

Chemical Control

Safe Handling, Storage and Usage of Chemicals

Development

To define detail, scope and purpose.

Development

This information can be used to develop food safety and quality programs that meet the requirements of modern Regulatory, Customer and Industry Standards:

- We take the time to explain the expectations and requirements of food safety and quality compliance as these relate to your food safety and quality programs.
- You may choose to use our Premium Resources to build, enhance or upgrade your food safety and quality program.
- We encourage you to share this webpage with any food compliance associates and peers you believe may benefit from our commitment to providing our users with user friendly information and resources to achieve a superior Food Compliance Culture.
- We welcome your suggestions for additions of general or specific content through the haccp.com Contact Page.

Key Definitions For Chemical Control

- **Chemical:** A chemical is a substance used for a specified task. Chemicals are commonly associated with food safety and quality system elements such as pest control, cleaning and sanitation, and maintenance within food businesses.
- **Chemical Control:** The documented policies, procedures and practices used to select, approve, store, label, dilute, use and dispose of chemicals so that they do not contaminate food or harm people.
- **Chemical Inventory Listing:** A record of the chemicals held within a food business, used to track their location, usage and the currency of their Safety Data Sheets.
- **Decanting:** The transfer of a chemical from its original container into a working container.
- **Dilution Ratio:** The proportion of chemical to water (or another liquid) specified for a particular use, for example 1 part chemical to 20 parts water.
- **Dosing Unit:** Equipment that automatically measures and mixes a chemical with water to a set dilution ratio.
- **Food Grade Chemical:** A chemical, such as a lubricant, that its manufacturer confirms is suitable for use where incidental contact with food may occur.
- **Personal Protective Equipment or PPE:** Primary barrier of safety equipment that can consist of gloves, coats, gowns, shoe covers, boots, respirators, face shields, safety glasses, or goggles. PPE is used to shield or isolate individuals from the chemical, physical, and biological hazards they may encounter.
- **Safety Data Sheet or SDS:** Safety Data Sheets are the internationally standardised way to document the hazardous properties of chemicals and other hazardous agents, including information on toxicity, first aid, personal protection controls, storage and handling precautions, spill and leak clean-up, disposal practices, transportation, physical data, and reactivity data.
- **Sanitiser:** A chemical that reduces the number of microorganisms on a clean surface to a safe level.
- **Specification:** A specification is an explicit set of requirements to be satisfied by a material, product, or service. Should a material, product, or service fail to meet one or more of the applicable specifications, it may be referred to as being out of specification.
- **Surfactant:** A compound within detergents that lowers surface tension, helping to lift and remove dirt from surfaces.
- **Titration:** A process in which a carefully measured amount of a well-characterised chemical substance is added to a substance of unknown concentration until a complete reaction has occurred. Titrations are used for chemical analyses to determine volumes of chemicals and other substances within a solution.

Chemical Control Development

When considering the development, documentation, and implementation of Chemical Control within food safety and quality management systems, the following information should be considered to ensure effective outcomes:

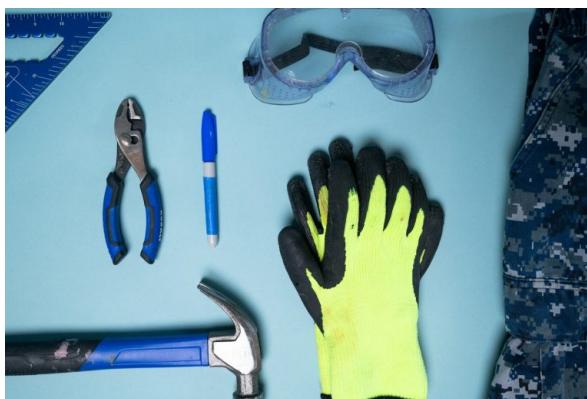
About Chemical Control

The use of chemicals within any food business must include elements that not only promote food safety but also promote the general safe use, handling, and storage of all cleaning, sanitation, pest control, maintenance, and other chemicals. This can generally be facilitated by ensuring procedures for chemical control are documented and available to everyone using chemicals.

