



In Safe Hands



Gateway House, Pilsworth Road, Pilsworth Industrial Estate, Bury, Lancashire BL9 8RD
Tel: 01706 222288 • Fax: 01706 221550
www.holchem.co.uk • info@holchem.co.uk





In Safe Hands

Introduction to Hand Hygiene	2
The Legislation & BRC Requirements	2
Resident & Transient Bacteria	3
Barriers to Hand Washing	4
Effective Hand Washing	4
Commonly missed areas during handwashing	7
Hand Hygiene Products	8
Antimicrobial v Non-Antimicrobial Soaps	8
Hand Drying	10
Automatic Hand Dryers v Hand Towels	10
Hand Sanitiser	11
Alcohol Sanitisers v Non-Alcohol Sanitisers	11
Hand Wipes	11
Independent Testing of Hand Soaps & Sanitisers	11
Gloves	12
Managing Hand Hygiene	13
Management of Hand Hygiene	13
Setting the Standards	13
Policy	13
Facilities	14
Changing Procedures	15
Training	15
Implementation	16
Monitoring	16
Review	16
Summary	16
Products & Systems	17
Hand Cleaning Products	17
Paper Products	19
Dispenser Mounting Boards	20
Hand Wash Posters	20
Changing Procedure Signage	21
DVD Summary – 'In Safe Hands'	21
Useful References	22
Publications	22
Useful Web Sites	22
Videos	22

Introduction to Hand Hygiene

The aim of the 'In Safe Hands' Brochure is to assist management in the implementation and control of good hand hygiene practice. It provides background information on hand hygiene and practical guidance on its management in food processing or food service.

In the UK alone more than 23 million days are lost to employers each year through diarrhoea and vomiting. For the

food producers and retailers who supply contaminated product which results in isolated or large-scale food poisoning outbreaks, the consequences can be disastrous. Penalties can vary from small fines to closure.

In most food processing or food service environments the handling of food is commonplace and often impossible to avoid. Cross-contamination by the transfer

of pathogenic or food spoilage organisms can be a significant issue. Hands are one of the most common vehicles for transfer of microorganisms to high-risk products and can become contaminated in a number of ways. Lack of hand washing when required and not following a correct hand washing procedure are the most common problems observed.

THE LEGISLATION & BRC REQUIREMENTS

EU Regulation 852/2004 on the Hygiene of Foodstuffs contains specific requirements relating to hand washing facilities and personal hygiene. This regulation states the following:

In addition to these general requirements EU Regulation 853/2004 on the Specific Hygiene Rules for Food of Animal Origin states that the equipment used by staff for washing hands ... must have taps designed to prevent the spread of contamination."

The British Retail Consortium Global Standard for Food Safety Version 7 also requires the following:

Reference	Requirement
Annex II, Chapter 1 paragraph 4	An adequate number of washbasins is to be available, suitably located and designated for cleaning hands. Washbasins for cleaning hands are to be provided with hot and cold running water, materials for cleaning hands and for hygienic drying. Where necessary, the facilities for washing food are to be separate from the hand-washing facility.
Annex II, Chapter VII	Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.

Criteria Reference	Wording
4.8.6	Suitable and sufficient hand-washing facilities shall be provided at access to, and at other appropriate points within, production areas. Such hand-washing facilities shall provide as a minimum: <ul style="list-style-type: none"> • Advisory signs to prompt hand-washing • A sufficient quantity of water at a suitable temperature • Water taps with hands-free operation • Liquid/foam soap • Single-use towels or suitably designed and located air driers.
7.2.2	Hand cleaning shall be performed on entry to the production areas and at a frequency that is appropriate to minimise the risk of product contamination.

RESIDENT & TRANSIENT BACTERIA

Hands carry two main types of bacteria, resident and transient.

Resident bacteria are a part of our natural flora and are not normally pathogenic. The washing and disinfecting of hands will remove most of these bacteria present on the skin surface, suppressing the bacterial levels for a given period of time. However, the numbers will begin to increase shortly after the washing has been completed.

It is virtually impossible to remove all resident bacteria from the skin and tests have shown that after repeated washing large numbers of bacteria can still be recovered from the fingers and thumbs.

Resident bacteria are found on the superficial skin surface (epidermis). However, 10 to 20% of this total resident population are within the epidermal layer of the skin and in skin crevices where they are very difficult to remove or kill.

Types of resident bacteria vary from person to person and generally don't cause food poisoning. However, the exception is *Staphylococcus aureus*. It is estimated that 40% of people carry this microorganism as part of their resident body flora, which can easily be transferred to the hands. Infected cuts and boils can be a significant source of *Staphylococcus aureus*.

Thorough hand washing can reduce the number of microorganisms but it is impossible to remove or kill all of them.

Transient bacteria are those that are found on the surface of the skin but do not normally reside there. They have been transferred onto the skin from another source either by direct contact or by aerosol. Transient bacteria can cause infection on broken skin.



Transient bacteria have been collected on the surface of the hands, usually on the palms, under fingernails and on the fingertips. Unless these bacteria can be removed effectively they are likely to be spread from hand to food contact surface, thereby presenting a cross contamination risk.

The type of transient bacteria on the skin will be varied and dependant on what has been touched. Pathogens such as *Escherichia coli* O157, *Salmonella* spp, *Shigella* spp and *Clostridium perfringens* can all be carried on the skin.

In addition high levels of transient microorganisms are found attached to hand, finger tips and fingernails surfaces after visiting the toilet and after handling raw food. These may include a significant number of pathogens.

Broken skin, cuts, boils and spots cannot effectively be cleaned by a hand washing routine and should therefore always be properly covered.

