



Food and Beverage



Food and Ingredients
Adding Value to Your Business



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These are the values Pall works to realize together with our customers in the food and ingredient manufacturing industry.

In an increasingly competitive and global environment, our customers benefit from well-selected and economically sound filtration, separation and purification solutions that help further their businesses.

Creating food products and ingredients that are safe, healthy, cost-effective and innovative is the challenge our customers face and we strive to meet.

With over 65 years of experience serving the food industry and multiple other markets, Pall offers the market-dedicated expertise, creativity, and portfolio to address simple to complex purification applications in the food industry.

Serving the Food and Ingredient Industry

On a daily basis, from over 70 locations around the globe, we serve the businesses that create agricultural commodities, ingredients, and value-added food and beverage products¹.

- Amino acids
- Organic acids
- Enzymes
- Yeast extract
- Other fermentation products
- Sweeteners
- Gelatin
- Flavors and seasonings
- Processed fruits and vegetables
- Hydrocolloids
- Processed foods
- Aseptic products
- Food plant utilities
- OEM equipment

¹For additional information about other major food and beverage markets served, please visit our website.

Find solutions to your purification needs anywhere around the globe.





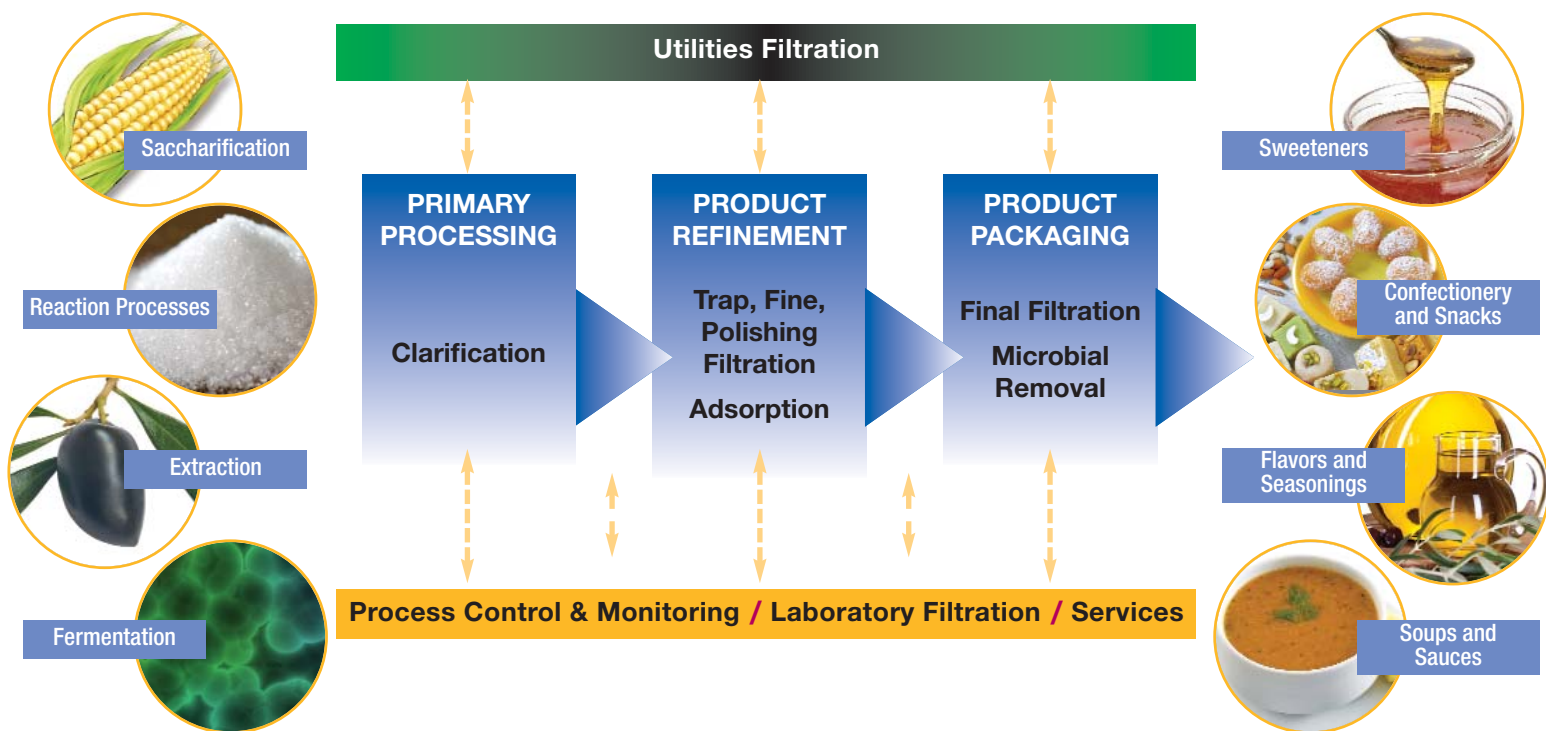
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Our Philosophy – Total Fluid ManagementSM

The cornerstone of our success is our Total Fluid Management (TFM) approach as it relates to filtration. TFM is the integration of properly selected filtration and separation equipment and services into a production process to yield the highest efficiency at the lowest cost of ownership.

Each application is part of a larger whole. By taking a holistic view of your process, and considering all the influencing factors which surround an application, we ensure that our solutions achieve your goals.



Our portfolio –
a wide array of integrated filtration and purification solutions to address your needs

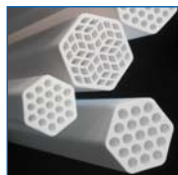
Your challenge –
transforming raw materials to food ingredients and processed foods

Our goal –
creating value at critical steps in your process

For an overview regarding filtration solutions for the food and ingredients industry, [click here](#).