Chemical usage procedures may include:

- Familiarity with the type of chemical being used, including its composition, strength, and associated hazards. This information can generally be gathered from the SDS, labelling, and manufacturer's instructions. Procedures may include appropriate specifications for use such as "Do not mix with other chemicals" or "Do not add water";
- Labelling of decanted, diluted, or prepared chemical mixtures to ensure they are not mistaken for other chemicals;
- Storing, handling, and using chemicals away from foods, and in a way that prevents the contamination of foods;
- Defining the responsibility for chemical use;
- Training and competency verification procedures for team members required to handle or use chemicals.

Chemical Usage Requirements



Personal protective equipment such as goggles and gloves should be worn as directed by the Safety Data Sheet.

All pesticides, sanitisers, cleaners, polishes, lubricants, and other toxic and non-toxic chemicals used in the food business must be:

- Necessary for the operation of the establishment. Unnecessary chemicals should not be found anywhere in the establishment;
- Used properly according to the manufacturers' label and SDS instructions;
- Properly labelled when chemicals are removed from the original container and put into a working container. Food containers should not be used as working containers for chemicals;
- Considered against the legal requirements for chemical handling and use. The use of some chemicals must only be conducted by specially licensed persons. Legal requirements also commonly include requirements for PPE to be worn.

Chemical Approvals

Food business chemicals must be approved for use in the food establishment. Some products, such as food-grade lubricants, may contain statements by the manufacturer as being approved for use within the food industry or a specific industry sector. Before use within a food business, a confirmation must be received that chemical products are approved for a specific use, and will not potentially contaminate foods. Pesticides and other regulated chemicals must only be applied by persons licensed or certified under local regulatory requirements. Regulatory approvals

may also be required for the use of some chemicals within food businesses.

Food Grade Chemical Confirmation

Where a chemical may come into contact with food, food contact surfaces, or packaging, the supplier should confirm in writing that it is suitable for that use. This commonly applies to lubricants, cleaning and sanitising chemicals used on food contact surfaces, and processing aids.

Food grade confirmation should be received before the chemical is first used, kept with the Safety Data Sheet, and recorded on the approved chemical listing. Confirmation should be reviewed when the chemical, its formulation, or its supplier changes.

Safety Data Sheets (SDS)

A current Safety Data Sheet should be held for every chemical used within a food business. Safety Data Sheets are commonly supplied by the chemical manufacturer or supplier and describe the hazards, safe handling, storage, first aid, spill response, and disposal requirements for each chemical.

Safety Data Sheets should be:

- Checked against the approved chemical listing and chemical inventory listing;
- Readily available to team members who handle or use the chemical;
- Reviewed for currency on a scheduled basis and replaced when the supplier issues a revised version;
- Used as the source for first aid, spill response, and PPE requirements within chemical usage procedures.

Chemical Decanting and Labelling



Clear labels on working containers help to ensure that chemicals are never mistaken for other products.

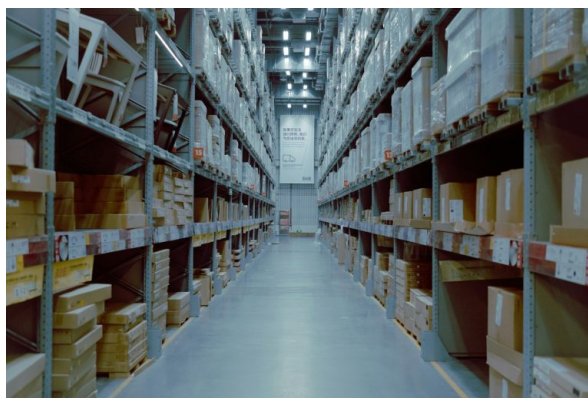
Decanting is the transfer of a chemical from its original container into a working container. Where chemicals are decanted, diluted, or mixed, the working container should be fit for purpose, clean, and clearly labelled so that it cannot be mistaken for another product.