BARRIERS TO HAND WASHING

The majority of people can appreciate to some extent the importance of correct hand washing, but as a manager do you provide sufficient facilities, training, motivation, enforcement and monitoring to ensure this important part of hygiene management is carried out?

Some of the most common reasons for failing to wash hands correctly are:

- Insufficient management commitment and enforcement
- Failure to educate and motivate employees
- Inadequate facilities, soap or drying materials
- No effective system in place for hand washing
- Poor access to hand wash sinks
- Poor quality hand soap which can result in a weak lather or dry and cracked skin
- Water temperature too cold/hot making it unpleasant to wash hands
- Using a stiff nailbrush resulting in damaged skin or inflammation
- Not enough time allocated for hand washing
- Lack of notices/posters
- High staff turnover

Understaffing has also been related to ineffective personal hygiene. This was a significant factor for the largest outbreak of *Salmonella* spp. ever reported. A clear relationship between understaffing and poor hand washing was identified in this particular outbreak in Brazil.

Religious objection to alcohol sanitisers can also be an issue and clarification with regards to their use should be sought before implementation.

EFFECTIVE HAND WASHING

The objective of the food handler when washing their hands should be to reduce the number of transient bacteria to a safe level. Effective hand washing relies on friction and dilution to achieve this.

A single wash procedure is required after the following situations:

- Touching hair, nose, mouth or ears
- Eating, smoking, coughing or blowing nose
- Handling waste
- Light cleaning tasks
- Handling external packaging
- Before and after putting gloves on
- Touching dirty surfaces (there may be instances where a double hand wash procedure is required)
- Handling money
- Routinely throughout the day

After the following activities, which are likely to result in a large number of pathogens on the hands, a double wash procedure is recommended:

- Using toilet paper when there is a risk of faecal contamination
- After cleaning up human body fluids
- Changing or putting on a dressing or touching an infected cut, wound or boil
- After handling raw poultry, meat or vegetables prior to handling ready-to-eat food
- Heavy cleaning tasks

The number of transient bacteria on hands can be reduced by 3 log by following a single hand washing and drying routine.

A double wash procedure has been shown to be effective in reducing contamination to safe levels even when hands are heavily contaminated. It may also involve the use of a soft bristled nailbrush during the first wash. The physical action will assist in dislodging debris and bacteria from under and around the fingertips and nail.

EFFECTIVE HAND WASHING

A hand wash procedure involves the following stages:

- Wet hands thoroughly
- Apply soap and produce lather
- Rub hands and fingertips vigorously ensuring the fingertips, around the nails, between fingers, around the thumbs, the forearm and wrists are thoroughly massaged (this should take approx. 20 seconds)
- The hands should be thoroughly rinsed under free flowing warm water for about 10 seconds.
- The hands must be thoroughly dried.

The hand wash and drying procedure should take approx. 45 seconds to complete, which doesn't include the application of a hand sanitiser.

This can be applied and rubbed into the hands whilst the person is making their

way (where possible) to their point of work.

Research has shown that scrubbing with a nailbrush can provide over 350 times greater removal of transient bacteria from the hands than washing without. Scrubbing underneath the fingernails was found to offer the most significant reduction.

If nailbrushes are to be used in the hand washing procedure choose the type carefully. If the bristles are too firm regular washing may damage the skin; causing the skin around and under the fingernail to become inflamed or split. Soft nailbrushes should ideally be used to help loosen the soil around and under the nail.

However, in most food manufacturing environments and in the health care sector, the use of nail brushes has

significantly decreased over the years due to the difficulties in effectively managing them from a hygienic point of view. It is also viewed as being difficult to enforce their use on a regular basis due to the perception of users that the nail brushes damage the skin and increase the risk of dermatitis.

Between the nail and finger is a difficult area to clean and the longer the nail the more difficult. It is recommended that food handlers keep short trimmed nails to not only make cleaning of hands easier, but also to reduce the risk of infection under the nail caused by trapped and rotting food debris.





COMMONLY MISSED AREAS DURING HAND WASHING

The blue areas on the illustrations show the areas commonly missed or poorly washed.



HAND HYGIENE PRODUCTS

Individuals will have different levels of resistance to hand care products; most will suffer no ill effect while others may suffer skin irritation or even dermatitis. As a food handler, regular hand washing is essential and needs to be encouraged so the soap must be pleasant to use.

Dermatitis is a common condition that can affect workers in many industries. The signs are redness, swelling, blistering, flaking and cracking of the skin. This dermatitis (or eczema) is caused by contact with certain chemicals. The skin acts as a barrier and if damaged will lose its ability to protect, leading to irritation. The irritation can be caused by direct damage to the skin or by sensitisation to a chemical. In the latter case this involves an immune system reaction.

Operatives working within a food production area may wash and sanitise their hands many times throughout the working day. All detergents contain surface-active agents (surfactants), which are designed to remove debris; regular and prolonged washing can remove some of the protein and fats in the protective layer of the skin surface. Hand soaps should be formulated to minimise damage to the skin; good quality hand soaps contain ingredients to re-moisturise the skin and therefore help maintain its elasticity and its ability to act as a natural barrier.

Hand soaps are available in the form of a bar, liquid and foam. Bar soaps are difficult to manage in the food industry, could become a source of contamination and look very unprofessional. Generally liquid soaps are used from wall-mounted dispensers with some dispensers being refillable and other systems using replaceable sealed cartridges. Soaps can be a good growth medium for bacteria, although good quality hand soaps should have preservatives built into them to reduce the risk of bacterial growth. Refillable soap dispensers can easily become contaminated and subsequently grow high populations of bacteria if the hand soap dispenser is not routinely stripped down for cleaning. Modern refillable hand soap dispensers, such as those sold by

Holchem, can be easily disassembled for effective cleaning and disinfection.