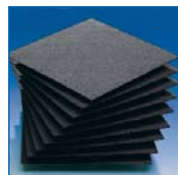
Microflow XL
Hollow Fiber
Systems



Membralox[®]
Ceramic
Membranes



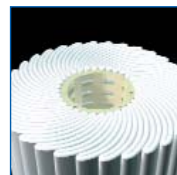
SUPRApak[™]
Modules



Carbon-
impregnated
Sheets



Porous Metal
Cartridges



Ultipleat[®] High
Flow Cartridges



Cartridges and
Capsules



Pall Aria[™] Systems



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Delivered Value for our Customers

In multiple applications around the globe, we have created numerous ways to achieve our customers' production goals and improve product quality successfully. By partnering with us, they have found solutions that have added value to their businesses.

Cost Savings

Properly selected filtration solutions enable our customers to minimize production costs without sacrificing product quality.

The least expensive solution is often not the least costly. By carefully analyzing all aspects of filtration cost of ownership, we demonstrate how to drive down costs per unit volume of fluid filtered.

- **Yeast extract, enzyme and amino acid clarification** — Eliminating the use of several thousand tons of diatomaceous earth per year with crossflow membrane technology, while achieving improved filtrate quality, higher product yield, waste reduction, labor, energy, and maintenance cost savings
- **Corn refining** — Positioned on river water upstream of an RO unit, a Pall Aria water treatment system is delivering 50% savings on RO membrane replacement every 3 years, a 78% reduction in CIP frequency of the RO membranes, a 20% reduction in sodium hypochlorite consumption, and a 50% savings in point of use disposable filter cost, as compared to a sand filter solution.
- **Polyols production** — 72% operating cost savings using SUPRApak technology, replacing classical sheet filtration
- **Collagen peptide polishing** — Increasing the length of production batch runs and filter life with repeatedly hot water sanitizable SUPRADisc™ modules
- **Flavor production** — Elimination or reduction of settling time for citrus flavors by liquid liquid coalescing to remove citrus oil traces from ethanol-based citrus flavors

Filtration Cost of Ownership

- Price
- Service Life
- Process Reliability
- Process Yield
- Labor
- Cleaning
- Maintenance
- Energy Consumption
- Waste Disposal

Brand Protection

Ensuring food safety and securing high, consistent product quality is critical to protecting our customers' brands.

- **Aseptic production** — Sterilizing filtration of air with integrity-testable membrane cartridges on aseptic tanks and packaging machines; sterile liquid ingredient filtration and sterile water generation
- **Direct steam injection** — Removal of unwanted debris from steam with porous metal filters
- **Maple syrup polishing** — Consistent quality improvement with high temperature-capable, robust trap filtration after sparkler filters
- **Meat and poultry industry** — Rapid detection based on GeneDisc® PCR technology for quick diagnosis of EHEC, pathogenic *E. coli* O157 and non-O157, *Salmonella spp.*, *Listeria spp.* and *Listeria monocytogenes*, prior to releasing meat and poultry shipments
- **Olive oil production** — Final product quality improvement by removing precipitates at cold temperatures with SUPRADisc modules
- **Sorbitol production** — Decolorization and deodorization of concentrated sorbitol prior to packaging with carbon-impregnated filter sheets





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Food Contact Compliance

Due to increasing food contact compliance requirements around the globe, Pall employs a rigorous program of achieving and maintaining compliance for all materials of construction in filters offered to the food industry. This program is an additional step towards safeguarding the health and well-being of consumers.

Food Contact Suitable

- Materials of Construction
- Traceability
- Labeling
- Documentation



Sustainable Production

Process water recycling and reuse, waste reduction, improvements in cleaning processes, improvements in workplace safety, and energy savings are all ways in which better management of resources can be achieved with filtration.

- **Table fruit production** — Recycling process wash water 24 hours/day year-round with a Pall Aria system, resulting in 80% water savings (160,000 m³/year), while achieving higher fruit quality for entry into new markets
- **High capacity water filtration** — Replacing standard cartridge filters with large diameter Ultipleat High Flow and Coreless filters, resulting in 30% savings on filtration costs and over 50% savings on filter waste
- **Enzyme production** — Closed systems with sheet-based SUPRApak and SUPRADisc modules limit personnel exposure, enhancing workplace safety
- **Dry soup mix production** — Meeting customer standards for CIP water, increasing CIP efficiency and minimizing risk of equipment contamination, with a variety of water treatment solutions
- **Tertiary wastewater effluent treatment** — Recycling water to boiler feed and cooling towers
- **Regenerable steam filters** — Cleanable porous metal steam filters allow many years of reliable operation and reuse

Within our own Pall manufacturing operations, we are achieving new ways of being a good steward of our environment and resources on a daily basis.



A Pall Aria system for process water recycling in table fruit production results in 80% water savings.





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Innovation

Some of the most inspiring challenges faced are those in which customers seek to add value to their products in order to access new markets. In these applications, we can partner with our customers to offer ideas and solutions that can generate new income streams.

- Improving filtrate quality enables customers to satisfy higher end use specifications
- Crossflow filtration techniques offer the possibility of adding value to retentate streams.
- Functional materials in unique configurations solve customer-specific requirements, such as in barrier and controlled atmosphere packaging, container caps and liners, and venting solutions in packaging and transport

Whether for proven solutions or challenging new applications, food manufacturers can count on expertise and collaboration from Pall.



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Pall Corporation has offices and plants throughout the world. For Pall representatives in your area, please go to www.pall.com/contact

Please contact Pall Corporation to verify that the product conforms to your national legislation and/or regional regulatory requirements for water and food contact use.

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