



Food and Beverage



Alcohol Free Beverages

**Your Challenges - Our Solutions**

# Alcohol Free Beverages

## Your Challenges - Our Solutions

### The Challenges

Precise separations are crucial to the quality, taste and color of soft drinks, bottled water, fruit juices and tea. Pall's filtration and separation technologies provide the most comprehensive scope of supply to meet the most diverse challenges:

- Food contact compliance
- Food safety
- Brand protection
- Environmental pressure
- Rising price of primary materials

Combining innovative solutions, process expertise, and a dedicated network of global specialists, Pall is helping drive global product consistency and customer profitability by protecting the integrity of the beverage brand, anywhere in the world.

**Pall Total Fluid Management (TFM)** is the integration of properly selected filtration and separation equipment and services into a production process designed to yield the highest efficiency at optimized cost. Pall's TFM program consists of a wide range of proprietary filtration products and techniques, advanced technologies, and specialized services to improve system operation, increase productivity and ensure brand protection with environmental awareness.

*Improve system operation,  
increase productivity and  
ensure brand protection with  
environmental awareness*



### Total Fluid Management

#### Creating Value

- Optimized process
- Total Fluid Management

#### Sustainability

- Reduced water consumption
- Reduced energy consumption
- Less chemical consumption
- Minimized costs and waste volume

#### Cost Saving

- Reduced filtration costs
- Reduced product losses
- Solutions for reduced downtime
- Smart filter sizing

#### Brand Protection

- Food contact compliance products
- Quality assurance support

AFB Challenges

# Alcohol Free Beverages

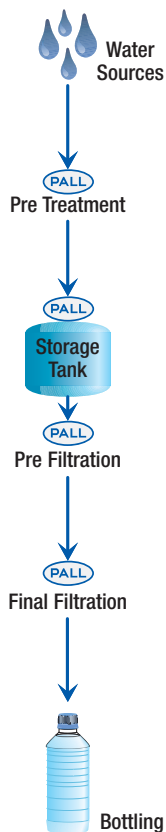
## Your Challenges - Our Solutions



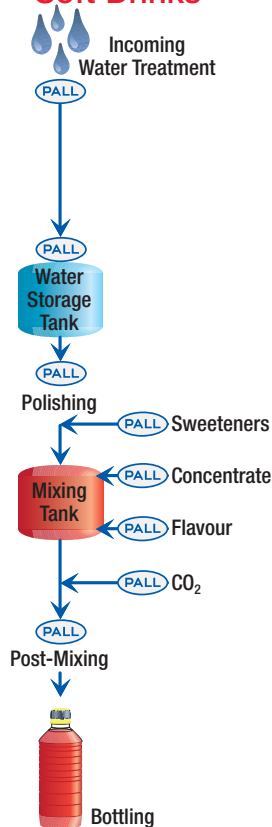
### Creating Value

Pall reliable solutions help customers optimize their filtration process by controlling time, costs and resources. This allows more efficient and stable production capacity and impact time to market.

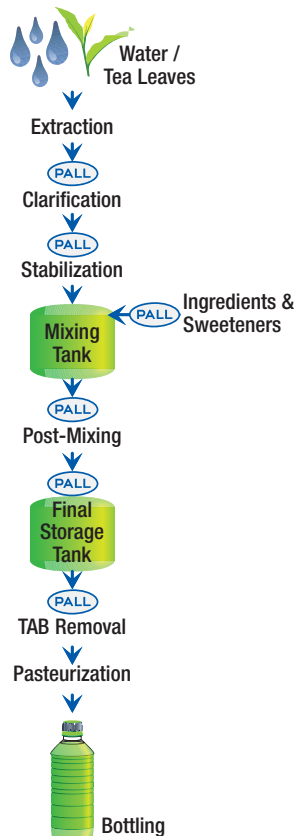
#### Bottled Water



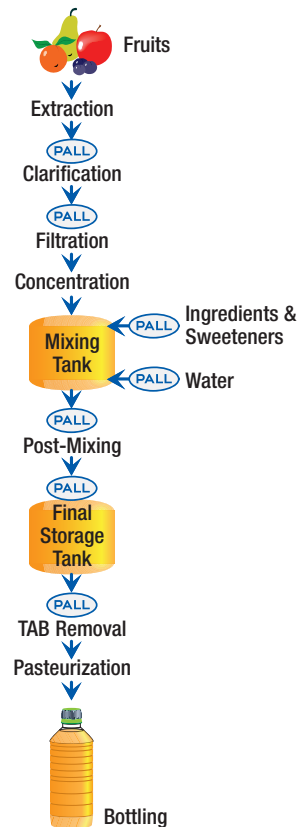
#### Carbonated Soft Drinks



#### Ready to Drink Tea



#### Fruit Juice



**PALL** Pall filtration solution available

Total Fluid Management for Process Control and Product Protection, answers your challenges:

#### Process Water Treatment:

Removal of particles and microbial from different water sources, recycle and reuse solutions.

