

Business Unit
Technology

Your definitive partner for comprehensive solutions in the food and beverage industry



Delivering Growth - in Asia and Beyond.

Business Unit Technology

With a focus on prioritizing safety, quality, and compliance, our food and beverage analysis covers the entire production cycle, from raw material to the final product, ensuring excellence at every stage

DKSH Technology is a leading provider of Market Expansion Services, proficient across various industries. As a total solutions provider and system integrator, we serve our customers as a one-stop-shop and provide customized technology solutions. We provide professional after-sales services as well as cover the entire product life cycle including installation and commissioning, final acceptance testing, production start-up support, training, maintenance, repair, spare parts and consumables supply as well as trade-ins. We operate as a trusted link between suppliers from Asia, Europe or America and customers in Asia, enabling suppliers to expand their markets.



Sales and services are our core competencies. Our sales, service and application specialists are highly trained and dedicated to deliver complete, integrated laboratory solutions to our customers. Industry-specific expertise, in-depth process knowledge and complementary product-service portfolio enable us to stand out as a total solutions provider.

Business Line Scientific Instrumentation

Business Line Scientific Instrumentation provides Market Expansion Services for innovative manufacturers of high-end analytical and life science equipment. We offer an extensive array of laboratory instruments and consumables for government, research institutions, universities, contract analysis providers, and industrial labs. We also provide comprehensive application support and service.

Your food quality and safety partner

Business Unit Technology provides a range of instruments and solutions to ensure customers can focus on their core business of manufacturing safe and high-quality food products.

Our advanced scientific instruments ensure food safety compliance, meeting quality, authenticity, and adulteration requirements in your labs and production.

Our comprehensive range of instruments and our highly skilled application and service support teams can assist you and your business with the following:

- Sample preparation
- Chemical characterization
- Physical characterization
- General laboratory equipment
- Water treatment solutions

We provide complete and integrated laboratory solutions to:

- Ensure consistency of incoming ingredients
- Support texture understanding and control
- Accelerate innovation and product development
- Predict shelf life
- Streamline quality control
- Reduce process downtime
- Optimize milling and granulation operations
- Improve manufacturing processes
- Increase productivity and yield
- Process water management, effluent reclamation, and sludge treatment as part of a holistic water treatment solution

Market specific applications

With our profound market knowledge we are best positioned to serve our customers according to their needs. We provide products and services to the following industries across Malaysia.



Food and beverage analysis



Ensuring food safety and quality

The analysis of food in food production processes is essential for quality management. Component analysis includes moisture, fat, protein and specific elements (metals, nitrogen etc.). For optimizing production and reducing production downtime, DKSH provides instruments and solutions along the entire production process; from inspection of incoming materials to quality assurance and quality control of finished products. When thinking about food quality and safety, think DKSH.