Labels on working containers should generally include:

- The product name;
- The main hazards and any required PPE;
- The dilution ratio or intended use where applicable;
- The date prepared, where the mixture has a limited useful life.

Food and drink containers must never be used as working containers for chemicals. Decanting should follow the directions on the Safety Data Sheet and the manufacturer's label.

Chemical Storage, Segregation and Security



Chemicals should be kept in a designated storage area that is separate from food and packaging.

Chemicals used within food businesses must be properly stored and segregated. Insecticides and rodenticides must be stored separately from cleaning compounds and other chemicals. All chemicals and pesticides must be stored separately from food, food contact surfaces, and single-use and single-service articles. In this context, the term separate does not include storage of toxic chemicals above food, food contact surfaces, single-use articles, or single-service articles.

The storage of chemicals must also meet local regulatory and environmental protection requirements.

Where necessary, adequate facilities for the storage and handling of food, ingredients, and non-food chemicals, including cleaning chemicals, pest control chemicals, lubricants, and other maintenance chemicals, must be provided.

Where appropriate, food storage and handling facilities should be designed and constructed to:

- Permit adequate maintenance and cleaning;
- Avoid pest access and harbourage;
- Enable food to be effectively protected from contamination during storage and handling;
- Where necessary, provide an environment that minimises the deterioration of food through controls including temperature and humidity.

The type of facilities required will depend on the nature of the food items being stored and handled by a food business. Where necessary, segregated and secure storage facilities should be provided for cleaning chemicals, pest control chemicals, lubricants, and other maintenance chemicals. Storage facilities for ingredients, packaging, and other materials should also be appropriately secured and adequately ventilated. Further guidance is available within Storage and Handling Requirements.

Chemical Dosing Units



Accurate measuring and mixing is essential for correct chemical dilution ratios.

Chemical dosing units are commonly fitted to ensure the appropriate dilution of chemicals with water and other liquids where required. Where chemical dosing units are fitted, they must be regularly calibrated to ensure their accuracy. The calibration of chemical dosing units should be scheduled and documented, just as the calibration of items such as thermometers or scales. See Calibration of Measuring and Testing Equipment for further guidance.

Chemical suppliers commonly manage this function within food businesses, often using titration methods to show that the output from the dosing unit contains the chemical at the correct concentration. Outcomes of calibration activities should be recorded and reviewed on an ongoing basis to reconfirm the avoidance of product contamination.

Chemical Handling and Usage Training

Specific chemical training is a standard requirement for persons involved with the use of chemicals within food businesses. Chemical training should be tailored to the specific requirements of the chemicals being used, to ensure that foods do not become contaminated by such usage.

Chemical handling and usage training should be completed before persons are left unsupervised to use chemicals within a food business. Competency against chemical handling and usage training requirements should also be verified before unsupervised use. See Training, Competency and Resources Requirements for further guidance.

Specific chemical handling and usage training should be developed, scheduled, conducted, and recorded to demonstrate compliance for functional chemicals used as food additives or processing aids. The use of such chemicals should be well controlled. It is common for chemicals such as nitrites and sulphites to be stored in secure areas and be accessible only to authorised persons, so that accidental or intentional misuse is unlikely to occur.

Chemical Inventory Listings

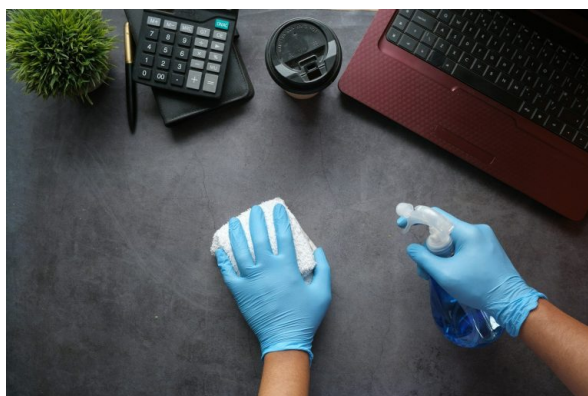
It is common for food businesses to develop, document, implement and maintain chemical inventory listings to track the usage and location of chemicals within the business. This activity not only provides evidence of appropriate chemical usage but also assists in controlling the costs of purchasing chemicals. An added benefit is the ability to confirm chemicals received against the chemical inventory listing, to ensure the chemical has not changed from its original specification and active ingredients.

