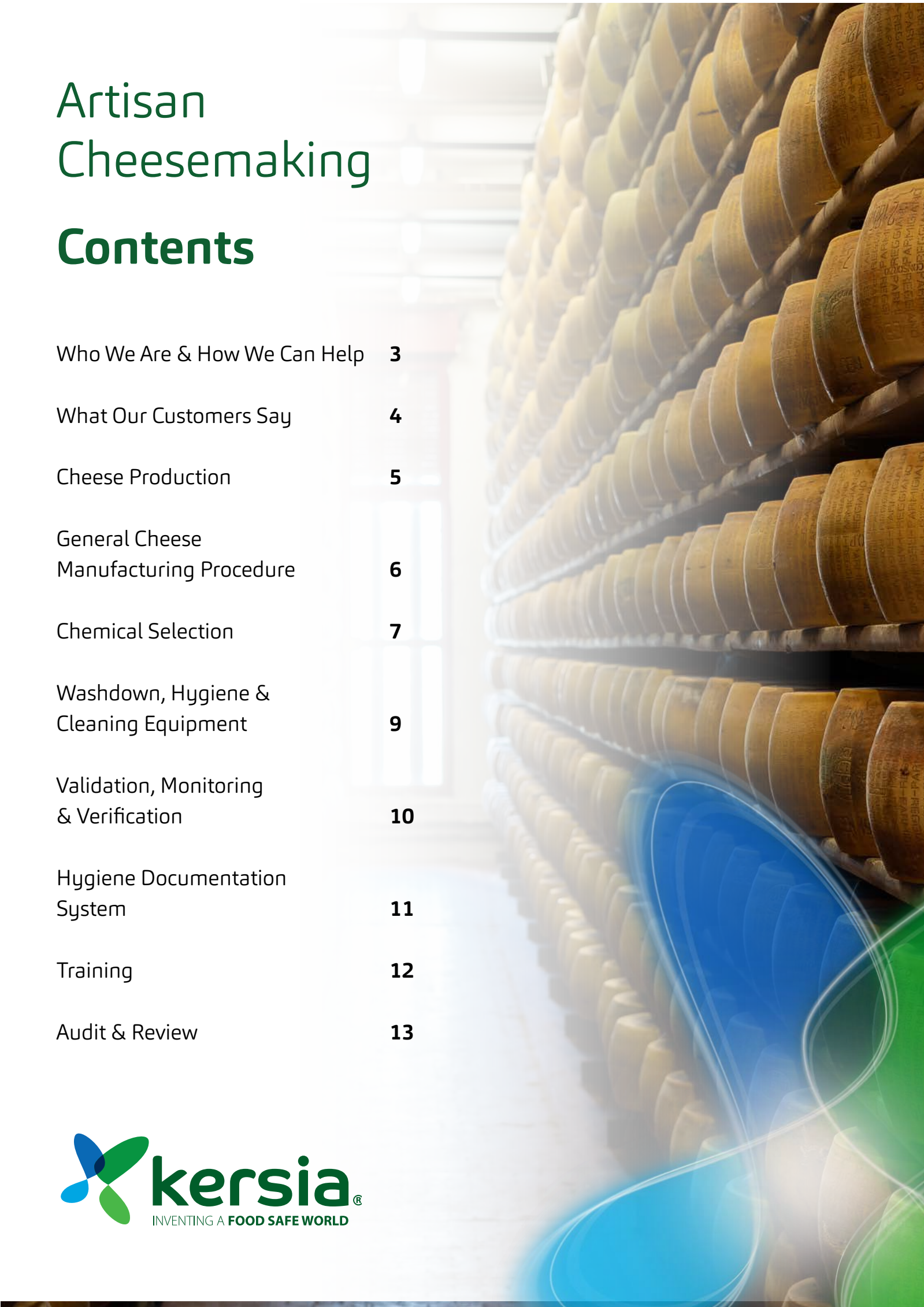
kersia®
INVENTING A **FOOD SAFE WORLD**

Artisan Cheesemaking

Artisan Cheesemaking

Contents



kersia®
INVENTING A **FOOD SAFE WORLD**

Who We Are & How We Can Help

TRIED • TESTED • TRUSTED

Part of the global Kersia Group, Kersia UK provides market-leading hygiene products, services and technical support solutions for the farm, dairy, food and beverage sectors in the UK & Ireland.