#### Process Fluid Control:

Sugar syrup clarification and decolorization, TAB spores removal, stabilization of green tea, clarification of tea and fruit juices, filtration of concentrate, flavour and diverse ingredients.

#### Air/Gas/Steam:

From storage tank protection to gas for carbonation.

#### Filling Area:

Filtration of air, water and steam for bottle blowing to aseptic packaging.

#### Services:

System maintenance, process audits and consultancy, integrity testing, training seminars.

**Pall products are available for all your fluid management requirements**

Creating Value





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## Your Challenges - Our Solutions

### Sustainability

Pall technologies are helping customers reduce their environmental footprints and keep their production levels high. Filters that maintain optimal fluid quality and have a long service result in decreased purchasing requirements, less fluids and filters for disposal and reduced operator handling.

The right solution enables customers to spend more time producing their high-quality products and less time maintaining equipment. Our technical solutions also help companies to meet or exceed extremely stringent emissions requirements, enabling a greener, safer future; proving that protecting the environment and preserving profits are not mutually exclusive goals.

*Reducing environmental footprints, keeping production levels high*



Pall has been named a "Top Green Company" by Newsweek Magazine: 47th among America's 500 largest companies and 2nd in the Industrial Goods sector.

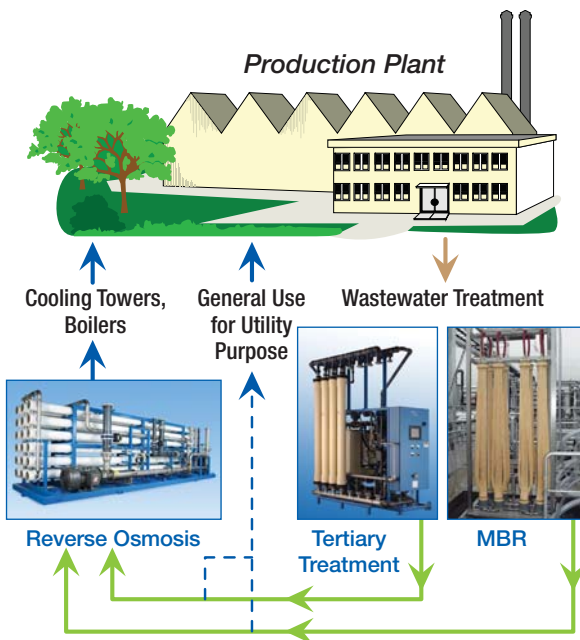
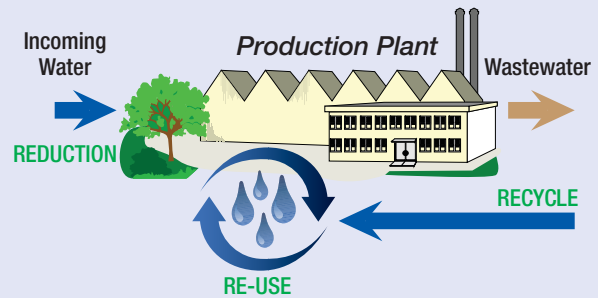
### Managing Natural Resources

To better support water management programs, Pall offer innovative solutions to optimize water usage, reduce the water footprint and energy consumption, and achieve overall cost improvements.

### Water Footprint Reduction

- Up to 98 % reduction in water consumption
- Up to 55 % lower energy consumption
- Typically over 50 % operational costs potential improvement compared to conventional treatment

**Applications:** sand filter replacement for water reduction, filter backwash recovery, condensates water and end of pipe recovery for water re-use.



### Wastewater Treatment

Purify wastewater for discharge or reuse with automated aerobic biological treatment and submersible membranes (MBR).

Provide tertiary effluent filtration with microfiltration downstream of existing biological treatment (Pall Aria™ LT system).

**Applications:** recycling water for cooling tower and boiler feed.

Pall Integrated MF/RO system the Pall AriaFB membrane system has been specifically developed to satisfy the water treatment plant manager requirements in a single step. Stainless steel frame, no filtrate tank, pressure hold test



Sustainability

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## Your Challenges - Our Solutions



### Cost Saving

Process downtime, pre-treatment and unexpected contamination challenges can result in added time and costs for filter maintenance. These can be minimized by applying high performance, long service life filters that reduce operating costs and enable a more efficient and stable production.

#### SUPRAPak™ filters

Cost-effective particulate removal is achieved using SUPRAPak filters, the modular alternative to traditional filter sheets.