Chemical inventory listings commonly include the following details:

- Chemical Supplier;
- Chemical Name;
- Chemical Unit Size;
- Date Received;
- Batch or Lot Number;
- Active Ingredients;
- Nominated Dilution Ratio;
- Intended Dilution Ratio;
- Currency of SDS;

- Date Use Started;
- Date Use Finished.

Detergents



Detergents lift food residue from surfaces so that sanitisers can work effectively.

Detergents are used to remove dirt particles. They are not designed to kill microorganisms, although their pH levels can affect microbial growth and survival. Detergents are chemicals that usually contain a surfactant, which makes the removal of dirt from surfaces easier. The most appropriate time to clean surfaces with detergents in solution, or as recommended, is immediately after use. This removes food particles before they harden and become more difficult to remove, and before they support microbial growth. The strength of a detergent regarding its cleaning power is reflected in its alkalinity. The use of hot water as a component of cleaning and sanitising routines, where appropriate, can dramatically improve the capability of the system to control microorganisms. See Cleaning and Sanitation for further guidance.

Sanitisers



Sanitisers are applied to clean surfaces and used according to the supplier's directions.

Sanitisers are generally not good at removing dirt but do kill microorganisms if used according to the conditions of use. The majority of food poisoning bacteria are killed if they are exposed to heat, chemical sanitisers, or a combination of both. Sodium hypochlorite (chlorine bleach) is one of the most commonly used chemical sanitisers in the food industry today. Commercial bleach typically contains around 10% available chlorine, while the domestic variety is commonly around 4%. High-risk areas to be sanitised should use a solution at a concentration of up to 100 parts per million of available chlorine. Other areas and applications may require a solution of around 50 parts per million. Concentrations should always follow the supplier's directions and your validated cleaning and sanitation procedures.

Choosing a Detergent or Sanitiser

Chemical sanitising generally requires greater controls than sanitising with hot water or steam. The following factors must be considered to obtain effective sanitation by chemical methods:

- Amount of water used;
- pH of the water: The pH and hardness of the water being used must be determined. Should the water supply be from a municipal supply, the water supplier may adjust the hardness of the water through processing controls. If the water is from other sources, it may need to be tested periodically to ensure ongoing appropriate outcomes;
- Temperature of the water;
- Contact time;
- The concentration or dilution rates: Cleaners and sanitisers should be supplied with a Safety Data Sheet or SDS. This sheet, along with the directions for use on the supplied container or accompanying documentation, will outline the requirements for using the product for its maximum benefit in the cleaning and sanitation process;
- Exposure time: Detergents and sanitisers need to be exposed to surfaces for long enough to be effective. Exposure times can also be found on the documentation accompanying the product.

The factors that determine the performance of a particular detergent or sanitiser include:

- The type of substance that is to be removed, as different types of detergents are more adept at removing specific substances. Fats, sugars, and proteins are the three main types of substances that detergents are developed to remove. Dirt reduces a sanitiser's ability to kill microorganisms because the microorganisms can shelter in and beneath dirt where they are difficult to reach;
- The water temperature used in conjunction with the detergent or sanitiser: Most detergents and sanitisers are designed to work at their best in either hot or cold water. Using a product as per the manufacturer's directions will produce the best outcomes in cleaning and sanitising.

Obtaining Correct Chemical Sanitising Ratios

When not using an automated chemical dosing system, chemical sanitiser instructions call for a given amount of chemical sanitiser per litre of water. This ratio of chemical sanitiser to water is important to ensure ongoing appropriate outcomes for the sanitation process.

If manual chemical sanitiser measuring and mixing methods are used, the processes involved must follow procedure and be verified on an ongoing basis.

