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SERVICE

Innovation



Protecting your laboratory environment  
**LABCONCO**



Dependability



circa 1950

Shortly after the turn of the century, a number of companies — primarily agricultural — began to establish chemical testing laboratories to help them to meet emerging governmental regulations. As these labs developed new testing methods and new measurement criteria, a need for new types of equipment also evolved.

In 1925, two young entrepreneurs — Ralph Callaway and Phil Goldfish — joined forces to address this need.

Their first product, the Kjeldahl Nitrogen Determination Apparatus, was manufactured in a small garage in downtown Kansas City. Over the years, their company — initially called Laboratory Construction Company and now known as Labconco Corporation — continued to develop and produce specialized equipment for the laboratory.

Today, our company employs more than 200 associates at facilities in three locations and manufactures more than a dozen different product lines. Labconco is ISO 9001:2000 certified, one measure of our commitment to quality and consistency in design and manufacturing. Through a worldwide network of distributors, we serve a variety of laboratory customers around the globe, including universities, research centers, hospitals and governmental agencies.

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Our "Unifying Statement" was developed to communicate Labconco's business philosophy:

*Labconco's commitment is to supply superior products to the laboratory marketplace. With this commitment, we will endeavor to:*

- *Provide superior quality and service for our dealers and customers.*
- *Strive to explore and develop new and profitable market segments while continuing to improve upon existing product offerings.*
- *Endeavor to listen, trust and respect the creative potential of all people within our organization.*



Protecting your laboratory environment is the foundation of our product development efforts, and every Labconco product is designed with safety in mind. For example, our laboratory fume hoods protect the user from breathing harmful chemical vapors . . . our biological safety cabinets protect the user and the environment from exposure to biohazardous particulates . . . our water purification systems protect sensitive samples from exposure to contaminated water . . . our glassware washers not only protect delicate laboratory glassware, but also ensure it is clean enough to meet stringent analytical standards.



Labconco's customer service is second to none. Our qualified customer service representatives and product specialists are immediately available to answer your questions — whether routine or technical — from 7:00 a.m. to 6:00 p.m. Central Time, Monday through Friday. Labconco's Technical Forum at [www.labconco.com](http://www.labconco.com) lets you post your questions and receive feedback from our product and technical service specialists as well as other customers.

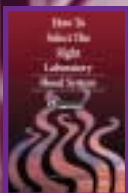


A range of educational solutions is available to help you understand, operate and maintain Labconco equipment, from free industry service guides that provide generic information on equipment selections to instructional product videos on CD-ROM to specialized training at your premises or in our fully functional, state-of-the-art laboratory and auditorium at our headquarters.

A laboratory fume hood is a ventilated enclosure where hazardous materials can be handled safely. It is designed to contain contaminants, preventing their escape into the laboratory and minimizing the operator's contact with and inhalation of fumes. This is accomplished by pulling air from the laboratory room into and through the hood, where it is diluted before it is exhausted through the hood's duct system to the outside.

Labconco has been building safe, reliable fume hoods and other ventilation products for more than 55 years and currently offers the broadest selection of fume hoods and accessories available. The patented Protector® XStream™ High Performance Laboratory Hood is one example of Labconco's dedication to continual research and development.

To ensure fume hoods and enclosures meet our demanding standards, Labconco randomly selects hoods from our production line and conducts extensive tests, such as ASHRAE Standard 110-95.

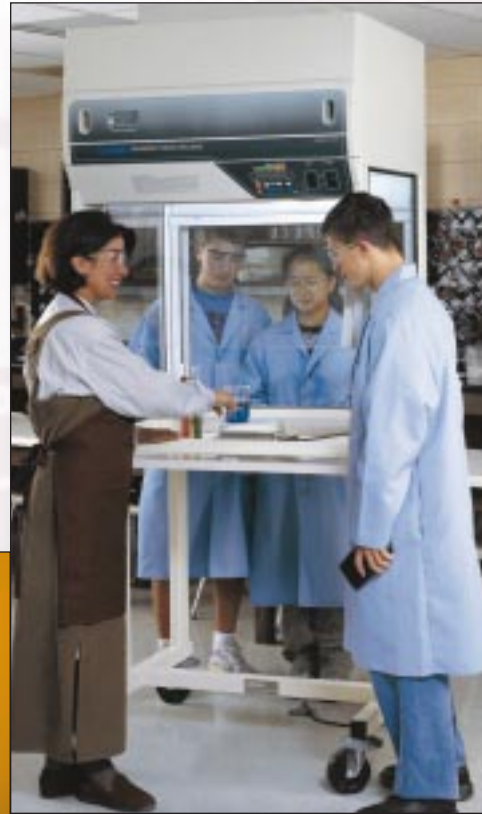


*Request these publications for additional information about the products shown here.*