A replaceable sealed cartridge dispenser with integral pump mechanism ensures that the soap is dispensed free from contamination and also removes the potential of clumsy and messy refilling of containers.

Barrier creams (sometimes known as pre-work creams) claim to reduce the physical action of a specific substance on the skin. Barrier creams are not used prior to food production because of the risk of food contamination from the cream.

Re-moisturisers (sometimes known as after work creams) help replace moisture and temporarily restore the barrier effect of the skin, thereby allowing the natural re-moisturisation of the skin to take place. Re-moisturisers should not be applied prior to direct food handling because of the risk of food contamination. It is recommended when leaving production areas that operatives wash their hands then use a re-moisturiser to protect the skin surface. Whilst hand washing will be an essential element of any hand hygiene programme, it is important to recognise that all hand washing will have an effect on the skin. If washed frequently the skin on the hands will be damaged, making it easier for transient organisms to colonise the skin, which may be more difficult to remove. If hands are washed more than 20 times per day, then most dermatologists would consider that this is a cause for concern.

Where hands are not visibly contaminated with organic matter, but there is a concern about transfer of potentially pathogenic bacteria via the surface of the hands, then an alcohol sanitiser should be considered. These are quick acting, effective and if correctly buffered do not cause skin damage.

In the health care sector, where prevention of infection is an important issue, the emphasis is now more on limiting hand washing to where it is really necessary and using alcohol sanitising rubs as an alternative.



ANTIMICROBIAL V NON-ANTIMICROBIAL SOAPS

Although antimicrobial soaps have a distinct advantage over non-antimicrobial versions in that they can achieve a higher bacterial log reduction during a standard hand washing procedure, several lab studies have found that the use of non-antimicrobial soaps can be nearly as effective. Rotter et al (1999) determined that washing the hands for 30 seconds with a non-antimicrobial soap can achieve up to a 2.8 Log reduction, close to the typical figure of 3 Log achieved when using an antimicrobial soap. Larson et al (2003) also found that there was no difference between the use of an antimicrobial and a non-antimicrobial soap in reducing the bacterial counts on the skin. There is some evidence that because antimicrobial soaps are more aggressive than non-antimicrobial soaps that, they can have a long term undesirable effect on resident bacteria (typically harmless). The defence provided by the resident bacteria may become weaker and thus allow transient bacteria an opportunity to colonise the skin.

The most important part of any hand washing procedure is the technique employed and the time spent on it.



HAND DRYING

This is the final stage of the hand washing process and is critical to achieving clean hands but can often be overlooked. It has been demonstrated that the dryer the hands after proper hand washing, the lower the level of cross contamination from hand to food or to food contact surface. One study found that 1,000 times as many microorganisms can be spread from damp hands than with dry hands (www.foodlink.org.uk 2008).

The most effective drying method will continue to be debated. Warm air dryers, disposable paper towels or cabinet towels may all be used but each has drawbacks. Warm air dryers are generally not recommended in food processing areas as the user is unlikely to achieve thorough drying of the hands, leaving the hands damp and promoting microbial growth. People may also become impatient and use their work garments to finish drying their hands.

Research carried out on 35 blow dryers found that 100% of the dryers inlets and airflows and 97% of the nozzles contained *Staphylococci* and *Micrococci* probably from hair and skin, 95% showed evidence of potential *Staphylococcus aureus* and at least 6 species of *Enterobacteria* were isolated from the air flows of 63% of the dryers. (Redway et al).

Dyson and other manufacturers have recently introduced the Airblade type hand dryers which have proven to be very popular and are making inroads into the food industry.

These types of automatic hand dryers scrape the water off the surface of the skin by blowing air at speeds of up to 400 mph.

If this type of hand dryer is to be used in a food processing environment, particularly a high care one, then it should be trialled alongside a traditional paper towel system to determine its effectiveness in ensuring the microbial loading on hands after drying is as equal or better.

There may be some environmental benefits to using automatic hand dryers as it cuts down the amount of waste generated and saves the time required emptying bins and disposing of it. Further investigatory work is required to validate these assumptions.

Paper towels can now be dispensed in a variety of ways. There is obviously a benefit if the dispense does not involve touching the dispenser parts as buttons or levers to dispense the towel are a cross contamination point. Units that avoid hand contact either by directly pulling on the towel or by automatic means have a distinct advantage. Storage of paper towels also needs careful consideration since they are extremely absorbent. Ideally they should be kept in a dry area where the risk of becoming damp is negligible

Redway et al in their work demonstrated that the most effective drying method was found to be the use of disposable paper or cloth towels.

AUTOMATIC HAND DRYERS VERSUS HAND TOWELS



In a study by the Food Hygiene Department at Campden BRI the use of paper towels was compared against warm air dryers (Taylor & Kaur 2000). The study showed that there was no significant difference between the two approaches with respect to the amount of bacteria recovered from the hands after washing and drying had finished. The study also concluded that there was no evidence to suggest that warm air dryers contaminate the local atmosphere.

HAND SANITISER

Hand sanitisers have traditionally been based on alcohol, although some newer generation products are alcohol free. The solution is rubbed into the hands after thorough washing and drying and allowed to evaporate on the hands. The hand sanitiser, which may be an alcohol only or in combination with a biocide, provides a further reduction in microorganisms on the skin surface. Alcohol based hand sanitisers often contain an emollient system that helps reduce the drying of the skin caused by the alcohol.

ALCOHOL SANITISERS VERSUS NON-ALCOHOL SANITISERS

Alcohol has been successfully used for hand disinfection for many years now although there has been the emergence in very recent times of non-alcohol sanitisers which use a biocide as the active ingredient to help reduce bacterial numbers on the skin.