DKSH - Your reliable partner for efficient production processes



Incoming material



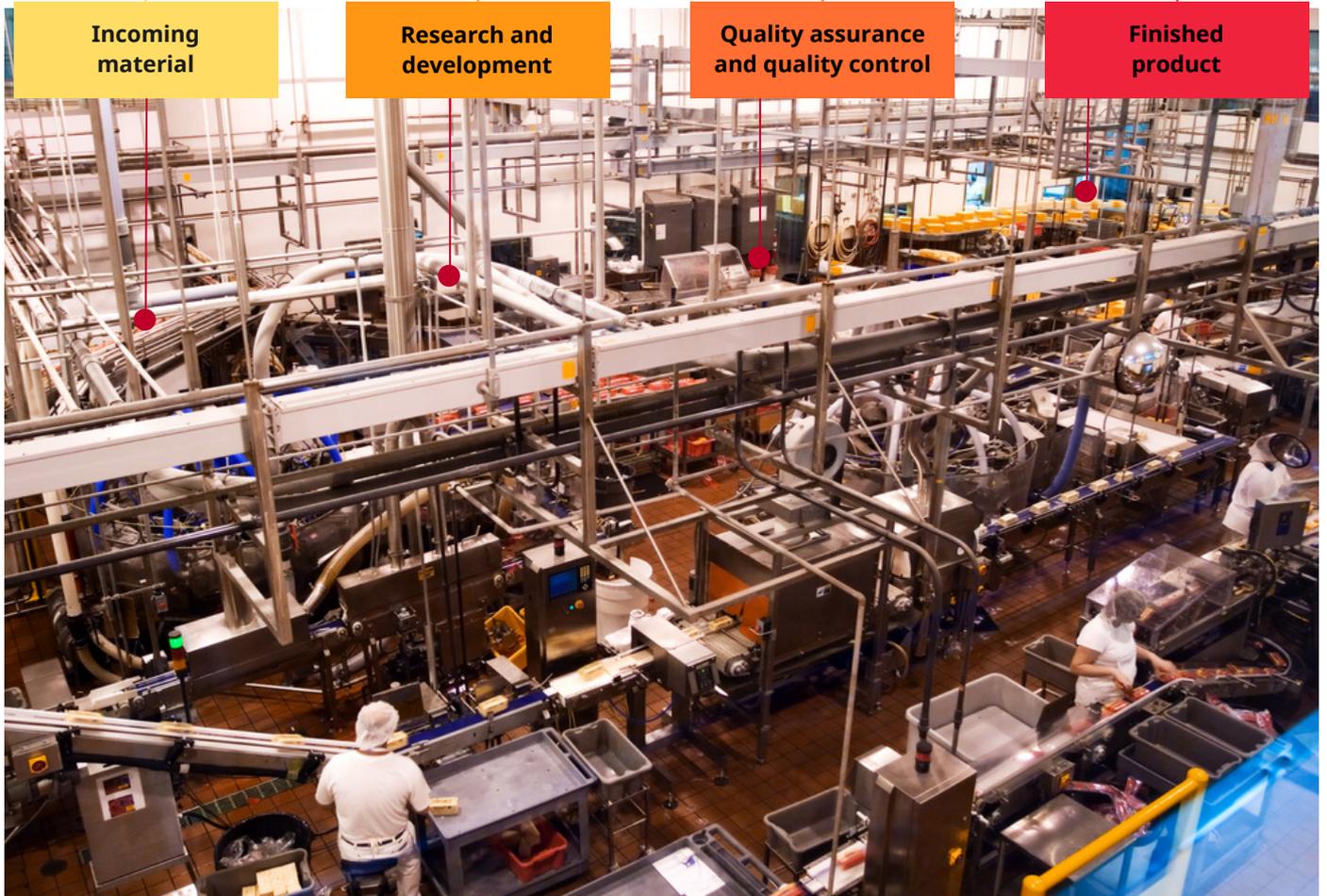
Research and development



Quality assurance and quality control



Finished product



Key advantages of efficient production

With efficient production processes, you can achieve several benefits and improvements within a business or manufacturing environment. Some of the key advantages include :



Enhance

Operational
quality and
productivity of
entire facility



Increase

Employee
satisfaction and
productivity



Reduce

Operational
costs



Achieve

Continuous
improvement



Meet

Regulatory
compliance



Maximize

Your facility
performance

Empowering F&B Innovation Through Precision Instruments

Sample preparation

Sample preparation is an essential part of laboratory processing and is often one of the most time-consuming tasks. Be it heat treatment and particle size reduction of food and beverages, water and gas production to support sample testing, or fusion treatment of food samples, DKSH provides a comprehensive range of instruments for the tasks. Regardless of your laboratory applications, we bring to you a variety of solutions that are efficient and reliable, so you can focus on research and product development.



Malvern Panalytical Claisse LeNeo

Key features :

- Fully automated instrument with ready to use 10 preset fusion programs that ensure high fusion success rate
- User-friendly touch screen interface allows adjustment of all settings and fusion parameters to prepare a wide range of materials (wheat noodle, animal feed, etc.)
- Automated safety door locks to prevent operator contact with high heat
- Easy loading of crucibles, molds and beakers

- Reduce corrosive chemical handling such as hydrogen fluoride

Key applications:

- Prepare glass disks or liquefied sample solutions for XRF, AA and ICP analyses
- Elemental determination of pet food samples using lithium borate fusion and XRF analysis
- Screening for lead contamination in wheat noodles



Questron QWave Closed Vessel Microwave Digestion System

Key features :

- Ideal for use in sample digestion, extraction, evaporation, and synthesis
- Built-in temperature and pressure monitoring of individual digestion vessel
- Controlled release & resealing of over pressure
- Two-speed, 150 CFM exhaust for fume removal and vessel cooling
- Remote wireless controller

Key applications:

- Environmental and agricultural samples (water, effluents, soil, sludge, plants, animal feed, etc.)
- Food samples (vegetables, beverages, seafood, meat, etc.)



Lauda Integral Process Thermostat

Key features :

- New generation of successful Integral XT process thermostats for professional temperature control in the temperature range from -90 to 320 °C
- Electronically controlled, magnetically coupled eight-stage LAUDA Variopump allows optimum thermal connections
- Modern TFT display directly on the device or remotely

Key applications:

- Suitable for applications requiring hydraulic resistance
- Precision-controlled chilling circulator designed to integrate with or enhance reactors in animal feed processing



Lauda Constant Temperature Equipment

Key features :

- Laboratory thermostats, water baths and chillers for a wide range of applications
- Able to provide a temperature constancy of up to ± 0.005 °C across a wide temperature range of -95 to 350 °C, depending on the type of heat transfer liquid
- Simple operation with a TFT color display for intuitive operation and convenient controls

Key applications:

- Temperature control tasks in preparation of biological and food samples, and process reactors
- Incubate samples in water at a constant temperature
- Temperature control of ointments, emulsions, samples and nutrient solutions



Hielscher Ultrasonic Homogeniser

Key features :

- Ultrasonic devices for homogenization, cell extraction, degassing, disintegration, and sonochemistry tasks
- Highly flexible and adaptable to process requirements
- Sonotrodes made from titanium alloy provide both high amplitudes and excellent chemical resistance
- Customizable ultrasonic intensity levels and frequency of powerful sonication pulses

Key applications:

- Extraction of flavors and active compounds
- Fermentation of yogurt
- Homogenization of milk
- Sugar crystallization for confectionery
- Hydrogenation of edible oils
- Liquefaction of honey
- Stabilization of juices and smoothies
- Aeration of batter



Hielscher UIP1000hdt Industrial Grade Homogenizer

Key features :

- Powerful homogenizer (1000W, 20kHz) for industrial liquid processing
- Equipped with colour touch display, remote control, automatic recording, SD card and temperature sensors for precise process control
- Easy setup and requires little maintenance
- Capable of 24/7 operation under high load

Key applications:

- Initiating enzyme reactions in liquid food products
- Acceleration of fermentation
- Mixing, homogenizing and dispersing of dry powder in liquid
- Emulsification of oil/fat in a liquid stream
- Degassing and microbial inactivation (preservation) in meat processing
- Extraction of botanicals



Microfluidics LM20 Microfluidizer® High Shear Lab-Scale Processor

Key features :

- Efficiently converts pressure energy into shear and impact forces, reducing size and temperature during processing
- Micro-channel architecture in interaction chambers scales processing capacity, ensuring performance
- Product stream accelerates, causing higher shear rates than conventional methods

Key applications:

- Emulsions
- Dispersions
- Liposomes
- Cell disruption
- Fine particle deagglomeration
- Nano-encapsulation effectively masks nutrient smells, extends shelf life, and offers time-release benefits



Microfluidics M110P Microfluidizer® Electric Benchtop Homogenizer

Key features :

- 'Plug & Play' electric Laboratory homogenizer
- Designed to reliably achieve continuous pressures up to 30,000 psi maximizing energy efficiency
- Processing diverse fluids, including oil-in-water emulsions and solids-in-liquid suspensions
- Highest shear rates in the market
- Guaranteed scalability