Staff involved in applications where they are required to manually measure and mix chemicals must be trained and deemed competent in the required tasks.

If your food business supplies foodstuffs manufactured to a customer's specifications, consider any specific Chemical Control Development requirements in relation to their items.

Chemical Control Development Key Points

- Chemical Control programs must be developed to meet relevant Regulatory, Industry, and Customer standards and requirements;
- The Senior Management of your business is committed to providing adequate resources for the development of your Chemical Control program;
- Should you require additional resources for the development of Chemical Control program elements, please discuss this with the relevant Senior Management representative;
- A properly developed Chemical Control program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly developed Chemical Control program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Documentation

To establish the developed detail in a viewable format to facilitate information.

Documentation

Document: A document provides guidance and/or direction for performing work, making decisions, or rendering judgements that affect the safety or quality of the products or services that customers receive.

Documented policies, procedures, work instructions, and schedules form the basis of any food safety and quality management system. The following documentation formats may be considered to ensure ongoing compliance with specified requirements for Chemical Control:

- Chemical Control policy;
- Chemical Control development procedures;
- Chemical Control implementation procedures and work instructions;
- Chemical Control monitoring procedures;
- Chemical Control corrective and preventative action procedures;
- Chemical Control verification schedule;
- Chemical Control verification procedures;
- Chemical Control validation schedule;
- Chemical Control validation procedures;
- Chemical Control training procedures.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Chemical Control Documentation requirements in relation to their items.

You may wish to visit the Chemical Control Templates section of haccp.com for examples of Chemical Control documentation, record, and resource formats commonly applied within food safety and quality systems.

Chemical Control Documentation Key Points

- Chemical Control programs must be documented to meet relevant Regulatory, Industry, and Customer standards and requirements;
- All documented Chemical Control program elements must be controlled to ensure compliance;
- Key documented Chemical Control program elements should be available to your business team at all times to ensure they can facilitate required tasks;
- A properly documented Chemical Control program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly documented Chemical Control program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Implementation

To facilitate the application of the documentation.

Implementation

Implementation: Implementation is the application of documented food safety and quality system elements into the actual business operation.

The implementation of Chemical Control within any food business requires genuine commitment from senior management, staff, and visitors to ensure the nominated goals of implementation are achievable on an ongoing basis. It is a step that requires significant planning and consideration of general and specific food business circumstances to ensure the outcomes of Chemical Control do not negatively impact the safety and quality of the food items dispatched from the business.

Implementation of Chemical Control must include a clear definition of responsibilities and authorities for all levels of

participation by senior management, staff, and visitors to the site.

When implementing Chemical Control within a food safety and quality system, you may wish to consider the following requirements before completion:

- Communication and display of the Chemical Control policy;
- Completion of Verification and Validation of Chemical Control development procedures;
- Availability of Chemical Control implementation procedures and work instructions;
- Availability of Chemical Control monitoring procedures and record templates where applicable;
- Availability of Chemical Control corrective and preventative action procedures and record templates where applicable;
- Availability of the Chemical Control verification schedule;
- Availability of Chemical Control verification procedures;
- Availability of the Chemical Control validation schedule;
- Availability of Chemical Control validation procedures;
- Completion of Chemical Control training procedures;
- Completion of product design and development requirements related to Chemical Control;
- Completion of process design and development requirements related to Chemical Control;
- Completion of training for team members who have responsibilities and involvement within Chemical Control;
- Completion of competency approval for team members who have responsibilities and involvement within Chemical Control.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Chemical Control Implementation requirements in relation to their items.

Chemical Control Implementation Key Points

- Chemical Control programs must be implemented to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Your Chemical Control program must be fully implemented as per relevant documented Policies, Procedures, and Work Instructions;
- The implementation of Chemical Control requires a commitment to the provision of resources by the Senior Management of your business;
- A properly implemented Chemical Control program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly implemented Chemical Control program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Monitoring

To review, confirm and document evidence of the implementation against documented limits.

Monitor

Monitoring: Monitoring is the act of reviewing and confirming measurable parameters of a defined process or product status.

