, metals, paint, fibres, minerals and gunshot residues by laser induced breakdown spectroscopy (LIBS) providing elemental analysis on materials as small as 300 microns.



Raman Spectrometers, FORAM®3

Fast, non-destructive and highly effective, Raman spectroscopy is an ideal technique for identifying and comparing substances of forensic value. Unlike other Raman systems, the foram3 has been developed specifically for forensic examinations and includes dedicated casework management software providing automatic spectral comparisons and data archiving with search and match facilities.

TRACE EVIDENCE



Multi-Examination System Workstation, ffTAM

The ffTA is a powerful and flexible multi-functional system that provides the crime laboratory with a range of analytical facilities on a single microscope operated through a single PC. By switching from module to module the operator can perform a wide range of analytical tasks to extract the maximum amount of forensic evidence in the shortest possible time.



Raman Spectra Databases

A comprehensive collection of libraries has been compiled by S.T. Japan and formatted for use with the Forum and ffTA systems. In total over 9,000 spectra of common and specialist materials are available divided into 20 categories. In addition to identification databases provide information on manufacturer, lot number, appearance, purity, IUPAC name etc.



Forensic Laser-Induced Breakdown Spectroscopy (LIBS), ECCO®2

With a large sample chamber, ECCO 2 is designed for the analysis of paper, glass, metals, paint, fibers, minerals and gunshot residues by laser-induced breakdown spectroscopy (LIBS) providing elemental analysis on materials as small as 300 microns.



Footwear Identification, SICAR®6

SICAR 6, in conjunction with the SoleMate footwear database, is a complete solution for the identification of shoe prints recovered from crime scenes and the management of shoeprint evidence. A sole pattern coding technique is used to characterize a shoe print. The code set is then searched for in the footwear database for matches.



Footwear Identification, SoleMate®

The SoleMate database contains details of more than 37,000 items of footwear including sample shoe prints. Updated four times per year with information and images of the latest sports, work and casual footwear from all major brands, SoleMate® provides users with the ability to identify shoe prints from crime scenes.



FPX VIEWER, Footwear Identification, SoleMate®

SoleMate® FPX VIEWER allows users to quickly and easily identify footwear marks discovered at the crime scene using 'visual coding' method employed by SICAR 6. Using combinations of shapes, patterns, text and logos to describe the visible characteristics found on a scene of crime shoeprint, it is possible to identify matching items of footwear in SoleMate® in a matter of minutes via the intuitive search interface



Electrochemical Detector - DECADE Elite

The DECADE Elite uses Antec's workstation concept, keeping the column and flow cell (separation and detection) at a very accurate and stable temperature. Stable working conditions are a prerequisite for trace analysis, without stability no sensitivity! In addition, the DECADE Elite has ADF (advanced digital filter) which is a noise elimination algorithm specially developed for electrochemical data. It further improves the detection limit, depending on conditions up to a factor 200. Detection sensitivity is especially eminent in neurotransmitter analysis. Together with the new SenCell bottom line detection limits down to 30 pmol/L have been obtained in 2 μ L sample. Antec provides a number of amperometric flow cells with different features for specific applications.



Electrochemical Detector - DECADE Lite - The Entry Model

The DECADE Lite is a typical low cost entry model of an electrochemical detector and has therefore fewer features than the DECADE Elite. It can control only one flow cell (single cell control) and can be operated only in DC (direct current) mode. No pulse or scan mode are available. Furthermore, it has no keyboard and is operated by PC control. Sensitivity wise there is no difference between DECADE Lite and Elite. It has an integrated oven with Faraday cage, is equipped with the superior ADF (advanced digital filter) and is compatible with all Antec Scientific flow cells.

Applications for Detection

For over 25 years, Antec is known for its electrochemical detectors (ECD), providing unprecedented sensitivity in HPLC analyses. In almost any kind of application in conventional HPLC, UHPLC, Micro-, Capillary- and Nano HPLC, ECD is extremely selective and sensitive. It is applied routinely in a number of analyses such as neurotransmitters, (poly)phenols, carbohydrates, and a large variety of pharmaceutical compounds.

The DECADE Elite detector with its advanced electronics provides an enormous linear dynamic range of more than 6 orders of magnitude. The DECADE Elite is used in Antec's ALEXYS systems and is compatible with any commercial HPLC or UHPLC system such as Waters, Agilent, Thermo-Fisher, Shimadzu, Jasco, Perkin Elmer, and Knauer.