Key applications:

- Production of stable nanodispersions and nanoemulsions
- Microencapsulation of polymers, liposomes & oils
- Deagglomeration



Microfluidics LV1 Low Volume Microfluidizer® Processor

Key features :

- Equipped with Ceramic Interaction Chamber™ with stainless steel enclosure
- Electric/hydraulic drive method
- Designed with 10 ml syringe-type feed and collector reservoirs
- Small sample size requirement (1-6 ml)
- Easily cleanable - no disassembly required

Key applications:

- Emulsions and dispersions processing to improve bioavailability
- Nanoencapsulation (e.g. liposomes)
- Fine Particle Deagglomeration



ColdBlock™ Sample Digestion System

Key features :

- First and only sample digestion technology that utilizes focused short-wave infrared heating and a cooling zone to dissolve solid sample matter into solution for multi-element analysis
- Eliminates perchloric acid requirement and reduces hydrofluoric acid volume for sample dissolution in conventional methods

- Green and safe technology

Key applications:

- Analysis of trace metals in food and feed samples
- Kjeldahl analysis for determination of nitrogen content in food
- Alternative to microwave and acid digestion for sample and rapid sample preparation



Armfield- Sterile Filling System (UHT/Sterile Treatment)

Key features :

- Small-scale, cost-effective R&D solution for sterile packaged samples
- Connects to existing Armfield UHT equipment
- Accommodates a diverse array of containers to create a comprehensive sterile UHT processing system
- Cleaning, sterilisation and filling modes available
- Filling environment to federal standard 209E class 100 (i.e. meets microbiological safety and pharmaceutical production/filling requirements)

Key applications :

- Beverages, dairy and liquid food



Armfield Spray Dryer and Spray Chiller

Key features :

- Engineered to handle laboratory-scale product quantities, generating powders on par with the capabilities of large-scale production dryers
- Both systems offer flexibility with individually controlled inlet and outlet fans, variable nozzle positions, and flow configurations
- Compact, mobile design, easily dismantled for inspection and cleaning
- Rapidly transition from spray drying to spray chilling configurations, enhancing experimental capabilities

Key applications :

- Milk powders, encapsulation, natural food, fruit flavors, infant formula and whey proteins
- Sucrose solutions and fat formulations



Armfield Carbonator-Filler

Key features :

- The best carbonator-filler in the market
- Accurate control of filling and carbonating variables with option of filling and crown seal capping and/or screw top capping at single station
- Accurate carbonation levels in excess of 12g/l (± 0.1 g/l)
- New vacuum system compatible with high foaming products
- ArmBUS control system with 32 process recipes and flexibility of computer control over PLC control
- Full data capture through ArmBUS data viewer (exportable to Excel)
- Twin filling head option available

Key applications :

- Soft drinks, beer, milk, juices and cordials, water, condiments, health and nutritional products



Setting the Standard for Precision in F&B Solutions

Chemical Characterization

The chemical characterization of complete products and raw materials is essential for an enhanced understanding of formulation behavior, which in turn improves and broadens product development capabilities. With the wide range of instruments DKSH offers, you can obtain a better understanding of the composition and behavior of the formulation as well as the raw materials used for processing.



Malvern Analytical Morphologi 4 Particle Size and Shape Analyzer

Key features :

- Broad particle size range from 0.5 μm to >1300 μm enables size measurements of a wide range of samples
- 20+ morphological parameters deliver a highly-detailed description for deeper understanding of your particulate material
- Automated 'Sharp Edge' analysis enables detection of even low contrast particles
- SOP control, from sample dispersion to data analysis, provides simple and automated operation for robust, repeatable measurements

Key applications:

- Measure particle size distributions and understanding how they affect the reactivity, solubility and flowability of ingredients, texture, mouthfeel, and processing of food



Malvern Analytical OMNISEC Multi Detector GPC/SEC

Key features :

- Market leading advanced multi-detector size exclusion chromatography system
- Combines measurements from four detectors that generate results for an accurate concentration profile, absolute molecular weight, and structural data to improve food quality production
- Increase productivity with easy-to-use intuitive software

Key applications:

- Study depolymerization of native polysaccharides which governs specific thickening properties
- Monitor the degradation of polysaccharides due to processing or blending of different source materials
- Determines molecular properties (MW, IV) which relates directly to the bulk properties of food ingredients, impacting their mouthfeel and performance



Biochrom 32+ Amino Acid Analyzer

Key features :

- Fully automated with an 84-position air cooled autosampler
- Vast choice of ion-exchange columns (with top-up resin)
- Ready-to-use reagents starter pack included
- Compliant to EU regulation EC 1831-2003
- Obtain results in less than 10 minutes

- Intuitive Biosys software and OpenLab EZChrom Edition data handling software

Key applications:

- Suitable for quantitative determination of peptide-bound (protein) and free (synthetic) amino acids in food and feedstuffs



Surface Measurement Systems Inverse Gas Chromatography - Surface Energy Analyzer (iGC-SEA)

Key features :

- The world's most advanced, and purpose-built commercial iGC instrument
- Implementing gas-solid technique for characterizing surface and bulk properties of powders, particulates, fibers, films and semi-solids
- The software suite is designed to analyze surface energy heterogeneity, isotherm properties, and related physical thermodynamic parameters

- Measures vapor adsorption isotherms as well as surface area
- Fully automated operation with comprehensive data analysis software

Key applications :

- Total surface energy distribution of milk powders and their flowability
- Determine solubility parameter of various starch types



Malvern Analytical Epsilon XRF Spectrometers Range

Key features :

- Suitable for wide range of sample types : air filters, liquids, powders
- Low infrastructural requirements, ideal for at-line analysis
- Simple, fast and safe sample preparation
- Analysis from Carbon to Americium, from- sub ppm's to 100wt % concentrations
- Combination of excellent detector resolution, high sensitivity and powerful software de-convolution

models yields excellent accuracy and precision results

Key applications :