It is important that any hygiene support company has the breadth of technical knowledge and industry expertise to understand your business and your hygiene challenges and Kersia continues to deliver hygiene solutions through technology and an unparalleled commitment to service levels.

Our support is built around sharing best practice and assisting our customers in meeting legislation requirements and standards, such as British Retail Consortium Global Standard for Food Safety v9, Safe and Local Supplier Approval plus Cheese Audit Standard Issue 6, and all of the UK & Irish retailer standards.

The Kersia team work closely with businesses to advise on all aspects of hygiene, including the selection and application of cleaning & disinfection products, dosing control, hazard management, cleaning advice & optimisation, hygiene documentation systems, training, audit and review. We also work alongside key strategic partners to the dairy, food and beverage sectors, including the Society of Dairy Technology, Campden BRI, European Hygienic Engineering Design Group, Society of Food Hygiene & Technology and Reaseheath College.

By working with customers and stakeholders in the sectors we operate in, Kersia build long-lasting relationships, deliver tailor made cleaning solutions and optimised results. The advice we offer has a track record of making a material difference to our customer's hygiene operations.

The company philosophy of "do what you say you are going to do" and the values of hard work, innovation, trust and professionalism underpin every aspect of our business.

The video shown on the link below provides a real life example of how we consistently deliver high value support to our dairy customers.

www.kersia.uk

www.kersia.uk/divisions/dairy-processing

What Our Customers Say

"From day one Kersia have provided a professional and reliable service to our dairy processing facility. We have been impressed not only with the quality of the products, but the level of support provided and timely response to queries. We have particularly appreciated receiving data sheets for ordered chemicals prior to their arrival on site, assisting us in ensuring both the safety of our staff and compliance with legal requirements"

Alan Baxter, Managing Director, Rowan Glen Ltd.

"The relationship we have with Kersia UK is really open, they problem solve for us and when needed, they put people in on the ground. They are experts in things we are not and when the chips are down its good to have someone who will have your back. Kersia UK have been our incumbent for many years as we don't like to change things that work."

Claire Langford, Site Technical Manager, Abergavenny Fine Foods

"We have partnered with Kersia for a number of years now and their technical knowledge and advice has been invaluable, as well as easy to understand and practical to implement within our dairy. They are always on hand to provide help and support and have an understanding of our business and process which gives us confidence knowing that we are managing our food safety and hygiene to the highest standards."

Paula Smithson, Technical Consultant, Craigs Farm Dairy

"The support that Kersia has shown Woodlands Dairy over the years has been excellent. Since I joined Woodlands Dairy 3 years ago, we have fully reviewed all the cleaning chemicals, cleaning procedures and practices. Their expert advice and recommendations have improved the already high standards of hygiene on site. The Introduction to Cleaning and Chemical Safety Training has also helped facilitate our small team's knowledge and understanding of the how, what, and why we do things the way we do regarding hygiene. If we ever have a hygiene issue, question, or require support I can depend on the Kersia team. Long may our successful relationship continue."

Melissa Mintern-Fountain, Technical Manager, Woodlands Dairy

Cheese Production

Cheese can be made using pasteurised or raw milk, the latter imparting different flavours and texture characteristics to the finished cheese.

For some cheese varieties, raw milk is given a mild heat treatment (below pasteurisation) prior to cheese making to destroy some of the spoilage organisms and provide better conditions for the cheese cultures.

Cheese can be broadly categorised as acid or rennet cheese, and natural or processed cheese. Acid cheeses are made by adding acid to the milk to cause the proteins to coagulate.

Fresh cheeses, such as cream cheese or queso fresco, are made by direct acidification.