Monitoring requirements within food industry sectors are generally identified against limits of acceptability defined within HACCP plans, implementation procedures, and work instructions. Monitoring usually includes some element of record-keeping, which may be maintained manually or through digital systems. Advancements in technology have produced many systems and processes that are self-monitored or self-adjusted when variances are identified. Regardless of the system used, the goal of any monitoring activity is to provide sufficient evidence that any limit of acceptability has been met.

Traditional Chemical Control monitoring requirements include manual recording and the application of corrective actions when the results of monitoring are found to be outside acceptable limits. Corrective Actions should also

generally be strongly linked to the monitoring process where applied to ensure full traceability of the applied actions.

Common monitoring activities and record formats may apply to Chemical Control:

- **Approved Chemical Listing:** A listing of Chemicals approved for use within a particular Food Business. Listings may be inclusive of elements such as nominated suppliers of each nominated chemical, size, SDS, and Food Grade Confirmation;
- **Chemical Inventory Listing:** A perpetual listing of chemicals received at the site, including frequency and amounts of use. Chemical Inventory formats are commonly used to track chemical usage to ensure proper use and financial accountability;
- **Chemical Handling and Usage Training Records:** Anyone who participates in any processes involving the handling and/or usage of Chemicals should be trained to ensure food safety or quality is not jeopardised through their participation.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Chemical Control Monitoring requirements in relation to their items.

You may wish to visit the Chemical Control Templates section of haccp.com for examples of Chemical Control documentation, record, and resource formats commonly applied within food safety and quality systems.

Chemical Control Monitoring Key Points

- Monitoring provides real-time confirmation and evidence that your risk-based FS&Q Controls are effectively implemented;
- Chemical Control programs must be monitored to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Monitoring of Chemical Control must be facilitated as per relevant documented Policies, Procedures, and Work Instructions;
- Nominated monitoring records for Chemical Control must be maintained as per relevant documented Policies, Procedures, and Work Instructions;
- A properly monitored Chemical Control program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly monitored Chemical Control program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Corrective Action and Preventative Action

To apply "real time" interventions to documented monitoring limits.

Corrective Action

Corrective Action: Corrective action is mandatory action to be taken when a deviation to the Quality System occurs, particularly with a Critical Control Point.

Preventative Action: At any step in the process where a hazard has been identified, preventative action must be put into place to prevent re-occurrence.

Corrective Action and Preventative Action are implemented to ensure that any identified non-conformance issues are documented, investigated, and rectified within appropriate timeframes. Corrective action is any action applied to regain control over a product, process, policy, or procedure that has been identified as being non-conforming or outside nominated limits of acceptability. Preventative action is any action applied to prevent any identified non-conformance from reoccurring.

The outcomes of corrective and preventative actions should result in regained process control after effective application. Specified corrective actions are commonly linked to the HACCP Plans and the food business certification process.

Below are Corrective Action and Preventative Action examples which may be associated with Chemical Control related non-conformance issues:

- Review of the Chemical Control policy;
- Review of Chemical Control development procedures;
- Review of Chemical Control implementation procedures and work instructions;
- Review of Chemical Control monitoring procedures;
- Review of Chemical Control corrective and preventative action procedures;
- Review of the Chemical Control verification schedule;
- Review of Chemical Control verification procedures;
- Review of the Chemical Control validation schedule;
- Review of Chemical Control validation procedures;
- Review of Chemical Control training procedures;
- Re-training in Chemical Control;
- Review of management review activities to include Chemical Control as an agenda item;
- Initiation of product hold procedures where safety or quality may be compromised;
- Initiation of a product recall or product recall procedures where investigations show that there is a substantial safety and or quality risk to the released product;
- Contacting stakeholders including customers regarding any confirmed or potential Chemical Control concerns involving their product.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Chemical Control Corrective Action requirements in relation to their items.

You may wish to visit the Corrective Action and Preventative Action section of haccp.com for examples of best practice applications for this food safety and quality system element.