- Elemental composition monitoring of particle matter in ambient air (EPA IO3-3) or of nutrients and salt content in food products
- Analysis of mineral and trace element content in livestock feed



Surface Measurement Systems Gravimetric Vapor Sorption Analyzer

Key features :

- Measures vapor pressure of solids, liquids and oils using the Knudsen effusion method
- Facilitates quality control checks on packaging materials to prevent spoilage and maintain the quality of packaged food
- Assess vapor transmission and permeability of food packaging

Key applications :

- Shelf life prediction of food products by analyzing the vapor pressure within the packaging to ensure quality and safety
- Analyze packaging materials' vapor barrier properties to ensure preservation of freshness and quality of food products



Biolin Scientific Attension Theta Flow

Key features :

- Designed for reliable and repeatable measurements of wettability and adhesion
- Offers interfacial dilatational rheology
- With liquid handling customization options
- User-friendly interface for experimental setup, data acquisition, and analysis

Key applications :

- Measure contact angle and surface tension
- Surface free energy analysis
- Adsorption studies
- Measure interfacial rheology to predict the emulsion stability - Proteins and lecithin can act as natural surfactants in food products



Biolin Scientific Force Tensiometer (Sigma 700/701)

Key features :

- Automated system, measurement performed with one click
- Optimal choice especially for powder wettability and contact angle experiments
- Real-time data visualisation
- Robust design ensuring consistent performance over extended periods
- The OneAttention Software provides all measurement modes, full automation, easy measurement setup and live results

Key applications:

- Stability and quality optimization of emulsions such as salad dressing, mayonnaise and various sauces
- Study foam stability and improve the texture and mouthfeel of whipped creams or beverages
- Investigate ingredient interaction in food and beverage formulation
- Optimize formulation of beverages, ensuring proper mixing and dispersion of ingredients like flavorings and stabilizers



LabTech SepLine-S Solid-Phase Extraction (SPE)

Key features :

- Automated process of sample transfer, rinsing, loading, drying, washing and elution
- Positive pressure pump to ensure accurate flow rate and high recovery
- Automated holder up to 60 cartridges controlled via software
- Up to 7 different solvents managed via software
- User friendly software with intuitive graphic interface

- Air bubble technique to prevent solvent/sample cross-contamination

Key applications :

- Pesticides residue analysis
- Mycotoxin analysis
- Flavor and aroma analysis
- Nutrient analysis
- Contaminant removal



LabTech HyperCOOL™ Freeze Dryer

Key features :

- Provides wide solvent coverage by dropping temperature down to -55°C, -80°C, -110°C
- HyperCOOL by itself, when equipped with manifolds or chambers, becomes a versatile freeze dryer
- The compatible vacuum rotary vane pump generates vacuum down inside the chamber

- Magnet embedded front cover of the condenser for very convenient cleaning
- Defrost Function available (Hot-gas)

Key applications :

- Food preservation
- Flavor extraction



LabTech Sepaths UP Solid-Phase Extraction (SPE)

Key features :

- Designed for both cartridge and disk applications to treat samples with different volumes
- The system automatically treats 1 to 12 samples through the entire treatment process, including condition, loading, rinsing, elution, and concentration
- A closed system is capable of completely removing solvent vapors through the exhaust line
- Automatic spray cleaning of sample bottles
- Intuitive and easy to use software

Key applications:

- Pesticides residue analysis
- Mycotoxin analysis
- Flavor and aroma analysis
- Nutrient analysis
- Contaminant removal



LabTech DigiBlocks ED54S Organic Digestion System

Key features :

- The heating surface, made of graphite or aluminum alloy and coated with PTFE, can accommodate up to 54 graduated tubes and operate from room temperature to 450°C
- Complies with the highest international standards to perform EPA approved methods
- Uniform temperature regardless the sample position

Key applications:

- Heavy metal analysis
- Mineral analysis
- Contaminant testing
- Nutritional analysis
- Food safety testing



LabTech MultiVap 54 Concentrator

Key features :

- The latest multi-channel and multifunctional parallel instrument to ensure the highest standard of efficiency, speed, reliability, throughput and safety of any concentration process
- Automatic adjustment of nitrogen needle according to the sample volume reduction
- Auto-locked cover during operations
- 7" touch-screen color control panel
- Liquid bath heating mode
- Visible concentration process thanks to the front window and internal lights

Key applications :

- Contaminants, flavors and nutrients analysis of food
- Pesticides residue analysis
- Flavor and aroma analysis
- Nutrient analysis in food products
- Concentrating and purifying herbal and botanical extract



SI Analytics TitroLine® 7000 Titrator

Key features :

- High resolution pH/mV-electrode and temperature inputs for pH, ISE, redox (ORP) or photometric titrations
- Polarizable electrode input for set endpoint titrations („Dead-stop“)
- Linear (fixed increment) and dynamic equivalence point titration mode
- Titration to pH/mV and μA -endpoint

Key applications :

- Acid-base titration
- pH measurement
- Total acidity determination
- Buffer solutions
- Preservative analysis



SI Analytics TitroLine® 7500 KF Titrator

Key features :

- Volumetric Karl Fischer titration
- Online display of curve and measurement drift during titration
- High visibility, full color display that can be easily viewed from a distance and at extreme angles
- Reagent data is securely stored in the intelligent and interchangeable modules
- Polarizable electrode input for set endpoint titrations („Dead-stop“ + KF)

Key applications :

- Water content analysis
- Ingredient verification in food production such as flours, grains, and additives
- Monitor beverage concentration such as fruit juices, syrups and concentrates
- Determine moisture content in bakery and baking products
- Ingredient and formulation optimization



SI Analytics Viscometry Autosampling System AVS® Pro III

Key features :