Although alcohol affects our own skin resident flora, it is only a short-term effect as the levels of flora quickly return to normal levels. This action is highly desirable since it is the resident flora (usually harmless to others) that helps our skin develop its ability to withstand colonisation by transient microorganisms.

Conversely, biocides have a longer term effect, thus delaying the return of resident flora to normal levels and hence rendering it more probable that the skin will become colonised by potentially pathogenic transient microorganisms.

Although non-alcohol sanitisers are effective products and have the additional benefit of being attractive to the Muslim community, the long term effects of the biocides to human skin and their presence in the environment are largely unknown. Further research will be required over the forthcoming years to alleviate any concerns with regards to the use of biocides in sanitisers.

HAND WIPES

These types of wipes can be used in situations where there is an absence of hand washing facilities or a quick cleaning of the hands is required that doesn't impinge on the production process. A rapid product changeover on a sandwich line may be a good situation to use this approach as the manufacturer doesn't want to lose too much time during the procedure. If the hand wash facilities are too far away from the line then this may also be a deciding factor in their choice.

A clinical study (Hayes RA et al.) performed among surgical Intensive Care Unit Health Care Workers found that cleaning hands with antimicrobial wipes was almost as effective as hand washing with soap and water. However, it should be noted though that disinfectant wipes are not a direct substitute for effective hand washing and disinfection and should only be used as a compliment to the existing hand wash program.



INDEPENDENT TESTING OF HAND SOAPS & SANITISERS

When selecting a hand soap or hand sanitiser, consideration should be given to the antimicrobial efficacy of each product, especially the sanitiser. In Europe, the most common methods for testing hand soaps and hand sanitisers are EN1499 (hygienic hand wash) and EN 1500 (hygienic hand rub).

- EN1499 - In this protocol, the number of organisms released from the fingertips of hands artificially contaminated with *E. coli* is measured before and after washing with the test product. This gives a reduction factor. This is compared to the reduction factor achieved using a standard soft soap. If the test product is demonstrated to be statistically better than the soft soap, (greater reduction) and passes a test such as EN12054 standard for biocidal activity then EN1499 can be claimed.
- EN1500 - This protocol compares a test hygienic hand rub to 60% propan-2-ol. To claim EN1500 the mean reduction of test organisms achieved by the test product should not be significantly smaller than achieved by the reference propan-2-ol product, additionally the test product must pass a test such as EN12054 standard for biocidal activity.

GLOVES

Gloves may be used to protect the product from hand contamination, or to protect the hands from the product.

The use of gloves may be seen as providing some sense of security against cross contamination. They can become contaminated as easily as hands and need changing at regular intervals or cleaning. Typically gloves are changed at each break and after touching dirty surfaces.

Gloves used in direct contact with high risk food must be of suitable design and material. Vinyl gloves are the most commonly used type of glove employed in the food industry.

Gloves may be seen as a method of stopping resident bacteria contaminating the food. Studies have shown that if individuals didn't wash their hands correctly before putting on the gloves microorganisms adhered to the internal and external surfaces of the glove (Adam et al). Training in the correct procedure for donning and removal of gloves is essential as it is very likely that anything that is on the glove may contaminate the hands if gloves are removed incorrectly.

Wearing of occlusive gloves is equivalent to wet work due to the hyperhydration that will occur. This can lead to skin damage, ultimately resulting in irritant contact dermatitis. Furthermore, the hyperhydrated skin is more easily penetrated by both chemicals and microorganisms. It should also be considered that the skin remains hyperhydrated for some considerable time after gloves have been removed and is thus vulnerable from contact with contaminated surfaces.

In Germany, this has been recognised and with their Technical Regulations on Hazardous Substances (TRGS401). This regulation stipulates that where gloves are worn for more than two hours in total in any eight hour shift that this represents a

potential skin hazard and special precautions, including the wearing of separate cotton liners underneath the occlusive glove, must be taken.

The integrity of the glove is essential. Tests carried out on gloves from five different manufacturers produced the following results:

- Vinyl gloves: - 4% had defects, 34% allowed the penetration of bacteria, and 53% failed in use (Korniewicz et al)
- Latex gloves: - 2.7% had defects, 20% allowed the penetration of bacteria, and 3% failed in use (Korniewicz et al).

When specifying gloves it is important to understand the standard that is required. Gloves are graded using a system called AQL (Acceptable Quality Level), as shown in the table below:

Level	AQL	Faults per 100 gloves
1	4.0	<4.0
2	1.5	<1.5
3	0.65	<0.65

The development of a glove policy is an essential component of the management of personal hygiene in a food manufacturing environment.



Managing Hand Hygiene

MANAGEMENT OF HAND HYGIENE

Most food poisoning outbreaks are caused by negligence or ignorance and a failure to implement good hygiene practice. That is why food processors should ensure that they have various management systems in place to ensure that standards are met.

A knowledgeable and motivated workforce that understands their responsibilities is the key to good food production. The following elements need to be in place to ensure the system is effective:

SETTING THE STANDARDS

To determine the standards of hand washing required in a food premises a risk assessment must be conducted first. This should take into account where hand wash facilities are required, when hands need to be washed, what cross contamination routes there may be, training, monitoring etc.

Whilst conducting a risk assessment it should be remembered that a good hand wash followed by a thorough drying procedure will typically realise a 3 log reduction with a further 1 log reduction achievable by the introduction of an alcohol based hand sanitiser.

When an assessment has been completed, swabbing of hands should take place to verify that the hand hygiene procedure has been effective. If from the first wash the numbers on the hands are still too high for the type of manufacturing process then either:

- Facilities need to be improved
- The hand washing method requires modification
- A second wash procedure needs to be introduced
- Or all three options need to be adopted.