Chemical Control Corrective Action and Preventative Action Key Points

- The implementation of Corrective Action and Preventative Action provides confidence that your FS&Q Program is effectively implemented and that FS&Q criteria are being met;
- Where deviations or variations are observed, Corrective Action and Preventative Actions must be facilitated to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Corrective Action and Preventative Action of Chemical Control must be facilitated as per relevant documented Policies, Procedures and Work Instructions;
- Records of Corrective Action and Preventative Action for Chemical Control must be maintained as per relevant documented Policies, Procedures and Work Instructions;
- Proper application of Corrective Action and Preventative Action for your Chemical Control program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- Poor application of Corrective Action and Preventative Action for your Chemical Control program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Verification

To review and confirm documented monitoring and corrective actions against documented parameters.

Verify

Verification: The act of reviewing, inspecting, testing, checking, auditing, or otherwise establishing and documenting whether items, processes, services, or documents conform to specified requirements.

Verification is the detailed review of all food safety and quality system elements to confirm that they are effectively developed, documented, implemented, monitored, and reviewed. All food safety and quality system elements, including documented policies, procedures, training, HACCP plans, and their operational applications must be verified on an ongoing scheduled basis. The verification process commonly includes a defined schedule for which

verification activities are required, how often they are conducted, who is responsible, and detailed documented procedures for each nominated verification activity.

The general goal of an established verification process is to ensure any systemic non-conformance issues are identified and rectified within an appropriate timeframe. When non-conformance issues are identified through the verification process, Corrective Actions and Preventative Actions should be implemented to ensure they do not impact the effectiveness of the food safety and quality system.

The following examples of verification activities may apply to Chemical Control:

- Review of the Chemical Control policy;
- Review of Chemical Control development procedures;
- Review of Chemical Control implementation procedures and work instructions;
- Review of Chemical Control monitoring procedures;
- Review of Chemical Control monitoring records;
- Review of Chemical Control corrective and preventative action procedures;
- Review of the Chemical Control verification schedule;
- Review of Chemical Control verification procedures;
- Review of the Chemical Control validation schedule;
- Review of Chemical Control validation procedures;
- Review of Chemical Control training procedures;
- Review of Chemical Control performance since the last review and historically;
- Analytical testing of product or process to ensure the effectiveness of Chemical Control. This process may be inclusive of analytical chemical residue testing for relevant chemicals;
- Inclusion of Chemical Control as an agenda item within the Management Review Process;
- Review of Chemical Control calibration outcomes, which may include assessments of chemical measuring or dosing equipment to ensure appropriate dilution ratios are maintained.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Chemical Control Verification requirements in relation to their items.

You may wish to visit the Verification Activities section of haccp.com for examples of best practice applications for this food safety and quality system element.

Chemical Control Verification Key Points

- Your verification program provides evidence that your FS&Q Controls have worked;
- Chemical Control programs must be verified to meet relevant Regulatory, Industry, and Customer standards and requirements;
- The verification of Chemical Control must be facilitated per relevant documented Policies, Procedures and Work Instructions;
- Nominated verification records for Chemical Control must be maintained per relevant documented Policies, Procedures and Work Instructions;
- A properly verified Chemical Control program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly verified Chemical Control program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Validation

To confirm the documented monitoring or procedural limits.

Validate

Validation: The process of gathering evidence to provide a scientific basis for the documented act of demonstrating that a procedure, process, and activity will consistently lead to the expected results. It often includes the qualification of systems and equipment.

Validation is the provision of evidence to support the limits of control or acceptability for food safety or quality parameters nominated within systemic elements. Limits of control or acceptability are commonly included within documented food safety and quality system elements such as procedures, HACCP Plans, and specifications.

Common sources of validation include regulatory and legislative standards, finished product specifications and customer requirements, industry codes of practice and guidelines, verified and validated research, historical product, and process control outcomes, and analytical testing.

The general goal of an established validation process is to ensure any inappropriate limits of control or acceptability are identified and rectified within an appropriate timeframe. When non-conformances are identified through the validation process, Corrective Actions and Preventative Actions should be implemented to ensure they do not impact the effectiveness of the food safety and quality system.

