



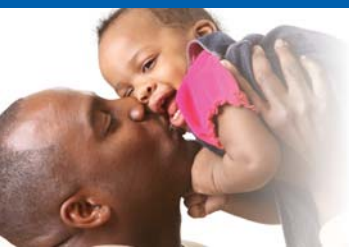
Food and Beverage



Filtration Essentials for Infant Formula

Filtration. Separation. Solution.SM

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Sensitive Consumer Protection

Whom would you trust with your reputation ?



Introduction

Infant food and formula manufacturers require essential process steps to prevent and remove microbial contamination while maintaining high nutritional product quality.

Pall Food and Beverage can provide a wide range of filtration and separation solutions to help achieve your product and process safety needs.

Contamination control

Although powdered infant formula undergoes intensive heat treatment during processing to deactivate bacteria, some pathogens demonstrate exceptional thermal resistance and long survival in formula powders.

Prevention measures based on reinforced heat treatments can be employed but may have a significant impact on nutritional value. The higher the heat treatment, the higher the nutrient loss.

Pall can provide filtration solutions to assist in meeting both product safety and maintained nutritional value requirements.

Filtration solutions based on the Pall Total Fluid Management™ (TFM) program provide reliable barriers built into the process, preventing pathogen entry at points where a product might be exposed to foreign matter, microbiological contaminants or process survivors. (Critical Control Points or CCP)

Process and product protection

A multiple physical barrier strategy, based on durable, reliable membrane filters, removes unwanted contaminants and help preserve the nutritional quality of the product by limiting the number of high temperature processes and reduces their cumulative impact.

The TFM program also targets secondary fluids, such as water, steam and gas utilities. Inadequate quality of such fluids may initiate equipment failure and create a potential contaminant entry path.

The Pall TFM program is specifically designed to help address food safety concerns and draws from Pall's many years of filtration and separation experience.

Food contact compliant filter materials

Strict and controlled materials selection, stringent manufacturing procedures, and extensive quality assurance are distinct characteristics of the Pall Food and Beverage product portfolio. As there are no globally harmonized regulations for food contact compliance, Pall can help you in filtration and separation product and process selection so as to support your local Food and Water requirements.

Brand Protection

Reliability in process

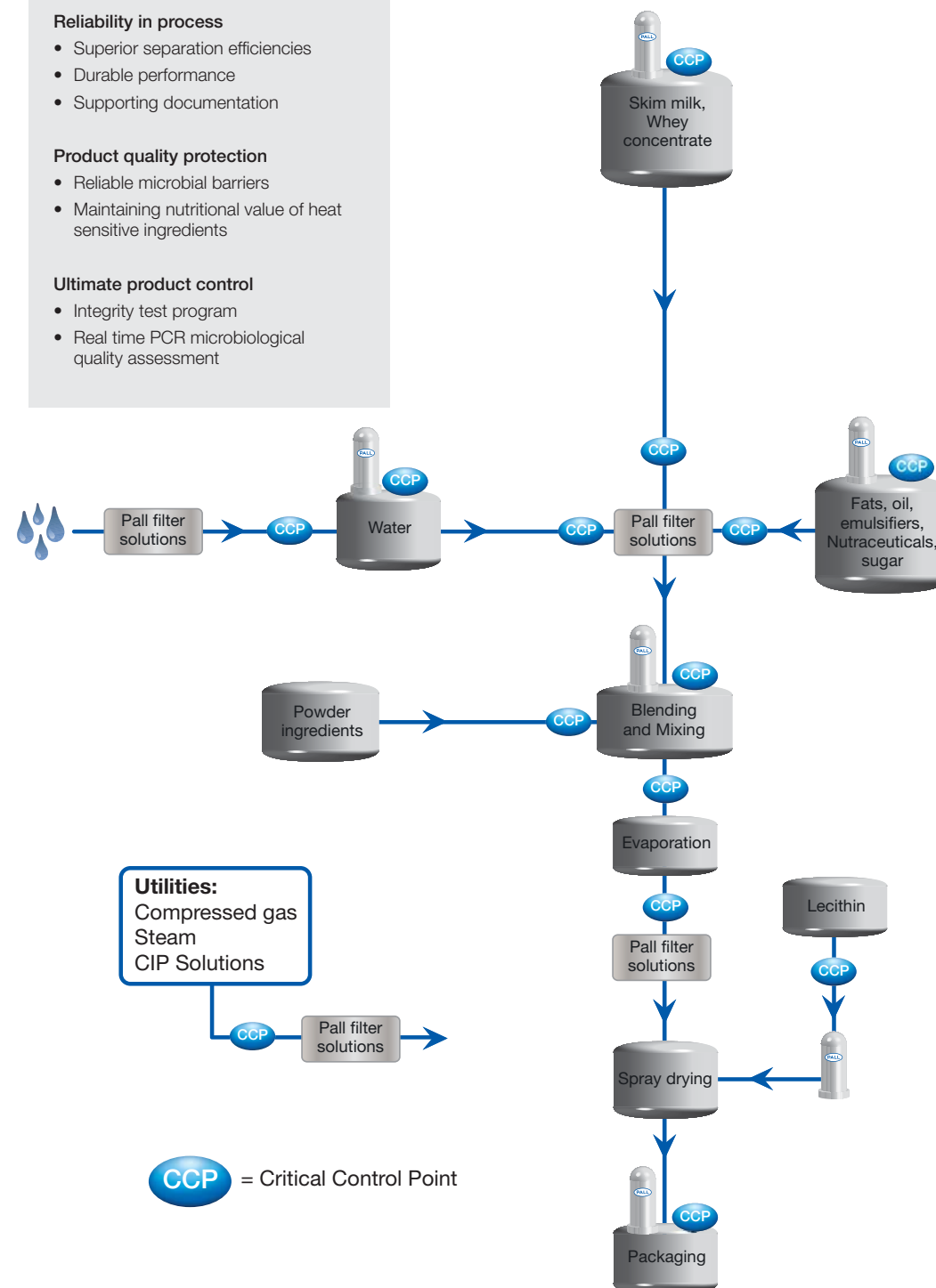
- Superior separation efficiencies
- Durable performance
- Supporting documentation