A thorough double wash procedure followed by the use of an alcohol sanitiser should nearly always be sufficient in most food manufacturing environments.

Finally it should always be remembered that the point at which a swab is taken only reflects that point in time. Hands can soon become contaminated during normal working procedures so it is just as important to ensure that operatives are aware of the importance of effective and regular hand washing throughout the working shift.

It is becoming common practice to wash hands after putting on a head covering and any footwear but prior to handling the overall. After hand washing the overall is put on and the person leaves the changing area. Hands are then washed for a second time. After drying a hand sanitiser is often applied before handling any food.

POLICY

Each food processor should have a Hygiene Policy in position covering all aspects of their provisions for hygiene management. Amongst the provisions of the policy should be a section on personal hygiene and hand care.

From this policy the site can set the requirements for standards, facilities, training, implementation and monitoring. The policy should also make provisions for contractors, visitors and customers.

FACILITIES

The quality and quantity of the hand care facilities provided by a food processor will determine the effectiveness of a site's hand care policy. The planning and attention to locations of hand care facilities must be given careful consideration so as not to impede on existing operations. Ideally hand care facilities should be provided at entrances and exits to production areas, toilets and any other locations established from the planning phase.

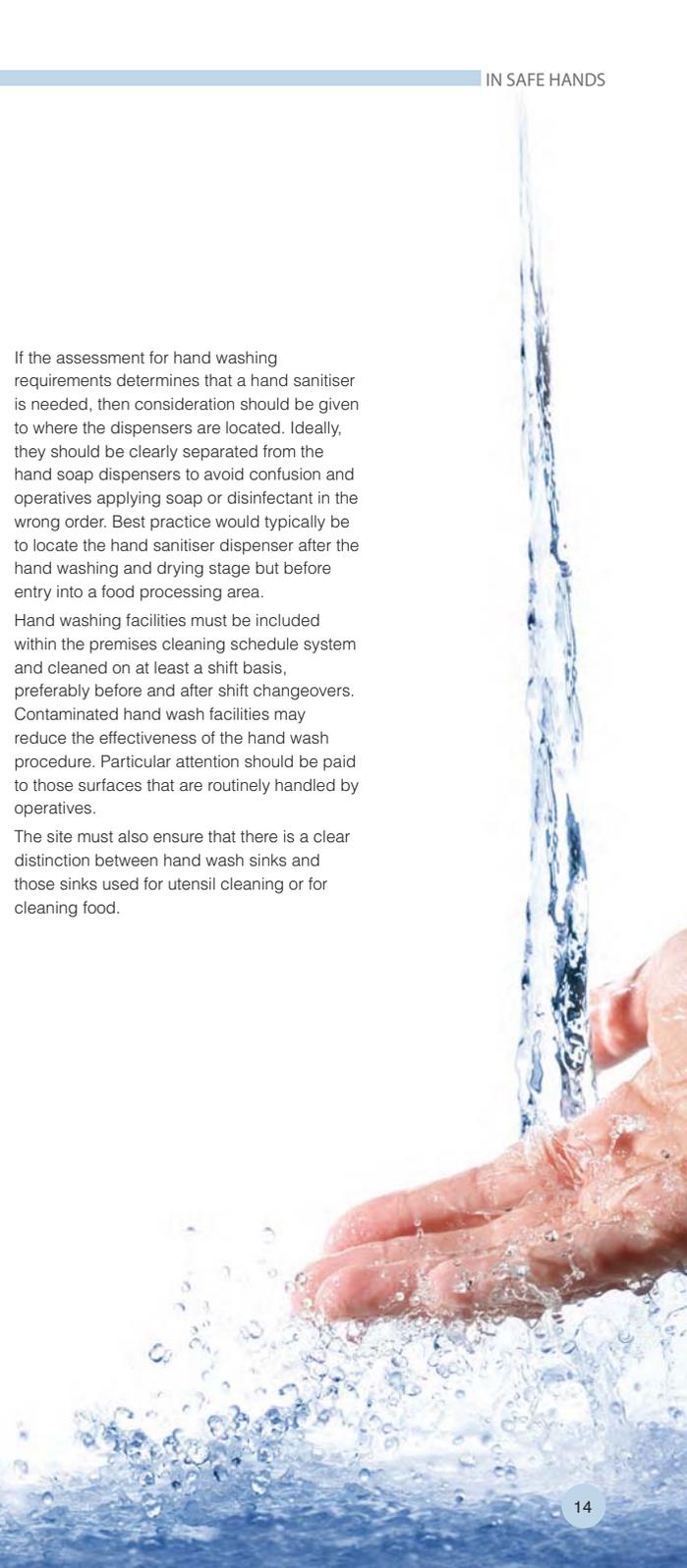
Once the locations for hand care facilities have been determined the following should be provided:

- Sufficient hand wash sinks
- The hand wash sinks to be fed with a good volume of warm water (approx. 34-38°C @ 4-8 litres min)
- Operation of the water should be via a knee operated valve or automatic sensor valve
- Hand wash sinks should be equipped with hand soap dispensers and a suitable drying method
- Waste bins for used paper towels, preferably foot operated
- Hand sanitiser dispensers particularly in high care environments
- Time allowed for all operatives to follow the correct procedure
- Posters displayed to show correct hand-wash procedure
- Regular refilling of hand soap, disinfectant and towel dispensers.

If the assessment for hand washing requirements determines that a hand sanitiser is needed, then consideration should be given to where the dispensers are located. Ideally, they should be clearly separated from the hand soap dispensers to avoid confusion and operatives applying soap or disinfectant in the wrong order. Best practice would typically be to locate the hand sanitiser dispenser after the hand washing and drying stage but before entry into a food processing area.