Validation activities are commonly defined within the verification schedules and procedures of established food safety and quality management systems.

The following examples may apply to validation of the limits of control or acceptability for Chemical Control:

- Confirmation of nominated food safety and food quality control limits for Chemical Control. These limits may apply to regulatory, industry, customer, or finished product specifications;
- Confirmation of analytical testing methods being used to confirm the effectiveness of Chemical Control and ensure the accuracy of outcomes;
- Confirmation of suitable and acceptable methods for the handling and usage of chemicals;
- Confirmation of suitable and acceptable dilution ratios for chemicals;
- Confirmation of food-grade status for chemicals used within exposed product or processing areas;
- Confirmation of licensing requirements for the handling, storage, and usage of chemicals.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Chemical Control Validation requirements in relation to their items.

You may wish to visit the Validation Activities section of haccp.com for examples of best practice applications for this food safety and quality system element.

Chemical Control Validation Key Points

- Your validation program provides evidence that your FS&Q Controls will work;
- Chemical Control programs must be validated to meet relevant Regulatory, Industry, and Customer standards and requirements;
- The validation of Chemical Control must be facilitated as per relevant documented Policies, Procedures and Work Instructions;
- Nominated validation records and supporting documentation for Chemical Control must be maintained as per relevant documented Policies, Procedures and Work Instructions;
- A properly validated Chemical Control program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly validated Chemical Control program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Training, Competency and Resources

Skills, knowledge and competency requirements to facilitate development, documentation, implementation, monitoring, corrective action, verification and validation of every Food Safety and Quality System Element.

Skills and Knowledge

Skills and Knowledge: Skills and knowledge are attributes of human interactions commonly linked to competency within any specific job-related task.

Training and competency requirements for Chemical Control must be ongoing, including regularly scheduled reviews to ensure the effectiveness of training and competency outcomes.

Team members who have defined responsibilities regarding Chemical Control should have knowledge including:

- Basic Chemical Control requirements;
- Positive outcomes of Chemical Control;
- Negative outcomes of a lack of Chemical Control;
- Current Chemical Control procedures, methods, and techniques;
- General operational, corporate, and social awareness regarding Chemical Control;
- Regulatory, industry, and customer requirements regarding Chemical Control.

Team members who have defined responsibilities regarding Chemical Control should have skills including:

- Competency regarding basic Chemical Control;
- Effective application of current Chemical Control procedures, methods, and techniques;
- The basic development, documentation, and implementation of HACCP and Prerequisite Programs within the food industry sector.

Team members who have defined responsibilities regarding Chemical Control should have access to resources including:

- Chemical Control training;
- Chemical Control associations and events;
- Regulatory standards, industry and customer information and updates regarding Chemical Control;
- Incidents within the food industry sector regarding Chemical Control;
- Commitment to Chemical Control by senior management;
- Suitably qualified food industry professionals with verified experience in Chemical Control;
- Effective communication systems including email, internet, and phone through which Chemical Control information can be sent and received within suitable timeframes.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Chemical Control Training, Competency, and Resources requirements in relation to their items.

You may wish to visit the Training, Competency, and Resources section of haccp.com for examples of best practice applications for this food safety and quality system element.

Chemical Control Training, Skills, and Knowledge Key Points

- Your Training, Skills, and Knowledge program ensures all participating personnel, visitors, and contractors have the required skills and knowledge to effectively facilitate the requirements of your FS&Q Program;
- Training, Skills and Knowledge programs for Chemical Control must be facilitated to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Training, Skills and Knowledge programs for Chemical Control must be facilitated as per relevant documented Policies, Procedures, and Work Instructions;
- Training, Skills and Knowledge records for Chemical Control must be maintained as per relevant documented Policies, Procedures, and Work Instructions;
- Properly applied Training, Skills, and Knowledge programs for Chemical Control will provide a strong framework

for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;

- Poorly applied Training, Skills, and Knowledge programs for Chemical Control will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.



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