Product quality protection

- Reliable microbial barriers
- Maintaining nutritional value of heat sensitive ingredients

Ultimate product control

- Integrity test program
- Real time PCR microbiological quality assessment



Pure ingredients

Pall durable and highly reliable membrane filter cartridges are instrumental in the ingredients area, providing efficient protection with

- Effective microbial removal
- Ultra-low protein binding characteristics
- Broad chemical and temperature resistance
- Ability to withstand steam sterilization for long filter service life

Pall membrane and chromatography purification solutions are also available for microfiltration or creating customized fractions in milk and whey processing.



High quality process water

Pall technology platforms provide cost-effective solutions for the various water requirements of the dairy plant.

- State-of-the-art Pall Aria™ membrane systems for consistent incoming water quality
- Large capacity filters for environmentally friendly process and product protection
- Sterilizing grade membrane filters for point-of-use filtration



High quality steam

Pall steam filters efficiently provide culinary steam for equipment and product sterilization

- High efficiency particle control
- Construction designed for reliability over longer operating life



Reliable critical air and venting

Pall Emflon® PFR-W membrane filters provide reliable barriers to airborne contamination

- Designed for critical environments
- Qualified for microbial performance to ensure high efficiency in industrial environments
- Backed by a detailed validation guide to document filter performance



Critical process control

The combination of adequate sterilization procedures combined with a suitable integrity testing program is instrumental in ensuring the reliability of critical gas or liquid filtration applications. Pall Palltronic® Flowstar instruments, designed with direct flow measurement technology provide user-friendly integrity testing of both gas and liquid membrane filters

- Simple, fast, accurate
- Designed for production environments
- Monitor all membrane filters at the dairy plant



Ultimate product monitoring - real time PCR technology

The product protection program is now completed by Pall Genedisc® system revolutionary microbiological detection equipment. Robust GeneDisc Real Time PCR technology combines high sensitivity, simple handling and low cost, giving a clear advantage compared to standard PCR technologies.





Filtration Essentials for Infant Formula

Application

	Clarification	Particle Removal	Microorganisms Removal	Customized separation processes
Venting		•	•	
Air and gas		•	•	
Steam		•		
Water	•	•	•	
Milk	•	•	•	•
Whey proteins	•		•	•
Milk / whey fractions			•	•
Ingredients	•		•	

Worldwide service

Pall's international team of dairy and food filtration and separation specialists work in partnership with customers at the local level. Our customers have access to Pall's global network of scientists and engineers, providing filtration expertise and rapid response on process safety needs.

Service

Integrity Test Program

Process and Filter Media Development

Process Audits and Consultancy

System Maintenance

Training Seminars

Water Appraisal

Value Added

Provides quality documentation and filter system performance verification

Defines customer solutions through bench scale and pilot test programs, screening services and filterability studies

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

Helps prevent unscheduled downtime and associated costs, and promote long filtration system service life

Provide information that can assist in improving to improve manufacturing reliability, regulate workplace practices and help maintain compliance within regional and local legislation

Recommends methods and technology to reduce, reuse and recycle water, and quantifies the savings that can be achieved



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

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