



GLOBAL FOOD SAFETY STANDARD DIVISION AIRLINECATERING

Version 10, June 2021

Food Safety Policy

The DO & CO Gourmet kitchens form a full-coverage global network that allows us to provide a unique quality product for our customer's most vital airports. This requires optimal logistics with the shortest possible distances involved.

Top quality in all products and service areas is one value that primarily characterizes the DO & CO brand. Out of a sense of responsibility for its customers and for society, DO & CO also sets the highest quality standards in all production areas. We consider it a solemn duty to comply consistently with the strictest hygiene regulations.

Foods prepared in DO & CO Airline Catering units must be safe. This is legal requirement as well as the basic expectancy of our customers. Unsafe food production is not only a risk for our guests and customers but also harmful for our company.

The DO & CO Food Safety Standard is an effective food safety tool applicable to all DO & CO Airline Catering units. Safe Food preparation and service in DO & CO Airline Catering units is based on how successful we comply with the rules and regulations explained in this standard.

The DO & CO Food Safety Standard is based on:

- The principles of the Hazard Analysis Critical Control Point (HACCP) approach to food safety and Good Hygiene Practice.
- QSAI Catering Quality Assurance Programme, Version 4
- IFSA/IFCA/AEA/WHO World Food Safety Guidelines, Version 3
- Where possible and expedient legal requirements were included. I.e., the European Food Act (Regulation (EG) No 178/2002) and FDA Guideline Documents.

The DO & CO Food Safety Information- and Training program ensure that all DO & CO staff receive all information relevant to health, hygiene and food safety.

With the implementation of this internal regulations, DO & CO provide airline passengers safe food with best quality and highest compliance to Airline requirements.

Attila Dogudan

(Chairman of the Management Board)

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1. Introduction

“DO & CO Global Food Safety Standard - Division Airline Catering” is based on HACCP concept according the 7 principles of Codex Alimentarius CAC/RCP 1-1969, Rev.4-2003. In such a system all hazards during food flow are identified and are controlled at defined CCP's (Critical Control Points) and SOPs (Standard Operation Procedure).

In this standard, the control of all relevant hazards through defined CCP's and SOPs are explained. Safe food preparation and service in airline catering can only be achieved by careful control of hazards through CCP s and SOPs. By control is understood doing monitoring and then taking corrective actions when control indicates any deviation.

A HACCP based food safety system requires recording and documentation. Such records and documentation inform us about the performance of the system implementation as well as requested by legal department and customers.

Biological hazards are the most important ones effecting airline catering food production system. Therefore, although the system includes control of all foods, the target food group is the ready-to-eat high risk foods.

DO & CO Airline Catering Standard states the Food Safety rules and regulations to be applied in all DO & CO units. However, at any point where national regulations are stricter than what is stated in the standard the national rules are valid.

2. Scope

This standard covers all food safety related issues which exist in an airline catering operation.

3. Hazard Analysis and Risk Assessment

A generic food flow diagram for a flight caterer is shown below.