Most types of cheese, such as cheddar or Swiss, use rennet (an enzyme) in addition to the starter cultures to coagulate the milk.

The term 'natural cheese' is an industry term referring to cheese that is made directly from milk. Processed cheese is made using natural cheese plus other ingredients that are cooked together to change the textural and/or melting properties and increase shelf life.

The main ingredient in cheese is milk, usually from a cow, goat, sheep, water buffalo or a blend of these milks.

The type of coagulant used depends on the type of cheese desired. For acidic cheese, an acid source such as acetic acid (the acid in vinegar) or glucono delta-lactone (a mild food acid) is used.

For rennet cheeses, calf rennet or, more commonly, a rennet produced through microbial bioprocessing is used.

Calcium chloride is sometimes added to the cheese to improve the coagulation properties of the milk.

Flavourings may be added depending on the cheese. Some common ingredients include herbs, spices, hot and sweet peppers, horseradish, and port wine.

Cultures for cheese making are called lactic acid bacteria (LAB) because their primary source of energy is the lactose in milk and their primary metabolic product is lactic acid.

There is a wide variety of bacterial cultures available that provide distinct flavour and textural characteristics to cheese.

Starter cultures are used early in the cheese making process to assist with coagulation by lowering the pH prior to rennet addition. The metabolism of the starter cultures contribute desirable flavour compounds, and help prevent the growth of spoilage organisms and pathogens.

Adjunct cultures are used to provide or enhance the characteristic flavours and textures of cheese and yeasts and moulds are used in some cheeses to provide the characteristic colours and flavours of some cheese varieties.

General Cheese Manufacturing Procedure

The sequence of processing steps, temperatures, times, target pH for various steps, the use of salting or brining, block formation and aging, vary considerably between cheese types. The procedure below provides a very general outline of cheddar cheese making steps.

1. Standardise Milk
Milk is often standardised before cheese making to optimise the protein to fat ratio to make a good quality cheese with a high yield.

2. Pasteurise/Heat Treat Milk
Depending on the desired cheese, milk may be pasteurised or mildly heat-treated to reduce spoilage organism numbers and improve the environment for the starter cultures to grow.

3. Cool Milk
Milk is cooled after pasteurisation or heat treatment to 32°C to bring it to the temperature needed for the starter bacteria to grow. If raw milk is used the milk must be heated to 32°C.

4. Inoculate with Starter & Non-Starter Bacteria and Ripen
The starter cultures and any non-starter adjunct bacteria are added to the milk and held at 32°C for 30 minutes to ripen. The ripening step allows the bacteria to grow and begin fermentation, which lowers the pH and develops the flavour of the cheese.

5. Add Rennet & Form Curd
The rennet is the enzyme that acts on the milk proteins to form the curd. After the rennet is added, the curd is not disturbed for approx. 30 minutes, so a firm coagulum forms.

6. Cut Curd & Heat
Curd is allowed to ferment until it reaches pH 6.4. The curd is then cut with cheese knives into small pieces and heated to 38°C. The heating step helps to separate whey from curd.

7. Drain Whey
The whey is drained from the vat and the curd forms a mat.

8. Texture Curd
Curd mats are cut into sections and piled on top of each other and flipped periodically. This helps to expel more whey, allows the fermentation to continue until a pH of 5.1 to 5.5 is reached, and allows the mats to "knit" together to form a tighter matted structure. The curd mats are then milled (cut) into smaller pieces.

9. Dry Salt or Brine
The smaller, milled curd pieces are put back in the vat and salted by sprinkling dry salt on the curd and mixing.

10. Form Cheese into Blocks
Salted curd pieces are placed in cheese hoops and pressed into blocks to form cheese.

11. Store & Age
Cheese is stored in coolers until the desired age is reached.

12. Package
Cheese may be cut and packaged into blocks or it may be waxed.

Chemical Selection

We have an extensive range of products to suit your soiling challenges, microbiological hazards, water hardness and cleaning methods. Those shown below are our most popular products within the artisan cheesemaking sector, although we do have additional options for specific hygiene tasks.