- Fully automatic and highly precise measuring station.
- Time measurement with an accuracy of ± 0.01 s
- Designed for highly aggressive media
- ProClean system eliminates the need for manual filtration of samples
- Configurable for individual use, including rinsing, solvents, and viscometers

Key applications :

- Optimize food processing by monitoring viscosity consistency of sauces, dressings and syrups
- Quality assurance of beverages
- Confectionery production
- Bakery and pastry
- Formulation of novel food and beverage products



Biokar - Microbiology - COMPASS® Listeria

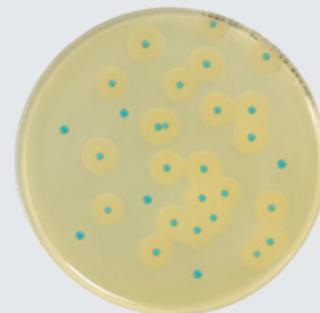
Key features :

- Detection and enumeration of *Listeria monocytogenes* and *Listeria* spp. in human food products and environmental samples
- Rapid negative screening within 40 hours and confirmed the presence of *L. monocytogenes* within 6 hours
- AFNOR validated (BKR 23/02-11/02 (detection) and BKR 23/05-12/07 (enumeration))

- COMPASS® Listeria Agar exhibits excellent selectivity and lack of secondary enrichment, making it ideal for optimal reading and enumeration

Key applications:

- Shelf-Life Assessment by determining product expiration dates
- Support HACCP programs by identifying critical control points where *Listeria* contamination is a risk



Biokar - Microbiology - IRIS Salmonella®

Key features :

- Detection of all *Salmonella* in food and feed products
- Rapid negative screening within 37 hours and a confirmation test in two minutes using CONFIRM' Salmonella kit
- Detection of all motile and non-motile *Salmonellae* including atypical species and serovars

- The clear agar and PINK-MAGENTA *Salmonella* colonies display excellent contrast, with secondary flora appearing in

Key applications:

- Quality control for food product by monitoring *Salmonellae* contamination during production
- Raw material testing to prevent introduction of *Salmonellae* into the manufacturing process



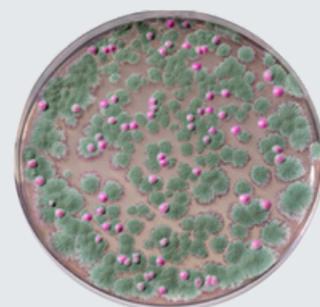
Biokar - Microbiology - SYMPHONY Agar®

Key features :

- Enumeration of yeasts & molds in food and feed products
- Effectively detects yeasts and molds in various types of matrix
- Result within 54-72 hours in comparison to conventional ISO method of 5-7days
- Low tendency of molds overgrowing and covering yeasts colony, making counting easier
- AFNOR validated (BKR 23/11-12/18)

Key applications:

- Quality control testing of food products to meet microbiological safety and quality standards
- Hygiene monitoring by measuring the presence of aerobic bacteria as an indicator of cleanliness
- Shelf-life assessment by monitoring changes in bacterial counts over time



Sherwood Flame Photometer

Key features :

- Single channel analogue flame photometer which can analyse up to five elements (Na, K, Li, Ca, Ba)
- BlueNotes software eases data collection, storage, manipulation and report generation
- High sensitivity with fine manual control of air, and stable flame design
- Ergonomic design, front loading, and an unobstructed sample area for easy cleaning

Key applications :

- Calcium in biscuits
- Sodium, Potassium, Calcium, Phosphate in fruit Juice
- Sodium declarations in food products
- Processed meat - Bacon, beef frankfurter



Grabner MiniFLASH FP Vision - Flash Point Tester

Key features :

- Determine flash points of liquids and solids
- Flash point according to ASTM D6450/SHT0768 (Flash point by continuous closed cup) and ASTM D7094 (Flash-point by modified continuous closed cup)
- Equivalent EN ISO 2719, excellent correlation to ASTM D56, ISO13736, IP170
- Small sample volume (1ml or 2ml) in a completely in a closed cup minimizes fire risk by reducing oxygen levels and automatically

extinguishing the flame after ignition

Key applications:

- Testing of fragrance and flavoring products manufactured from alcohol or organic solvent
- Ensure durability of flavors like esters from fruits
- Prevent loss of flavor during transportation, storage, and production



Grabner MiniVap VP/VPL Vision - Vapor Pressure

Key features :

- Features best-in-class precision and a pressure range of 0-2000 kPa (290 psi)
- Perform fully-automatic, all-in-one direct vapor pressure testing instead of unproven correlations with no costs for method upgrades
- Offer 273 point 2D Correction for precise and accurate temperature and pressure
- Complies with all relevant vapor

pressure standards (ASTM, EN, EPA, CARB)

Key applications :

- To observe and understand different stability / instability phenomena concurrently in food samples; for example, creaming, sedimentation, coalescence, aggregation and flocculation at original product



Solutions for precise and accurate result

Physical Characterization

Physical characterization of formulations is essential to product development, whether for solids, liquids, emulsions or gels. A number of characteristics such as particle shape and size, dispersion stability and surface tension are directly related to the final taste, texture and shelf life of food and beverages. With DKSH's wide range of physical characterization instruments, we can help you find the right solutions for your formulation research and product needs.