*The material lining the inside of the hood is critical, and should be selected based on the types and concentrations of substances to be handled. Many Labconco hoods feature specially formulated fiberglass reinforced polyester. This molded, one-piece liner is extremely chemical and corrosion resistant, highly durable and provides excellent light reflectivity.*



Protector® Laboratory Hoods are available in widths from four to sixteen feet. Specialty hoods as small as 28" wide and special application hoods, such as walk-in hoods (shown above), are all standard Labconco products.



Labconco's Basic Hoods are a great choice for those areas where safety ventilation is sometimes required, but a chemical fume hood is not in constant use. These hoods lend themselves to classroom applications and industrial processes in which chemicals and solvents are used. In addition, their lower height and 22" depth permit use in tight spaces such as trailers. Basic Hoods are available assembled or unassembled.

The design of the Paramount® Filtered Enclosure incorporates proven fume hood technology including an aerodynamic air foil and back baffle. Labconco uses a computer-based carbon filter modeling program to help customers determine whether a carbon-filtered enclosure is the right equipment for their application and to estimate the life of the filters.

In addition to its industry-leading fume hoods, Labconco manufactures a broad line of other laboratory ventilation products.

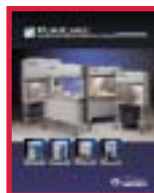
Sometimes rather than protection from fumes and vapors, laboratory personnel need protection from airborne particulates that are hazardous in even low concentrations, or are biohazardous. Other times, the samples or products under investigation need handling in a particulate-free environment.

To provide protection from airborne particulates, Labconco Purifier® Safety Cabinets, Safety Enclosures and Clean Benches and PuriCare™ Laboratory Animal Research Stations. These containment devices use high efficiency particulate air (HEPA) filters, which retain airborne particles and microorganisms but allow vapors and gases to pass through. Purifier Delta Series Class II, Type A2 and Type B2 Safety Cabinets and PuriCare Procedure, Open Access



and Vertical Flow Stations protect the operator, environment and product from exposure to particulates. Purifier Class I and HEPA Filtered Safety Enclosures and PuriCare Bedding Disposal Stations protect the operator only while Purifier Horizontal and Vertical Clean Benches protect the product only.

Protector® Glove Boxes provide even greater protection. These sealed enclosures have long, relatively impermeable gloves secured to ports in the outer walls through which the operator can handle materials.



*Request these publications for additional information about the products shown here.*

The Centers for Disease Control and the National Institutes of Health have established Biosafety Levels 1 through 4 to categorize potentially pathogenic organisms. Labconco's Purifier Safety Cabinets are suitable for use with agents that require Biosafety Level 1, 2, or 3 containment, as found in microbiology and virology laboratories. They are also well-suited for pharmacy work involving cytotoxic aerosols created in the preparation of antineoplastic drugs.



XPert™ Balance Enclosures have containment-enhancing design features such as a patented perforated air foil and slotted baffle. With ample interior depth, these enclosures are ideal for precise weighing applications involving hazardous powders or fumes. XPert Enclosures may be ducted to the outside or to the FilterMate™ outfitted with HEPA, carbon or a combination of filters.



Protector Multi-Hazard Glove Boxes include filters to protect the product inside and to capture hazardous gases and particulates before exhausting the box to the outside. Protector Controlled Atmosphere Glove Boxes, sometimes called "dry boxes," maintain a leak-free environment so that experiments may be carried out in an inert moisture-free environment or under vacuum.



PuriCare™ Open Access Stations provide personnel, animal and environmental protection during small rodent cage changing operations. HEPA-filtered intake air protects animals from cross contamination. Room air drawn into grilles located on the work surfaces and HEPA-filtered exhaust air protect workers and the room environment from allergens. The PuriCare line consists of a variety of cage changing, special procedure and bedding disposal stations used by laboratory animal researchers.

In the laboratory, potable water is often not pure enough. Analytical researchers are commonly concerned with elements and compounds in the parts-per-billion range. Life science research is often very sensitive to contaminants, particularly heavy metals and dissolved organics. High performance liquid chromatography (HPLC) requires ultrapure water for calibration of detector baselines and elution of reverse phase columns.