Clinical & Diagnostics

Food and Environment

Neuroscience

Drugs & Pharmaceuticals



OrigaStat - OGS080

- Potentiostat
- Galvanostat
- Impedancemeter
- Speed Controller for RDE
- 17V 100mA USB



OrigaStat - OGS100

- Potentiostat
- Galvanostat
- Impedancemeter
- pH-meter
- Temperature probe
- Speed Controller for RDE
- Control of external devices
- 17V and 100mA



OrigaStat - OGS200

- Potentiostat
- Galvanostat
- Impedancemeter
- pH-meter
- Temperature probe
- Speed Controller for RDE
- Control of external devices
- 35V 2A USB



OrigaMu - Low Current Probe

M μ is an Ultra-low current probe resulting know-how and experience of the OrigaLys team in the design of efficient electrochemical systems. Only a perfect knowledge of the most advanced analogue technology reaches this level of excellence: 1pA full scale range with a 30aA resolution.



LandStat - 1 channel

- Potentiostat
- Galvanostat
- Impedancemeter :
 - o 100 μ Hz-1 KHz
- pH-meter
- Temperature probe
- Speed Controller for RDE
- Control of External devices
- 17,5V 100mA USB

POTENTIOSTAT & GALVANOSTAT



Origaflex - OGF01A

- Potentiostat
- Galvanostat
- Temperature Probe
- Connector for Battery holder
- 20V 1A USB



Origaflex - OGF500

- Potentiostat
- Galvanostat
- Temperature probe
- Connector for Battery holder
- 20V 5A USB



Origaflex - OGF05A

- Potentiostat
- Galvanostat
- Temperature probe
- Connector for Battery holder
- 20V 500mA USB



Origatrod - Rotating Disk Electrode

Perform accurate and reliable kinetic measurements thanks to our Rotating Disk Electrode. This instrument is perfectly designed for the electrochemistry. Discover our kit, including the electrode with its digital encoder, its speed controller, its USB connection and its PC software.



OUR SERVICES



H. A. SHAH & SONS

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When you purchase your instrument from H. A. Shah & Sons, you choose a high quality product that you rely upon for its accuracy and stability. Given the proper care, your instrument should provide years of reliable operation. H. A. Shah & Sons has several service programs designed to meet your needs. From the recommended preventive maintenance programs to repair coverage and emergency service, H. A. Shah & Sons will ensure you get the most out of your investment.

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Customer Service Center

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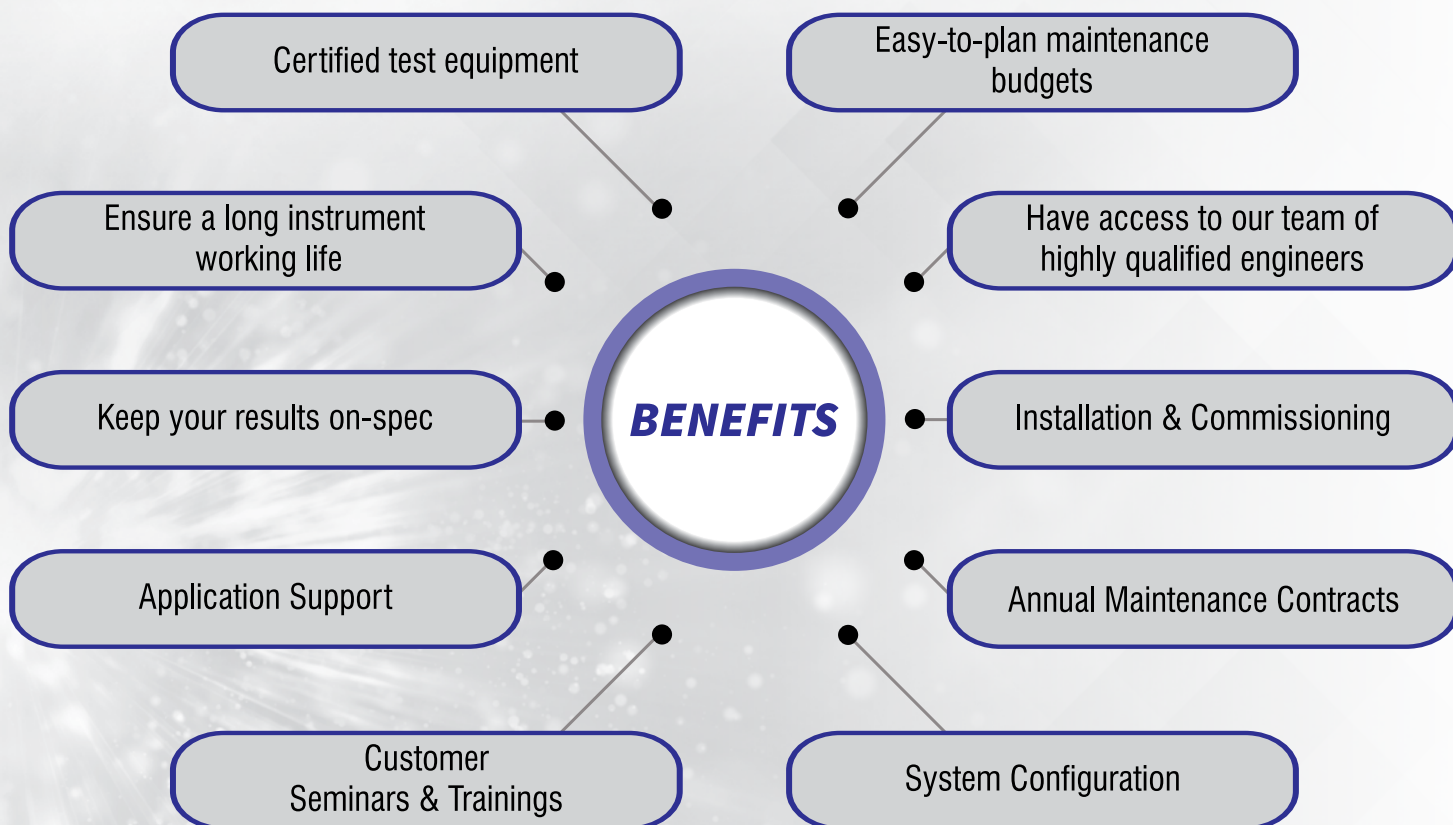
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E-MAIL:

customer.service@hashah.com



BENEFITS & OTHER SERVICES





To meet the growing demand for professional and qualified technical services, H. A. Shah & Sons Technical Service Department has a team of highly qualified and skilled service professionals with a wide-ranging expertise in installation, configuration and commissioning. Our staff is fully trained and equipped to meet the service requirements of our clients.

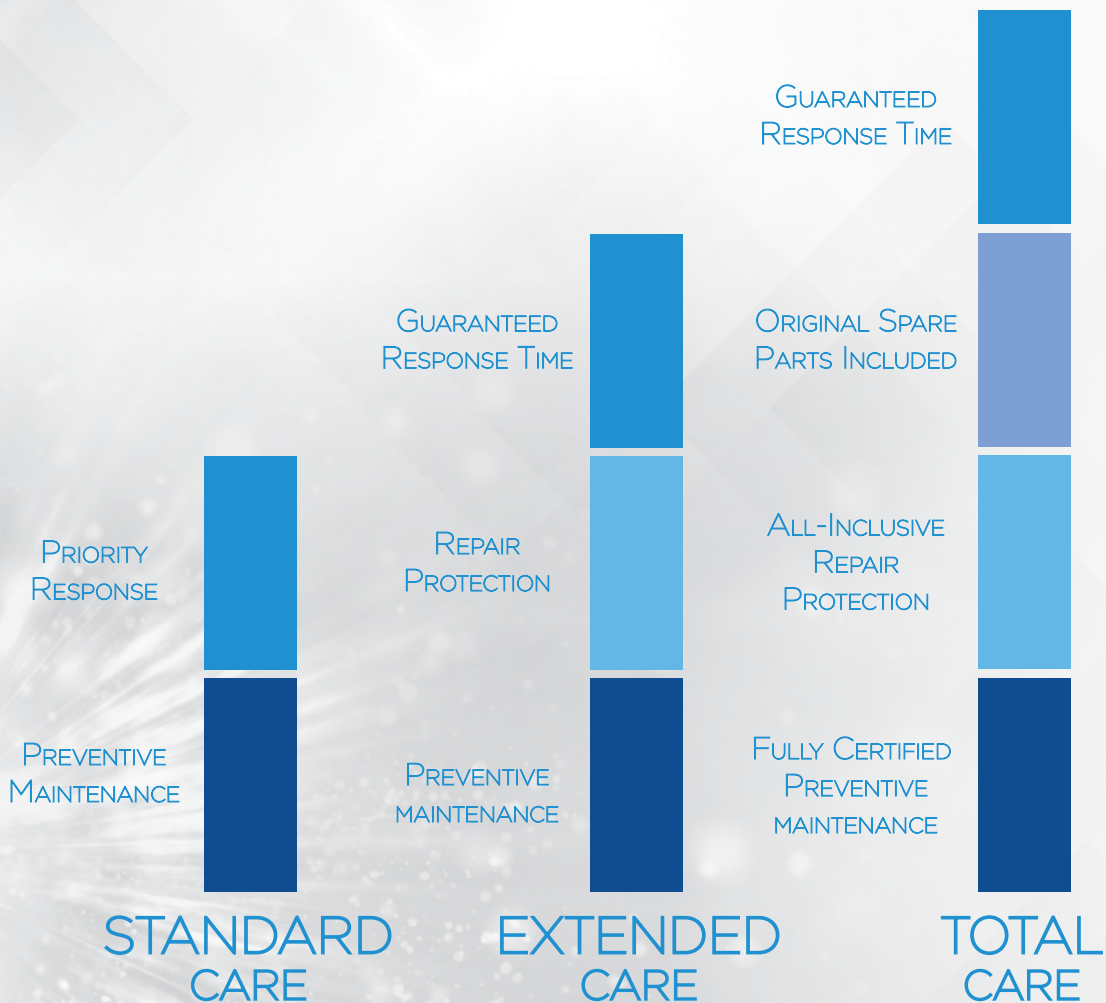
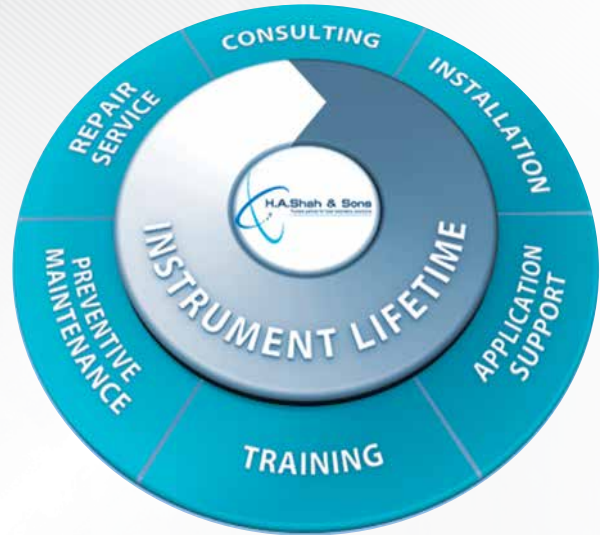
H. A. Shah & Sons proposes annual contracts with the objective of reducing or even eliminating the need for remedial interventions which are frequently penalizing for a laboratory. Excellent results under testing conditions have allowed us to establish a dynamic and efficient service structure. Our service engineers and application chemists are fully equipped to provide immediate on-location backup services to our customers. Similarly, the after sales services personnel of H. A. Shah & Sons are fully trained to not only intervene for preventive or remedial maintenance on all laboratory equipment, but also for installation and training needs.

OTHER SERVICES

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- Customer Seminars & Training

CHOOSE THE RIGHT SERVICE PACKAGE