Malvern Panalytical Mastersizer 3000 Laser Diffraction Particle Size Analyzer

Key features :

- Particle size measurement of a broad range of sizes - from 10 nm to 3.5 mm, and excellent sub-micron resolution with rapid measurement time
- Provides an accurate, reproducible measurement for materials with broad particle size distributions
- Single dashboards interface that allows real-time optimization of each measurement, with edit-in-place report designed for customized data handling
- Samples can be measured in wet dispersions or dry powders

Key applications:

- Chocolate
- Coffee
- Drinks
- Dry ingredients
- Food additives
- Spreads
- Sauces



Leica Microsystems DM750 Binocular Microscope

Key features :

- Equipped with high quality optics and lenses, providing clear and detailed images for sample analysis
- EZStore™ design with handle and cord wrap allows easy carrying, easy lifting and easy cord storage
- Time delay shutoff saves energy
- EZLite™ – provides over 20 years of bright, LED illumination which saves time and cost of replacing bulbs

Key applications:

- Contaminant identification on microorganisms or mold in food and beverage products to ensure product safety
- Shelf-life assessment by studying microbial growth or changes in food samples over time
- Food structure analysis including texture, consistency, and the distribution of components like fats, proteins, and carbohydrates
- Ingredient and additive analysis within food products



Leica Microsystems DM2700M Upright Materials Microscope

Key features :

- High optical resolution to detect even the smallest defects on the sample
- Highly ergonomic design effectively prevents muscular tension and fatigue, ensuring a comfortable and effortless routine work experience
- Color Coded Diaphragm Assistant (CCDA) simplifies operation, minimizes orientation time and prevents errors

Key applications:

- Crystalline structure analysis to identify and examine crystalline structures present in food products
- Fat and oil analysis - analyze composition and characteristics of fats and oils used in cooking, food processing and product formulation
- Birefringence studies - provide insights into the optical and structural characteristics



Biostep HPTLC-Applicator AS30

Key features :

- Spray-on-technique
- For sample size up to 20 x 20 cm
- Adjustable volume dispensing ensuring accuracy in the analysis of food components
- Multiple sample application on the same HPTLC plate, saving time and resources
- Easy-to-use interface
- Reduced sample consumption, making it a cost-effective option

Key applications :

- Food quality control
- Contamination detection
- Nutritional analysis
- Flavor and aroma profiles
- Authenticity and adulteration detection
- Food additive analysis
- Herbal and botanical extract authentication



Malvern Analytical Zetasizer Range Particle Size Analyzer

Key features :

- Measure particle size range from <1 nm to $10\ \mu\text{m}$
- The M3-PALS with Constant Current Mode helps reduce data errors related to electrode polarization at high ion concentrations
- Generate robust data quickly and increase measurement repeatability

- ZS Xplorer Software offers a sample-centric workflow that allows for the automation of complex analysis without the need for expert knowledge

Key applications :

- Study suspension stability of processed food and beverage
- Study the effect of steric layer thickness on emulsion stability (casein and whey)



Malvern Analytical On-line Particle Size Analyzer (Insitec Systems)

Key features :

- Insitec systems measure particles in the size range $0.1\ \mu\text{m}$ to 2.5mm and deliver the online continuous particle size analysis needed for efficient, cost-effective monitoring and control of industrial processes from dry powder to hot sticky slurries, sprays and emulsions, whether milligrams of material or hundreds of tonnes per hour

- "Close loop" feature allows direct feedback to control board and settings adjustment giving a more guaranteed results to ensure the mill operates closer to target limits

Key applications :

- Spices, curry powders, milk powder and liquid samples



Malvern Analytical Spraytec Aerosol / Droplet Analyzer

Key features :

- Measure across a wide size range ($0.1 - 2000$ microns) without requiring constant optics changes
- Resolve rapid changes in droplet size over time, by measuring up to $10,000$ measurements a second
- Deliver accurate, concentration-independent results using a patented multiple scattering analysis

- Automated software and advanced analysis features ensure repeatable aerosol measurements can be made at high spray concentrations

Key applications:

- Candy coating and granulation
- Various food and beverage formulation



Malvern Panalytical Nanosight Pro Nanoparticle Tracking Analyzer

Key features :

- Updated system features an ergonomic grip for easier, comfortable laser insertion, suitable for all hand sizes
- Offers minimal setup, smart installation and an intuitive interface, making it usable in any lab context
- Advanced optical setup guarantees accurate positioning, high detection sensitivity, and repeatable data through precise alignment

- Flow system enables continuous analysis of similar samples, with a readily accessible and easy-to-clean flow cell to prevent cross-contamination

Key applications :

- Risk assessment of nanomaterials in the food and feed chain
- Meets diverse food science needs - processing, packaging, safety, pathogen detection, and shelf-life extension



LUM LUMiReader X-Ray Dispersion Analyzer

Key features :

- Designed to study dispersibility, stability, separation, and consolidation phenomena for completely transparent to completely opaque emulsions, suspensions, sludges, slurries, foams, and powders in real time
- No dilution required, regardless of concentration level
- Determine concentration gradients within phases and sediment

Key applications :

- To observe and understand different stability / instability phenomena concurrently in food samples; for example, creaming, sedimentation, coalescence, aggregation and flocculation at original product



ASD LabSpec NIR Spectrometer

Key features :

- Provide rapid, non-destructive, precise measurements in lab and industrial environments
- Process spectrometer ideal for continuous measurement of solids, powders and blended materials transported on conveyor systems
- Portable version delivering full-range spectral measurement available for field data collection

Key applications :

- Determine food authenticity, quality and safety
- Study of sensory and cognitive factors in food preference
- As a non-destructive method without any sample preparation, it is used for analyzing main constituents such as protein, moisture, fat, lactose, and fiber



Schmidt + Haensch High Resolution In-line Process Refractometer

Key features :

- Unique water cooling system, enables hot process measurements, CIP, and maintains accuracy over its lifespan
- Measuring range 1 1.3200 - 1.3720 RI / 0 - 25 Brix
- Measuring range 2 1.4200 - 1.6000 RI / 50 - 100 Brix
- Resolution 0.00005 RI / 0.02 Brix

- Pressure load capacity MPa (145 psi, 10 bar) - up to 30 bar available with APV connection

Key applications :

- Determination of refractive index
- Standard scales (Brix, Oechsle, Degree Plato, Zeiss, Fat, Honey) with automatic temperature compensation



Schmidt + Haensch VariRef Refractometer

Key features :

- Fast and durable bench-top refractometer ideal for high throughput applications in the sugar, food, and beverage industries
- Shallow sample well for easy cleaning as to reduce the problem of cross contamination between samples for accurate measurements
- Sapphire prism for high mechanical and chemical durability