Product	Application	Type	Use Rate v/v	CIP	Foam or Manual	Disinfection	Overview
Caustak 30	Raw Milk CIP Pasteuriser	Caustic	2% - 4%	✓			Low foam, use in recirculation applications. Freezing point ~ 5°C. 1% v/v = 0.4% w/v NaOH
Causdeta 25	Pasteuriser Enclosed Vats	Caustic	1% - 4%	✓			Low foam, use in recirculation applications. Suitable for removing soils with a high mineral content. Ideal for very hard water conditions. Freezing point -10°C. 1% v/v = 0.32% w/v NaOH
Deptal G	Raw Milk CIP	Chlorinated Caustic	1% - 3%	✓			Low foam, use in recirculation and soak applications at lower temperatures.
Nipac B	Raw Milk CIP Pasteuriser	Nitric Acid	1% - 2%	✓			Low foam, use in recirculation and soak applications to remove mineral scale and protein build up.
Perbac	Raw Milk CIP Pasteuriser	Peracetic Acid	0.1% - 1%	✓		✓	Conforms to EN13697, EN1276 and EN1650 standards. 1% v/v = 550 ppm active PAA
SER	Enclosed Vats Moulds & Presses	Phosphoric Acid	0.5% - 2%	✓	✓		Low foam, use in recirculation and soak applications to remove mineral scale and protein build up.
Sodium Hypochlorite	Enclosed Vats Drains & Floors	Chlorinated Disinfectant	0.1% - 1%			✓	Effective against a wide spectrum of microorganisms. Removes staining, flavouring and odours. 1% v/v = 1800ppm available chlorine
Chlorfoam Plus	Maturation Open Vats Environmental	Chlorinated Alkaline	2% - 5%		✓		Applied as foam but can be utilised for manual cleaning of surfaces. Suitable for removing fats and protein and also brightening stainless steel. 5% v/v solution = 0.39% w/v NaOH & 2500ppm available chlorine
Maxifoam Acid	Environmental	Phosphoric Acid	2% - 5%		✓		Applied as foam but can be utilised for manual cleaning of surfaces. Designed for the removal of mineral scale and protein build up, as well as certain staining.
Tribac	Environmental	Triamine Disinfectant	1% - 2%			✓	Conforms to EN1276, EN13697 and EN1650 standards and Triangle Contact Taint Test @ 2% (based on BS ISO 4120:2007) and is a non-tainting, QAC free disinfectant.
Depta DWR	Packaging Equipment Light Cleaning Tasks	Alcohol Disinfectant	Neat			✓	Ready to use terminal disinfectant. Conforms to EN1276, EN13697 and EN16615 and EN1650 standards.
Active Performance Wipes	Packaging Equipment Light Cleaning Tasks	Disinfectant Wipe	As Supplied			✓	Wipe impregnated with Active solution. Active conforms to EN1276, EN1650 and EN13697 standards and Triangle Contact Taint Test @ 2% (based on BS ISO 4120:2007) and is regarded as non-tainting. Alcohol and QAC free.
M8 Hand Mousse	Washing of Hands	Hand Soap	Neat	-	-	-	Foaming antimicrobial hand soap. Conforms to EN1499 and EN1276 standards.
Handsan	Disinfecting of Hands	Hand Sanitiser	Neat	-	-	-	Non-alcohol and perfume free hand sanitiser. Conforms to EN1500 and EN14476 for enveloped viruses.

Washdown, Hygiene & Cleaning Equipment

The storage, transfer, dosing, application and rinsing of detergents and disinfectants should be carried out in a controlled and defined manner.

A range of equipment is available from Kersia to allow all of these processes to be carried out safely, efficiently, effectively, ensure that the environment is protected and meet requirements laid down by various standards and particular clauses, such as BRC v9, clause 4.9.1 Chemical Control.