Trace element analysis requires water which is free of the elements being examined. Labconco's WaterPro® Water Purification Systems produce pure water that meets these stringent standards.

Similarly, clean glassware is vitally important. However, due to the diversity of specialized shapes — including beakers, flasks, cylinders and tubes — standard washing technology will neither clean the glassware safely, nor

dry it adequately. Labconco washers are designed to accomplish both of these tasks with minimum use of time, labor and energy.



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Labconco takes tap water to a new level of purity and cleanliness. Our WaterPro Softener pre-treats tap water for use in our WaterPro RO Station or our SteamScrubber or FlaskScrubber. Our WaterPro PS Polishing Stations polish this RO-purified water to Type I purity level for a variety of laboratory uses. RO-purified water may be used as the final rinse in our glassware washers for contaminant-free glassware.



The SteamScrubber® and FlaskScrubber® Glassware Washers are engineered to achieve a dual objective: to deliver washing and drying suitable for analytical research techniques while providing the careful handling needed to keep laboratory glassware in good condition. The SteamScrubber is designed primarily for wide-mouthed glassware, such as beakers, while the FlaskScrubber is designed primarily for narrow-necked glassware, such as volumetric flasks.



Selection of a water purification system is based upon the types of contaminants (i.e., particulates, dissolved inorganics, dissolved organics, microorganisms and pyrogens) most commonly found in the available water supply as well as the primary applications. Labconco has designed specialized water purification systems for general chemistry, analytical and life science applications.

To give you the flexibility you need, Labconco offers a range of wall- and bench-mounted water purification systems as well as a mobile stand, with the added convenience of a handy dispensing gun.

Some laboratory procedures require working with a substance in a highly concentrated or dried form. Three of the most effective laboratory techniques include freeze drying, centrifugal concentration and evaporation.

In freeze drying, or *lyophilization*, water or some other solvent is removed from a frozen product by a process called sublimation. Sublimation occurs when a frozen liquid goes directly to the gaseous

state without passing through the liquid phase.

Evaporation is accomplished by applying heat to vaporize excess liquid, although great care must be taken to ensure that the heat does not interfere with the substance's biological and chemical structure and activities. To help accomplish this, mechanically-created vortex action is used to increase surface area for faster evaporation.

Similarly, centrifugal concentration involves spinning small, solvent-based samples to quickly reduce volumes. All three techniques rely on the use of vacuum to maximize the migration of solvent molecules from the samples, leaving the concentrated solutes behind.



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*Lyophilization and evaporation are two essential methods of preparing samples for further analysis. Labconco engineers designed our lyophilization and evaporation products to ensure that these essential tools offer safety and convenience.*



FreeZone® Benchtop Freeze Dry Systems are compact and come with collector capacities from 1 to 6 liters, ideal for smaller sample sizes and personal use. Labconco offers a full line of FreeZone Systems with capacities up to 18 liters as well as a broad range of drying accessories, pumps and glassware.



CentriVap® Concentrators use centrifugal force to eliminate bumping and foaming common when applying vacuum during evaporation. These products rapidly concentrate multiple biological samples and can process up to 148 tubes at once.



In environmental laboratories, RapidVap® N<sub>2</sub> Evaporation Systems use heat, vortex motion and nitrogen blow down to process multiple, large-volume samples — up to 450 milliliters. RapidVap N<sub>2</sub> Systems quickly reduce sample volumes to a few milliliters and then use the Cool-Zone™ insulating design to prevent them from going to complete dryness. For reducing multiple small biological or analytical samples, RapidVap Vacuum Evaporation Systems use vacuum, vortex motion and, if desired, heat.

In 1883, when Danish scientist Johan Kjeldahl introduced a new method of determining nitrogen content, it was a result of his research on ingredients used in beer making. Some 40 years later, as agricultural companies in the Midwest sought to improve their ability to use that same process, company founders Ralph Callaway and Phil Goldfisch developed Labconco's first Kjeldahl Digestion and Distillation Apparatus.

Other Kjeldahl-related products soon followed, including the Flask Carrier Cart designed to transport Kjeldahl Digestion Flasks. Labconco now manufactures 12 different carts and benches, each with specialized applications. All Labconco Carts and Benches carry an unconditional guarantee: free replacement if you're ever dissatisfied.

For over 75 years, Labconco has worked hand-in-hand with laboratory professionals across a broad range of studies to help design and develop the equipment they need to accomplish their job requirements more efficiently, more accurately, and most importantly, more safely, than ever before.