Key applications :

- Measures liquid media from low to high viscosity and independent of opacity and color
- Used to determine the refractive index of substances such as soils, fats, sugar, beer, and spirituous beverages, and is used in clinical chemistry



Schmidt + Haensch VariDens – Density meter

Key features :

- Modular, connectable to internet browser and tablet
- Intuitive user interface
- Fast temperature control
- Easy cleaning
- Maintenance free
- Compliant with 21 CFR Part 11
- ELN/LIMS ready

Key applications :

- Concentration of sugar in beverages
- Alcohol content in alcoholic drinks
- Density of oils, syrups in food production
- Brix measurement in fruit juice
- Fermentation process in brewing and winemaking
- Measure density of milk and milk products



LUM LUMiSizer® Dispersion and Stability Analyzer

Key features :

- Quick characterization of any demixing phenomena, consolidation and calculation of the velocity distribution in centrifugal field
- Run up to 12 samples simultaneously
- Accelerated phase separation 6-2300 times compared to gravity

Key applications :

- Determine separation stability, velocity and particle size distribution and consolidation in liquid food samples



LUM LUMiFuge® Dispersion and Stability Analyzer

Key features :

- Enables direct accelerated stability testing through high centrifugal force
- Measures extinction of light through the sample in real-time using STEP-Technology®
- Work with high sample concentrations and a wide range of temperatures
- Run up to 8 samples simultaneously
- The only instrument in the world that enables physically

accelerated, direct and efficient stability testing and ranking of formulations

Key applications :

- Quality control and optimization of various food products including sauces, dressing, and beverages
- Milk and dairy product parameter determination and monitoring



LUM LUMiReader® PSA

Key features :

- Specifically designed PSA module for high resolution particle sizing and to allow measurement of the velocity distribution of separating particles without a need to know any material constants (i.e. velocity, density)
- Contains an optical block and temperature control element for maximum flexibility and accuracy
- Accelerated phase separation 10

times compared to gravity

- Particle size distribution 500 nm - 300 µm
- Observation time from 0.5s and above

Key applications:

- Real-time characterization of aroma emulsions, plant-based beverages and for determining particle size distribution



Solution for precision and accurate result

General laboratory equipment

With a varied array of general laboratory equipment, we aim to boost the efficiency and accuracy of your daily lab tasks, enabling you to focus on vital scientific methodologies for research and product development. This ultimately propels your products to higher standards. Our comprehensive equipment range covers all your needs, from measurements to mixing and centrifugation.



LabPRO Micropipette

Key features :

- Micropipette models capable of dispensing volumes spanning from 0.2 μl to 10,000 μl
- Completely autoclavable to ensure minimal sample contamination in tightly regulated environments
- Universal tip cone design for compatibility with major brands of micropipette tips

Key applications:

- Volumetric handling for general laboratory activity



LabPRO Bottletop Dispenser

Key features :

- Bottletop dispenser models for a range of volumes from 0.25 to 100ml, designed for high chemical compatibility and smooth movement
- Designed with a recirculation valve for bubble free dispensing without any loss of reagent
- Adjustable dispensing nozzles with adaptors for fitting on a range of regular laboratory reagent bottles

Key applications:

- Volumetric handling for general laboratory activity



Foxx Lifesciences 47mm 0.45µm MCE EZBio® Gridded Disc Filter

Key features :

- The gridded membrane, made from cellulose ester and 0.45µm pore size, is sterilized through gamma irradiation and individually packaged, ensuring compliance with USP Class VI Standards and FDA standards

Key applications :

- Used for microbiology analysis of water and other liquids in the food and beverage industry



Foxx Lifesciences Carboys

Key features :

- Large grip handles for ergonomic transport
- 15% head space for dilutions
- Moulded in graduation marks
- Moulded in material identification mark
- Moulded in volume
- Moulded in autoclavable identifier

Key applications :

- Used for storing, mixing and dispensing solutions in food and beverage industry



IDEX Column Fittings and Hardware/Pumps

Key features :

- Superior chromatographic column hardware, ranging from adaptors, tubing assemblies, injection loops, probes, and sleeves. Also available are filters, frits, adaptors, and backpressure regulators, as well as vacuum degassers for solvent preparation before chromatography
- A variety of pumps, valves, and fluid control devices are available for fluid manipulation. Manifolds and specialized tubing and fitting components are also available for system integration with the real world in a variety

of materials

- Feature speciality high-performance polymers and a variety of materials including high pressure and fluoropolymer tubing

Key applications :

- Size reduction solutions - dry, wet, fine, gentle milling and sieving
- Agglomeration/roll compaction solutions
- Liquids processing solutions - fluid mixing, dispersion and emulsification



LAMY First PRODIG CP 1000 Viscometer

Key features :

- Supports cone-plate measurement
- Quick attachment with AC265 coupling
- Inbuilt software for programming
- Data recording and USB transfer
- Integrated temperature probe
- Compatible with RheoTex software
- Display of viscosity limits according to mobile and speed

- LIMS function
- QC limits function

Key applications :

- Yogurt texture
- Sausages firmness
- Rusk rigidity
- Cereals bars flexibility
- Feta cheese texture
- Brittleness of shorbread
- Chocolate stuff biscuits



Neptec Halios Lab Water Systems

Key features :

- Modern 10L storage tank
- Compact and efficient production unit
- Low operating cost
- External tabletop dispenser with ergonomic design
- Innovative user interface with large intuitive touchscreen and real-time TOC monitoring
- Integrated leak detector
- Superior deionization and TOC removal

Key applications:

- Provide high-purity water essential for quality control and testing
- Used to purify water for beverage formulation
- Brewing process for alcoholic drinks
- Food ingredient preparation for brines, sauces and marinades
- Chemical and microbiological testing



Nabertherm Muffle Furnaces up to 1400 °C

Key features :