Hand washing facilities must be included within the premises cleaning schedule system and cleaned on at least a shift basis, preferably before and after shift changeovers. Contaminated hand wash facilities may reduce the effectiveness of the hand wash procedure. Particular attention should be paid to those surfaces that are routinely handled by operatives.

The site must also ensure that there is a clear distinction between hand wash sinks and those sinks used for utensil cleaning or for cleaning food.



CHANGING PROCEDURES

The changing procedures employed throughout food premises can vary from site to site. The procedure used may vary because of the nature of the product that is produced, layout of the area or historical reasons. Although there is no clearly defined legislation or guidelines available, the following procedure tends to be adopted by most sites, particularly when a high care production environment is encountered.

- Remove outer clothing, such as coats, and place into a locker or hang on rack
- Remove shoes and place into a locker or another suitable means of storage
- Put on clean, disposable hair covering (mob cap or hair net or both) and additional headgear (helmet, hat, etc.) if required
- Cross barrier
- Put on factory footwear
- Wash and dry hands
- Put on coat
- Wash and dry hands
- Apply post wash hand sanitiser to hands
- Enter production area

If gloves are to be used then these too may require sanitising with the hand sanitiser. It is always good practice to have pictorial signage displaying the procedure to be employed for changing before entering a food processing area.

TRAINING

In 1997 the University of Westminster carried out a survey of the British public's hand washing habits. It was found that 32% of the people surveyed didn't bother to wash their hands after using the toilet; of those who did 58% used water only. If this finding is representative then hand hygiene training of staff must be considered a prerequisite of induction to a food processing environment. This training must include all personnel who enter the production areas including visitors or contractors.

The training and education of food handlers is one of the most important factors affecting the success of achieving the standards required. Compliance with a method or procedure will increase if there is understanding and agreement on that requirement.

Effective training on hand washing is fundamental to ensure the safe, hygienic and consistent production of food.

Effective training results in competency and:

- Enables the staff to carry out their duties in a safe manner
- Promotes confidence and job satisfaction
- Reduces the level of supervision necessary

Any person entering the food processing environment should be able to demonstrate the knowledge of why, when and how hands should be washed and show the correct hand washing procedure.

A hand care training programme should be designed to ensure that:

- Induction, coaching and assessment of all staff are covered
- Actual hand washing demonstrations are undertaken. Adopting the "I show you" - "You show me" concept.

Visual aids can make all the difference to training food handlers and can increase the level of interest in a particular subject. Training methods may include e-learning, videos, PowerPoint presentations and photographs.

UV Inspection Cabinets are a very effective training tool as well because they can show how effectively a person washes their hands. The procedure is carried out by first coating the hands with a fluorescent liquid. The person then washes and dries their hands in the normal manner. When the hands are placed under the UV light within the cabinet any dye not washed away will fluoresce showing the areas missed.

Assessment of hand care training should establish that the trainee understands and can demonstrate competency, including:

- The need for hand washing
- When to wash their hands
- How to wash and dry their hands

Information on the hand washing procedure should be displayed at each hand wash station in the form of posters or signage.

IMPLEMENTATION

For any system to be effective it is vital that the responsibilities for overseeing it are clearly defined. Management play a crucial role and without input and commitment the system will surely fail. It is therefore important that management not only set and communicate policy on hand care but must lead by example as well by ensuring they follow the correct hand wash procedure at all times. Management personnel should also enforce the policy throughout the site's operations ensuring that the standards for hand care are met and maintained.

A good food business will have a disciplinary procedure in place for smoking outside of designated areas but do they have a disciplinary procedure in place for hand washing non-compliance? There should be a disciplinary procedure in place for consistent non-compliance by food handlers on all matters relating to hygiene. This will act as an additional deterrent in the drive to ensure that the site's Hygiene Policy is adhered to.

MONITORING

Once the training has been completed the management team will need to monitor compliance to the procedure. This may be carried out in a number of ways and it may be necessary to carry out more than one method of monitoring.

The constant monitoring of hand care should receive the support from management that it deserves. It can be done in a couple of ways:

- Observation of individual washing procedure
- Closed circuit television

Hand swabbing of production operatives is only a form of verification, as the swab results may not be available for three to four days. It is, however, a very powerful method of reinforcing hand washing procedure. CCTV and visual checks are an effective method of monitoring the hand washing procedure and will identify personnel skipping or incorrectly washing their hands. However, these methods cannot determine if the hands are free of bacteria.

Monitoring should also make provisions for the quality of facilities provided such as hand soap, hand disinfectant, paper towels, cleaning and disinfection of facilities and the quality and temperature of water.

Recording the usage of hand washing/drying/sanitisation consumables is a very simple and effective method of determining if hand washing compliance is occurring. If the usage levels of these items aren't consistent over a period of time, it may indicate that hand washing frequency is declining.

All results of monitoring should be recorded, along with any actions that are recommended and those that are implemented.

REVIEW

The entire hand care system should be reviewed on an ongoing basis but no less than once per year. The review should include the policy, facilities, training, implementation and monitoring.

SUMMARY

For a site to have an effective Hand Hygiene Policy then each stage of it must be continuously observed, enforced, monitored and reviewed. If any of the stages don't receive the correct focus from the employer or employee then this will unquestionably result in consistent failure.



Products & Systems

DISPENSERS WITH REFILL CARTRIDGES

LUXOR HAND SOAP DISPENSER



Foam dispenser for cartridge product H4 Foam Soap (Luxor). The dispenser delivers 0.7 ml per push.

Luxor Hand Soap Dispenser
1 off Order Code: OPTE21/Luxor

FOAM SOAP - LUXOR



A high quality, but gentle antimicrobial foam soap coupled with skin conditioning ingredients to ensure that no dry or adverse skin conditions occur. The antimicrobial efficacy of Luxor has been tested and passes EN12054 and EN1499.