Kersia UK has supplied dispense and application systems to the dairy, food, beverage, food service and facility sectors for over 40 years. Projects have been implemented in multiple locations across the UK and Ireland and have ranged in size from small local dispense systems to integrated storage, dosing and application systems fitted within large production facilities.

At Kersia, we fully understand the hygiene and commercial pressures facing businesses and our team of engineering experts will advise on how best to optimise existing systems as well as providing information on turnkey solutions.

Our in-house team of qualified Service Engineers provide expertise and support throughout the UK and Ireland for storage, transfer, dosing, application and rinsing equipment. In addition to the routine planned service visits, they also provide a speedy response to breakdowns as well as an advisory and investigative service.

We pride ourselves on delivering advice on best hygiene practices and helping our customers meet any standards they work to. For example, in the Safe and Local Supplier Approval plus Cheese Audit Standard, clause 1.3.6 states:
"Hoses used for cleaning cheesemaking equipment and premises should be appropriately designed and used in a manner that minimises use of aerosols and the potential for spreading microbiological contamination."

Our knowledge, support and extensive range of rinsing equipment helps our customers meet this specific clause.

To complete the whole engineering solution and achieve the desired standards of hygiene and health & safety requirements, we also supply a range of cleaning and disinfection equipment, which has been selected for quality, reliability and value for money.

Information about Kersia's equipment portfolio can be found on our website: **www.kersia.uk/shop/washdown-hygiene-and-cleaning-equipment/**

Validation Monitoring & Verification

Hygiene tasks are required to control microbiological and allergenic hazards and require validation to demonstrate that they are fit for purpose. Validation of cleaning and disinfection processes are a requirement of all food safety standards.

Such controls also need frequent monitoring and verification to demonstrate their ongoing effectiveness.

In addition, other hygiene tasks, such as cleaning to control the cross contamination of food materials between product runs, or hand hygiene procedures, require more routine monitoring and verification, often to a less sensitive level.

We aim to ensure our customers are provided with effective and reliable test kits and equipment for the validation, verification and ongoing monitoring of cleaning tasks, to ensure acceptable levels of performance are achieved.

This helps them to meet and exceed all of the validation, monitoring and verification requirements laid out in the various standards they work to, such as British Retail Consortium Global Standard for Food Safety v9, Safe and Local Supplier Approval plus Cheese Audit Standard Issue 6, and all of the UK & IE retailer standards.

The choice of test will depend on the hazard that is being controlled (microbiological, physical, allergen, chemical) and the level of sensitivity required.

The test kits and equipment range also includes everything from inspection torches and cameras to rapid surface monitoring test kits and temperature and conductivity monitoring equipment.

Information about our full range of validation, monitoring and verification equipment can be found on our website:
www.kersia.uk/shop/test-kits-and-inspection-equipment/

Hygiene Documentation System

Legislation, retailer standards and codes of practice require food and beverage businesses to provide the cleaning instructions for all equipment and surfaces on site, including a system of control to show cleaning has been carried out according to the correct method.

For example, clause 1.3.2 of the Safe and Local Supplier Approval plus Cheese Audit Standard Issue 6, states:
"Documented cleaning schedules, procedures and records shall be in place for the building, services, plant and all equipment whether direct or indirect food contact."

We have our own unique system that is used for the creation, editing, updating and management of this documentation, Gateway.

Gateway is a web based system that provides our customers and Kersia personnel with quick access for easy creation and amending of cleaning procedures and associated documentation.

The system allows users to add photos, cleaning frequencies, strip down procedures, key inspection points, chemicals, PPE and cleaning tools.

Gateway and our cleaning procedure format is universally recognised as being the best in class. Gateway is closely supported by our team of Hygiene Technologists who help build your cleaning procedure system within Gateway and provide training on how to use it.

For more details, please visit our website:
www.kersia.uk/divisions/dairy-processing/support/hygiene-management-systems/

GATEWAY

Cleaning Instruction Card System

kersia

Training

Delivering relevant, high quality training ensures that a business can increase, modify and develop knowledge, skills and culture which will help to deliver effective and efficient performance, and ensure that quality products are delivered.