- Up to 90 % reduction in handling costs
- Up to 65 % reduction in product losses
- Increased process up times
- Closed system
- Easy cleaning
- No drip losses, reduced hold up volume

**Typical applications:** sugar syrup, fruit juice and tea clarification.

*By monitoring filtration costs and using smart filter sizing, you control and optimize your filtration costs per m<sup>3</sup>*



#### SUPRADisc™ II modules

For turbidity improvement and microbial control before bottling

Less frequent maintenance of this high capacity filter (in comparison to filter sheets) helps reduce cleaning costs by using less chemicals, water and energy. Can typically offer:

- 65 - 72 % reduced operating costs compared to filter sheet technology
- 95 % less product losses due to smaller hold-up volumes
- 20 - 50 % reduced filtration costs
- Back wash for increased life time

**Typical applications:** fruit juice and tea post clarification, TAB spores removal.

#### Ultipleat® High Flow and Profile® Coreless filter cartridges

Large diameter filters provide high throughput and cost filtration improvement with typically:

- > 30 % savings on filtration costs
- > 50 % savings on filter waste
- Reduced costs per m<sup>3</sup>

**Typical applications:** particulate removal from rinse water, trap filtration of sand and/or carbon particles, and for CAS010 media reduction of *Cryptosporidium* oocysts from water.



Cost Saving

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## Your Challenges - Our Solutions

### Brand Protection

Pall can help you optimize the performance of your equipment by improving fluid contamination control. Our goal is to find solutions to protect your brand.

### Microbial Safety



#### Pall® Fuente cartridges family

A range of cartridges specifically designed to meet bottled water industry requirements

- Up to 23 % filtration costs improvement
- Increased product control before bottling
- Increased performance: disinfection, hot water sanitization, steam sterilization
- Comprehensive documentation to support quality assurance program

### Thermo Acidophilic Bacteria Spores Protection

#### Oenopure™ II cartridges

- Specific claims for spores removal
- Laid Over Pleat technology for increased mechanical strength
- Integrity testable solution



### Storage Tank Protection



#### Emflon® PFR cartridges

- 100 % hydrophobic media
- Prevention of microbial contamination risks

*Integrity testing equipment safeguards the process for product control*

### Product Quality Assurance

#### Palltronic® Compact Star - Integrity Test Device

- Batch record reports
- Confirms performance and proper installation
- Ensures safety and quality of final product
- Fully automatic, reliable and reproducible results



### Food Contact Compliance

- Products available that meet various food contact regulations
- Ensures compliant manufacturing standards
- Documentation for quality management and safety auditing systems
- Declaration of compliance certification available at [www.pall.com/FoodandBev](http://www.pall.com/FoodandBev)

Compliant



Brand Protection



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## Your Challenges - Our Solutions



### Pall Global Services

Your operating costs continue to rise as the competition increases and environmental regulations become more stringent. To control expenses and revenues, you need to ensure that your systems operate reliably at peak efficiency.

Whether it's prevention or repair, Pall Corporation provides an effective, long-term plan, offering proven strategies for all your production challenges. Our system services can be a critical tool helping you meet regulatory requirements, increase output, reduce costs and make more efficient use of your time - all of which will ultimately improve your profitability.



Services

### Wherever you are and whatever you need

Our solutions are designed to help you. Our team of industry-respected and dedicated staff scientists, engineers, technical support are trained to evaluate your processes and identify what you need to achieve your organizational goals. Working directly with you, we conduct the research necessary to create a roadmap that will enable you to make your processes more cost-effective and efficient.

### Customer Benefits

- Optimization of systems and processes
- Implementation of best practices
- Improved product quality
- Minimized waste
- Identification and correction of problems
- Ensured compliance of regulations and standards
- Development of a world-class workforce

Service	Value Added
Process and Filter Application Development	Defines customer solutions through bench scale and pilot test programs, screening services and filterability studies
Water Appraisal	Recommends methods and technology to reduce, reuse and recycle water, and quantifies the savings that can be achieved
Training Seminars	Provides information that can assist to improve manufacturing reliability, regulate workplace practices and help maintain compliance within regional and local legislation
Troubleshooting and Consultancy	Maps the route to contamination control and cost savings by assisting plant managers in identifying specific quality and cost issues through process analysis, contamination analysis and troubleshooting services
System Maintenance	Helps prevent unscheduled downtime and associated costs, and promote long filtration system service life

***Pall Technical Services, your key partner for process improvement***



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## Pall, your choice for Total Fluid Management



### About Pall Corporation

Pall Corporation is the largest and most diverse filtration, separation, and purification company in the world. Pall serves the food and beverage industries with advanced membrane filtration technology and systems engineered for reliability and cost-effectiveness.

Easy to install and simple to use, our systems satisfy a wide range of filtration requirements. Our Total Fluid Management approach offers customers solutions to address the needs of an entire process, encompassing filtration products, services, systems and training.



Pall Corporation

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ENABLING A  
GREENER  
FUTURE<sup>SM</sup>

#### Visit us on the Web at [www.pall.com/foodandbev](http://www.pall.com/foodandbev)

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

Because of technological developments related to the products, systems, and/or services described herein, the data and procedures are subject to change without notice. Please consult your Pall representative or visit [www.pall.com](http://www.pall.com) to verify that this information remains valid. Products in this document may be covered by one or more of the following patent numbers: EP 667,800; EP 982,061; EP 1,380,331; EP 1 656 193; US 5,543,047; US 5,690,765; US 5,725,784; US 6,113,784; US 7,083,564; US 7,318,800.

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