H4 Luxor Foam Soap
3 x 1.25 litre Order Code: OPTH4

FOAMSAN HAND SANITISER DISPENSER



Foam dispenser for cartridge product H6 Hand Sanitiser (Foamsan). The dispenser delivers 0.7 ml per push.

Foamsan Hand Soap Dispenser
1 off Order Code: OPTE21/Foamsan

HAND SANITISER - FOAMSAN



An antimicrobial, foaming, non drying post wash hand sanitiser gel. The antimicrobial efficacy of Foamsan has been tested and passes EN12054 and EN1500.

H6 Foamsan Hand Sanitiser
3 x 1.2 litre Order Code: OPTH6

LUXURY HAND SOAP DISPENSER



Foam dispenser for cartridge product H3 Hand Soap (Luxury). The dispenser delivers 0.7 ml per push.

Luxury Hand Soap Dispenser
1 off Order Code: OPTE21/Luxury

FOAM SOAP - LUXURY



A pleasantly fragranced luxury hand soap. Not suitable for use in food production areas.

H3 Luxury Hand Soap
3 x 1.25 litre Order Code: OPTH3

LUXCELL DISPENSER



Liquid dispenser for cartridge product H5 Hand Soap (Luxcell). The dispenser delivers 1.7 ml per push.

Luxcell Dispenser
1 off Order Code: OPTE20/Luxcell

HAND SOAP - LUXCELL



A high quality, gentle soap coupled with skin conditioning ingredients to ensure that no drying or adverse skin conditions occur.

H5 Luxcell Hand Soap
8 x 1 litre Order Code: OPTH5

LUXSAN DISPENSER



Liquid dispenser for cartridge product H2 Hand Sanitiser (Luxsan). The dispenser delivers 1.7 ml per push.

Luxsan Dispenser
1 off Order Code: OPTE20/Luxsan

HAND SANITISER - LUXSAN



An antimicrobial, non drying post wash hand sanitiser gel. The antimicrobial efficacy of Luxsan has been tested and passes EN12054 and EN1500.

H2 Luxsan Hand Sanitiser
8 x 1 litre Order Code: OPTH2



REFILLABLE DISPENSERS

HAND SOAP DISPENSER



Durable, hygienic refillable liquid dispenser for Hand Soap. The dispenser holds 0.9 litre and delivers 2 ml per push.

Hand Soap Dispenser
1 off Order Code: OPTE115

HAND SOAP



Hand soap is a liquid hand soap combining the cleansing power of synthetic soaps with an emollient that reduces the drying of the skin. It is unperfumed to avoid the tainting of food and is suitable for use in food processing or preparation areas.

M7 Handsoap
4 x 5 litre Order Code: HLH1

HANDSAN DISPENSER



Durable, hygienic refillable foam dispenser for Handsan. The dispenser holds 0.9 litre and delivers 0.6 ml per push.

Handsan Dispenser
1 off Order Code: OPTE117

HANDSAN



A non-alcohol based antimicrobial, non drying, post hand wash hand sanitiser liquid. The antimicrobial efficacy of Handsan has been tested and passes EN12054 and EN1500.

Handsan
4 x 5 litre Order Code: HLH9

HAND CARE DISPENSER



Durable, hygienic refillable liquid dispenser for Hand Care. The dispenser holds 0.9 litre and delivers 1 ml per push.

Hand Care Dispenser
1 off Order Code: OPTE119

HAND CARE - REMOISTURISER



Hand Care is a high quality moisturising lotion for hand use. It helps to re-moisturise the hands. This is of benefit when constant hand washing and cold weather can cause drying and cracking of the skin.

M9 Hand Care - Remoisturiser
4 x 5 litre Order Code: HLM29

HAND MOUSSE DISPENSER



Durable, hygienic refillable foam dispenser for Hand Mousse. The dispenser holds 0.9 litre and delivers 0.6 ml per push.

Hand Mousse Dispenser
1 off Order Code: OPTE118

HAND MOUSSE - HAND SOAP



M8 Hand Mousse is a foaming hand soap, combining cleansing power with an emollient system and an antimicrobial agent. It is un-perfumed and maintains the skins natural moisture levels and elasticity. The antimicrobial efficacy of Hand Mousse has been tested and passes EN12054 and EN1499.

M8 Hand Mousse - Hand Soap
4 x 5 litre Order Code: HLM28

DERMOLSAN DISPENSER



Durable, hygienic refillable liquid dispenser for Dermolsan. The dispenser holds 0.9 litre and delivers 2 ml per push.

Dermolsan Dispenser
1 off Order Code: OPTE116

DERMOLSAN



A QAC free, non drying, post hand wash hand sanitiser liquid. The antimicrobial efficacy of Dermolsan has been tested and passes EN12054 and EN1500.

Dermolsan
4 x 5 litre Order Code: HLD21

Products & Systems

PAPER PRODUCTS Dispensers and refills

ONE PULL DISPENSER



The hand towel is dispensed from the centre of the roll and perforated to ensure single sheet dispense.

One Pull Dispenser
1 off Order Code: TCR57025

ONE PULL HAND TOWEL REFILL



1 Ply, 750 sheet, blue, 26 gsm., recycled hand towel. 200mm x 285 metres.
2 Ply, 395 sheet, blue, 38 gsm., recycled hand towel. 200mm x 150 metres.

One Pull Hand Towel Refill
1 Ply - 6 rolls Order Code: TCR50000/1PLY-BL-6
2 Ply - 6 rolls Order Code: TCR50000/2PLY-BL-6

CENTRE FEED ROLLS DISPENSER



Smooth, moulded plastic dispenser for centre feed hand towel.