The services offered by H. A. Shah & Sons are geared to your requirements. You can choose from a range of three Annual Maintenance Contracts, which build on each other in terms of scope and provision.



ANALYTICAL EXCELLENCE CENTER - KARACHI & LAHORE

A PLATFORM WHERE OUR FOREIGN-TRAINED EXPERTS
SHARE THEIR BEST APPLICATION SKILLS & KNOWLEDGE

- Gas Chromatography
- Liquid Chromatography
- Mass Spectrometry
- Spectroscopy
- Dissolution
- Sample Preparation
- Software & Informatics
- Columns, Parts & Supplies
- Density Meter
- Microwave Digestion
- Polarimeter
- Refractometer
- Rheometer
- Viscometer
- Solid Density Analyzers
- pH Meters/Potentiometric Titrators
- Next Generation Sequencing
- Genetic Analysis
- PCR/Real-Time PCR (qPCR)
- Manual Liquid Handling
- Centrifugation
- Microarray Solutions
- Automated Electrophoresis
- Flow Cytometry
- Cell Analysis

COURSES OFFERED

1. Chromatography theory.
 - Separations and resolution.
 - Factors influencing separations.
2. Understanding the influencing factors of separations.
 - The carrier and mobile phase.
 - The science of columns and stationary phase.
 - Influence of temperature.
3. Establishing a strategy for chromatography method optimization.
4. Evaluation of chromatography method robustness.
5. Detectors specificity and selectivity.
6. Spectroscopy techniques.



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