- Maximum temperature up to 1400 °C
- Heating elements on support tubes ensure free heat radiation and a long service life
- Adjustable air inlet integrated in door
- Controller B510 (5 programs with each 4 segments)
- NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive

Key applications:

- Determination of mineral content
- Residual ash analysis
- Calibration and standardization for food quality testing
- Quality control
- Research and development in food formulation



OHAUS Analytical Balance

Key features :

- Quick and accurate, ease of operation, precise measurements with up to 0.1mg readability
- Stable readings of measurement repeatability up to +/- 0.0001 (S.D) (mm)
- Dynamic temperature compensation accounts for changes in environment for accurate weighing

- Large backlit LCD screen for easy reading

Key applications :

- Precise food ingredient weighing in R&D laboratories



Kirsch Laboratory Freezer and Refrigerator

Key features :

- Even temperature distribution and homogeneity in the interior
- Consist of robust housing and high quality components Made in Germany
- Come with safety features such as alarms to alert users of temperature deviations, power failures, or other issues that could jeopardize the contents
- Low-noise compressor 10 to 40 dB

Key applications :

- Preserving the integrity of sensitive samples and materials, supporting scientific research, clinical diagnostics, and pharmaceutical development, and ensuring the safety and quality of stored substances



Kirsch Explosion Proof Freezer and Refrigerator

Key features :

- Laboratory freezers and refrigerators with explosion-proof interior, built according to the 94/9/EC (ATEX 95) directive
- TÜV-SÜD Confirms Intrinsic Safety of the LABEX®-Models
- Special conduction concept for electric flows that may arise due to static charge

Key applications :

- Safe storage of flammable or explosive substances (eg. flammable chemical solvents)



Shel Lab Incubator and Refrigerated Incubator

Key features :

- Uniform temperature distribution within the chamber
- Humidity control capabilities
- Thermoelectric (Peltier) cooling for low maintenance and low power consumption (refrigerated incubator)
- Selected models with secondary temperature controller for added safety and security over temperature set points
- Strategically placed heaters and heated outer doors to provide uniform heating

Key applications :

- Microbiological detection
- Bacterial culturing and research
- Food processing and quality control



Shel Lab Laboratory Oven

Key features :

- Triple walls construction that keeps laboratories and oven surfaces cool for energy efficiency and ensures safety
- Turbo blower-assisted airflow design and heavy duty motors offers excellent temperature uniformity and fast temperature recovery

Key applications :

- For uniform drying, baking and curing of samples
- Precise temperature storage of samples



Hermle Centrifuge

Key features :

- High-Speed centrifugation for separating substances of different densities quickly and efficiently
- Small, universal laboratory centrifuge covering wide range of research applications
- Wide assortment of rotor options from swing out, micro, to high volume angled rotors, exchangeable within seconds.

- Include safety mechanisms such as lid locks and imbalance detection systems to ensure the safety of samples

Key applications:

- Dairy products, yogurt and mayonnaise



Claid Nitrogen Generator

Key features :

- The generator can work unattended and autonomously 24/7 without requiring surveillance or programming
- Automatic stand-by mode reduces energy consumption when production flow exceeds consumption
- Oxygen analysers are integrated into every N2 FLO, PICO, and MAXI generator to maintain real-time control over nitrogen purity

- Custom nitrogen purity can be set according to the application requirements

Key applications :

- Used in packaging for food storage and bottling of wine, food oils, juices and water



Claid Plug and Play Nitrogen Generator

Key features :

- Oil-free compressor system
- The generator is equipped with a smart control system that automatically turns into stand-by mode when there is no nitrogen consumption
- PSA (pressure swing adsorption) technology
- Nitrogen purity is better than food grade E941 (EU rule for food packaging)
- The nitrogen produced is stored in a tank typically 50 or

100 litres, which is directly connected to the generator

- Basic configuration delivers 3.5 NI/min of nitrogen at a pressure of 7 bar, with a purity of over 99.5% (with 0.5% oxygen content)

Key applications :

- Specialized nitrogen generator crafted for dispensing various retail beverages like wine and beer



Claid Brezza HyGen Hydrogen Gas Generators

Key features :

- Available in three models for 200-400-600 Nml/min flows with > 99.9999% purity
- Hydrogen production in proportion to consumption, with minimum gas storage inside the instrument
- Maintenance: easy to replace and low cost consumables

- Parallel connection up to 4 stackable tower configuration generators

Key applications :

- Designed for Carrier Gas in GC, GC-MSD and "FAST GC"
- Used in ICP for collision reaction interface



Ebro EBI 300 Multi-Use USB Data Logger

Key features :

- Direct USB connection
- Automatic PDF report generation
- Programmable at www.ebi300.com, no special software for programming and readout required
- Indication of alarm status via flashing LED
- Conforms to FDA 21 CFR Part 11 and ATP
- Complies with GMP and VO (EG) 37/2005

Key applications :

- For cold chain monitoring



Ebro EBI 20-T1 Temperature Data Logger

Key features :

- Fast, easy and precise temperature monitoring
- Memory for up to 40,000 measurements
- Measurement range from -30°C to +70°C
- Excellent price/performance ratio

Key applications:

- Transport monitoring
- Storage monitoring
- Process monitoring



LabVantage Solutions Pre-Packaged LIMS for Food & Beverage Labs

Key features :

- Enables scheduling and management of microbial testing on product samples, with real-time tracking
- Allows for the integration of various laboratory instruments, including pH meters, balances, and chromatography systems, for automated data entry into the LIMS
- Real-time monitoring of samples and product quality during production, along with processing steps, alerts for immediate action to minimize production losses

Key applications:

- Handling batches and samples, as well as producing Certificate of Analysis (CoA); Advanced Quality Management
- Laboratory analysis commonly used by F&B: Moisture content, acid value, total solids, Ascorbic Acid
- Ability to schedule and manage microbial testing on product samples and incubation tracking
- Strategizing, overseeing, and evaluating product stability for shelf-life determination



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