Centre Feed Dispenser
1 off Order Code: TCR57000

CENTRE FEED HAND TOWEL REFILL



1 Ply, 750 sheet, blue, 21 gsm., recycled hand towel. 200mm x 285 metres.
2 Ply, 395 sheet, blue, 38 gsm., recycled hand towel. 200mm x 150 metres.

Centre Feed Hand Towel Refill
1 Ply - 6 rolls Order Code: TCR50000/BL-1-6
2 Ply - 6 rolls Order Code: TCR50000/BL-6

PAPER TOWEL DISPENSER



Smooth, moulded plastic dispenser for C-Fold & Interfold paper towels.

Paper Towel Dispenser
1 off Order Code: TCR57001

C-FOLD TOWEL REFILL



1 Ply, 184 sheet, blue, 40 gsm., recycled c-fold hand towel. 230mm x 310mm. Pack Size: 16 sleeves x 184 sheets (2,944 sheets).

C-Fold Towel Refill
16 sleeves Order Code: TCR50001/BL-2944

INTERFOLD TOWELS REFILL



1 Ply, 240 sheet, blue, 45 gsm., recycled interfold hand towel. 240mm x 220mm. Pack Size: 15 sleeves x 240 sheets (3,600 sheets).

Interfold Towels - Refill
15 sleeves Order Code: TCR50009/BL-3600

WAVE N' DRY HAND TOWEL DISPENSER



Revolutionary touch-free, hygienic dispenser which delivers a measured length of towel when a hand is waved below the sensor. Facility to add reserve roll which dispenses when the first roll is empty.

Wave n Dry Hand Towel Refill
1 Ply, blue, 40 gsm., 553 sheet 200mm x 155 metres.
12 rolls Order Code: TCR50008/BL-12

BLACK	RED	GREEN	BLUE	WHITE
TCR 57006/01	TCR 57006/02	TCR 57006/03	TCR 57006/04	TCR 57006/05



HANDS FREE HAND TOWEL DISPENSER



Towels are dispensed by pulling with both hands on the exposed sheet. Facility to add reserve roll which dispenses when the first roll is empty.

Hands Free - Hand Towel Refill
1 Ply, blue, 48 gsm., 574 sheet, recycled hand towel. 200mm x 155 metres.
12 rolls Order Code: TCR50010/BL-12

BLACK	RED	GREEN	BLUE	WHITE
TCR 57016/01	TCR 57016/02	TCR 57016/03	TCR 57016/04	TCR 57016/05



DISPENSER MOUNTING BOARDS Hand Wash Station Boards for use in conjunction with all Holchem hand hygiene dispensers (dispenser not included)

<p>FOR HAND SOAP</p>  <p>Hand Soap Board 1 off Order Code: SKS20155</p>	<p>FOR HAND SANITISER</p>  <p>Hand Sanitiser Board 1 off Order Code: SKS20156</p>	<p>FOR HAND RE-MOISTURISER</p>  <p>Hand Re-moisturiser Board 1 off Order Code: SKS20157</p>
--	--	--

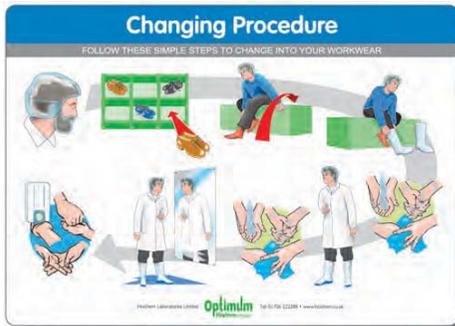
HAND WASH POSTERS Hand Washing technique posters are self-adhesive, laminated signs for display in handwashing areas. They show the correct sequence and method for washing and drying.

<p>WASH - DRY WITH PAPER TOWEL</p>  <p>Hand Wash Dry with paper towel 1 off Order Code: RES0000018</p>	<p>WASH - DRY WITH DYSON</p>  <p>Hand Wash Dry with Dyson 1 off Order Code: RES0000021</p>	<p>WASH - DRY WITH HAND DRYER</p>  <p>Hand Wash Dry with hand dryer 1 off Order Code: RES0000023</p>
<p>WASH & SANITISE DRY WITH PAPER TOWEL</p>  <p>Hand Wash & Sanitise Dry with paper towel 1 off Order Code: RES0000019</p>	<p>WASH & SANITISE DRY WITH DYSON</p>  <p>Hand Wash & Sanitise Dry with Dyson 1 off Order Code: RES0000022</p>	

CHANGING PROCEDURE SIGNAGE

Below is an example procedure that Holchem can produce for its customers.

The sequence of change can be illustrated to match the customer's changing procedure.



Changing Procedure Sign
1 off Order Code: RES0000030/bespoke

IN SAFE HANDS TRAINING PACK

The In Safe Hands training pack is designed to assist the setting up and control of good hand hygiene practice. It provides the background information on hand hygiene and practical guidance on its management in food processing and food service.



In Safe Hands Training Pack
1 off Order Code: RES0000020
In Safe Hands Brochure
1 off Order Code: RES0000024
In Safe Hands CD
1 off Order Code: RES0000025

DVD SUMMARY – 'IN SAFE HANDS'

Video	DVD format. Running Time 5 minutes.
Scope	Why we need to wash hands When to wash hands How to wash hands
Target Audience	All staff, visitors and contractors who enter food processing areas.
Training	Suggest that video is part of personal hygiene training for induction or for more comprehensive training sessions. Suggest that training also includes practical demonstration of hand washing. This should be followed by trainee demonstrating correct procedure.
Introduction to video	Explain scope of video. Ask the question why do we need to wash our hands.
After video	Reinforce message by asking: Why do we need to wash hands? When do we wash hands? How do we wash hands?