We provide many training options to enhance the theoretical and practical skills of a food and beverage workforce with experts on hand to deliver and evolve that knowledge base.

In all of the sectors we supply, we offer an introductory Level 1 course that is aimed at operatives and covers the essentials of chemical safety and cleaning.

For Level 2, 3 & 4 courses, our focus is to supply a range of courses that benefit, primarily, the roles of hygiene and technical teams directly involved in the management of hygiene on their sites.

All of Kersia's course levels are broadly equivalent to the City & Guilds structure and our bespoke courses cover a multitude of hygiene related topics, including open plant cleaning, cleaning in place, Listeria management, validation/verification/monitoring, etc.

The training, where appropriate, is HABC (Highfield Awarding Body for Compliance) accredited.

Information about the range of courses we can provide are on our web site:
www.kersia.uk/shop/training-courses/

Audit & Review

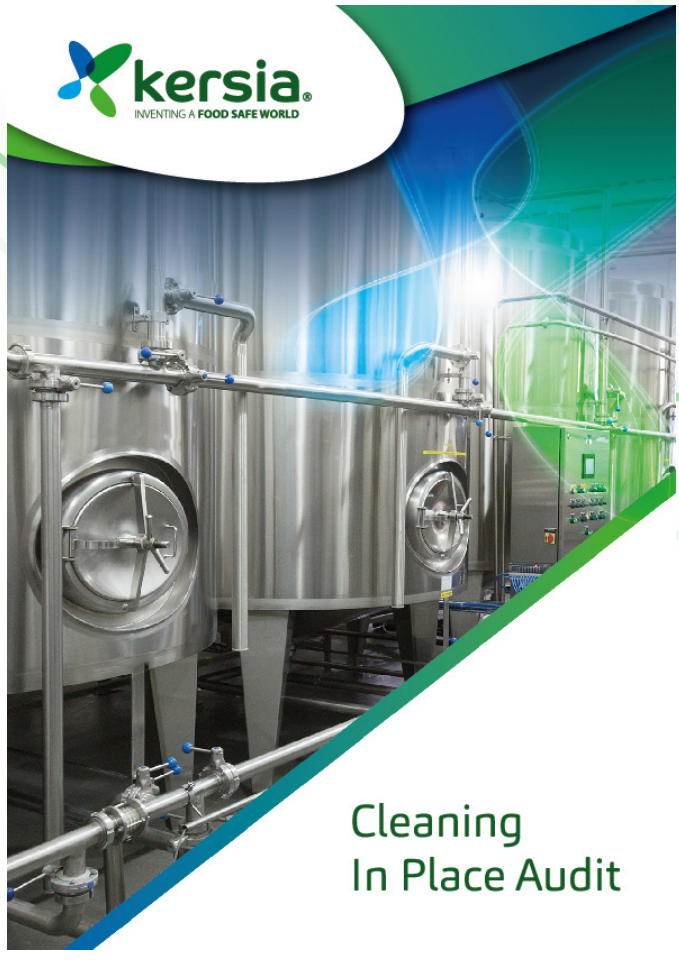
Maintaining good standards of food safety and hygiene is dependent, in part, on regular and critical self-assessment of the food businesses operational standards and practices.

Our teams work with our customers to establish a pro-active independent audit or inspection of procedures and standards.

All of our audits are based on best practice and take into consideration legislation, British Retail Consortium Global Standard for Food Safety v9, Safe and Local Supplier Approval plus Cheese Audit Standard Issue 6, and UK & Irish retailer standards.

The audits are carried out in conjunction with site personnel by experienced and audit trained Kersia representatives.

The reports themselves are turned around to the customer in a very short space of time and include photos, videos, comprehensive advice and any associated guidance and support information.



Gateway House
Pilsworth Road
Pilsworth Industrial Estate
Bury
Greater Manchester
BL9 8RD

www.kersia.uk