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*From the beginning, Labconco's premise has been to save our customers time. Convenience features are built into every product we offer. Our Kjeldahl Apparatus have evolved to meet the demand for faster, more automatic equipment now found in our Rapid Kjeldahl Systems. Our Laboratory Carts and Benches add portability to a multitude of laboratory applications. Our Vacuum Desiccator stores moisture-sensitive materials on the benchtop within easy reach of the user.*



The Vacuum Desiccator provides a cubic foot of moisture-free space for cooling, drying and storage of materials such as thin layer chromatography plates or halide salt cells for IR spectrophotometers and chemical standards.



Labconco manufactures three kinds of Kjeldahl Nitrogen Determination Apparatus: the Macro (Classical) Kjeldahl Apparatus, which handles up to 18 five-gram samples; Rapid Kjeldahl Systems, which handle up to 25 two-gram samples; and Micro Kjeldahl products, which were designed for 30 to 100 milliliter volumes.



Separate equipment for the determination of fat and crude fiber content are designed for use with AOAC methods. Crude Fiber Apparatus are used to measure insoluble fiber content in a variety, of food and feed samples. Goldfish Fat Extractors provide continuous extractions of fats and oils.

Several products mentioned earlier, including Labconco's Purifier Class II Cabinets and CentriVap Centrifugal Concentrators, have clinical and life science research applications. In addition, Labconco manufactures other laboratory products that appeal to these often-related markets.

The Labconco Blood Drawing Chair provides comfortable seating for the patient as well as ergonomic features that ensure ease and comfort

for the technician drawing blood.

Labconco engineers designed these chairs with guidance from medical technologists and phlebotomists.

Another clinical product, the Digital Chloridometer, aids in the diagnosis of cystic fibrosis.

For the life science market, Labconco offers the Gel Dryer, a companion product for gel electrophoresis, a highly sensitive separation method

used in protein and DNA research that involves the movement of charged molecules in an electrical field. The Gel Dryer prepares gels for subsequent analysis. DNA researchers use work stations such as the circulation-free Protector<sup>®</sup> PCR Enclosure or the HEPA-filtered Purifier<sup>®</sup> PCR Enclosure to perform polymerase chain reactions.



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struments for analysis, whether in the clinical or life science research market, require precise performance and Labconco products meet this need. The Digital Chloridometer gives up to 4-digit readings and the Auto Densi-Flow® Density Gradient Fractionator deposits or removes layers within 0.004 inch of the gradient surface. Other products, such as our Blood Drawing Chairs and Protector PCR Enclosures, provide appropriate environments to conduct procedures.



An F.D.A.-listed medical device, the Digital Chloridometer, is referenced in the NCCLS Sweating Testing method and is used in the diagnosis of cystic fibrosis. In addition to its clinical applications, the Digital Chloridometer may also be used to measure the sodium chloride content of food, waste water or environmental samples.



Fume Adsorbers and Protector® Work Stations are designed to contain dangerous solvent vapors in histology and pathology laboratories, either by filtering the fumes or exhausting them to the outside.



Polymerase chain reaction experiments advance genome nomenclature and disease research. The Purifier PCR Enclosure offers a controlled environment in which to perform PCR work. Class 100, HEPA-filtered air is constantly supplied down through the work area, minimizing the risk of cross contamination of the samples. The ultraviolet lamp provides a five minute exposure to deactivate contaminants between experiments.



The Auto Densi-Flow® Density Gradient Fractionator has a probe that senses the liquid surface and withdraws centrifuged sample layers without tube piercing. The instrument also fills tubes in layers without turbulence.

Visit [www.labconco.com](http://www.labconco.com) to request information on Labconco products.



Fume Hoods and Blowers



HEPA Filtered Safety Cabinets,  
Enclosures and Clean Benches



Glove Boxes



Laboratory Animal  
Research Enclosures



Water Purification Equipment



Glassware Washers



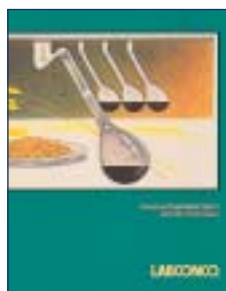
Freeze Dry Systems



Centrifugal Concentrators  
and Cold Traps



Multiple Sample Evaporation  
Systems



Agricultural Chemistry  
Products



Laboratory Carts  
and Benches



Vacuum Desiccator



Blood Drawing Chairs



Digital Chloridometers



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