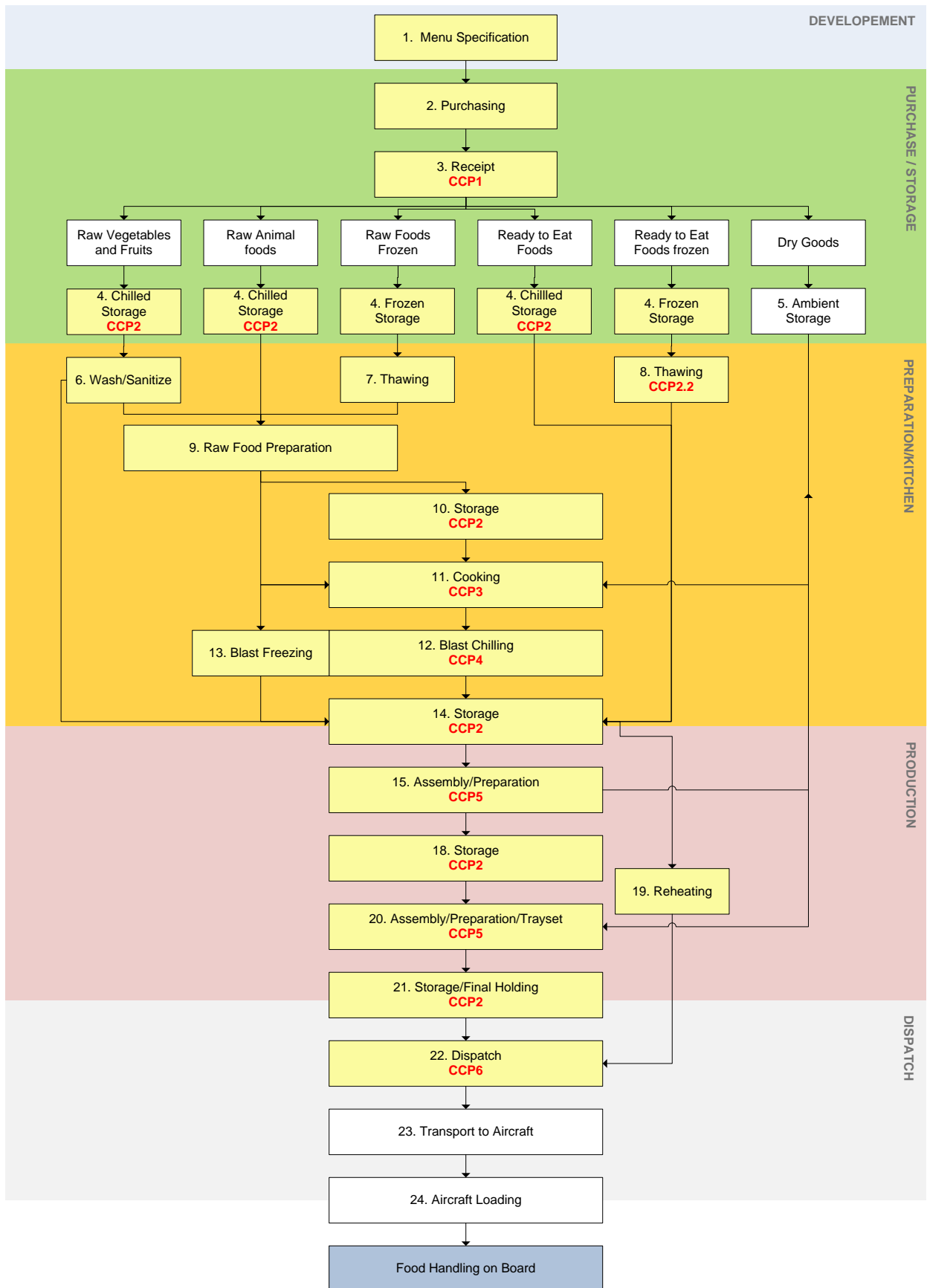
Hazard analysis and risk assessment has to be done at each step of this food flow diagram.

Once the hazards are identified for each process step, determination of whether the hazard is significant or not should occur through the evaluation of each hazard severity and likelihood of occurrence.

A CCP (Critical Control Point) is a step, location, or procedure at which control can be applied and which is essential to prevent, eliminate or reduce a food safety hazard to an acceptable level.

SOP (Standard Operation Procedures) includes a variety of preventive food safety procedures.

FLOWCHART



DO & CO RISK ASSESSMENT:
Please see details in the attachment.

4. Critical Control Points (CCP's)

CCP 1	Food Receiving
CCP 2	Food Storage Temperature
CCP 2.2	Food Temperature during Thawing
CCP 3	Food Cooking
CCP 3	Food Chilling
CCP 5	Food Temperature/Time during Handling
CCP 6	Food temperature at Dispatch

CCP 1 Food Receiving

Purpose	Control of microbial growth during transportation
Scope	Refrigerated frozen and warm purchased foods
Procedure	
Critical Limit	<ol style="list-style-type: none"> 1. Temperature of purchased refrigerated foods shall be 5°C (41°F) or less at receiving. (Fish on ice, minced meat or prepared raw meat not more than 4°C/39°F) 2. Purchased frozen foods shall be hard frozen and without signs of previous thawing at receiving. 3. Temperature of hot food shall be min 60°C (140°F) at receiving.
Monitoring	<ol style="list-style-type: none"> 1. Food temperature is monitored by infrared thermometer or Probe thermometer. 2. Food temperature is assessed by manual testing / visual observation of food surface 3. Food temperature is monitored by infrared thermometer. <p>(Note: Quality checks on received products are described in SOP 4)</p>
Corrective action	<ol style="list-style-type: none"> 1 If surface temperature exceeds 5° C (41°F) reject product 2 Frozen food displaying soft surface should be rejected 3 If surface temperature is less than 60°C (140°F) reject product.
Frequency of monitoring	<p>Batches of high-risk ready-to-eat foods shall be checked</p> <p>Low-risk foods shall be checked at random</p> <p>Batch: A delivery (one or several foods) from a supplier. Control may be done by checking several high-risk foods and recording the highest temperature.</p>
Related document	Checklist CCP 1
Responsible for monitoring	Receiving and store staff
Responsible for corrective action	Receiving supervisor

CCP 2 Food Storage Temperature

Purpose	Control of microbial growth during storage
Scope	Refrigerators for storage of high-risk foods
Procedure	
Critical Limit	Target Storage temperature of refrigerated high-risk foods is 4°C (39°F). Temperature must not exceed 8°C (46°F). For storage of raw fish or meat temperature must not exceed 4°C (39°F).
Monitoring	1. Monitoring of refrigeration temperature.
Corrective action	1.1 If refrigeration temperature exceeds 8°C (46°F), check if there is a technical error and check food temperature. 1.2 If food temperature exceeds 5°C (41°F) check quality of food and there is an technical error transfer to another refrigerator (otherwise check if temperature is coming down)
Frequency of monitoring	At least twice per day
Related documents	Checklist CCP 2 Records must specify date and time of recorded temperature
Responsible for monitoring	Receiving, production, operation staff.
Responsible for corrective action	Department depending Department supervisors

CCP 2.2 Food Temperature During Thawing

Purpose	To prevent harmful microbial growth during thawing
Scope	Already To Eat frozen food which is thawed under refrigeration, in thaw boxes, under ambient temperature (below 21°C/70°F), in micro wave or under running cold water (not more than 21°C/70°F) *
Procedure	
Critical Limit	Food temperature must not exceed 8 °C (46°F), during the thawing process. Thawed products have to be used within 72 hours based on the start of thawing
Monitoring	Check food surface temperature, ambient temperature, water temperature, thawing box temperature and time at regular intervals during the thawing process.
Corrective action.	When food temperature approaches 8°C (46°F): transfer food to a normal refrigerator for completion of thawing <i>or</i> process food. If food temperature exceeds 8 °C (46°F) discard food. If thawed food is stored longer than 72 hours discard food.
Frequency of monitoring	Each batch of frozen ready-to-eat food being thawed outside refrigeration
Related documents	Checklist CCP 2.2
Responsible for monitoring	Production employees
Responsible for corrective action	Production supervisor

* Thawing methods differ according to national regulations

CCP 3 Food Cooking	
Purpose	To prevent survival of vegetative pathogens parasites and viruses
Scope	High-risk foods for in-house cooking
Procedure	
Critical Limit	<ol style="list-style-type: none"> 1. Raw poultry or food containing raw poultry shall be cooked to a core temperature of minimum 74°C (165°F) 2. Raw minced poultry, meat, fish and shellfish shall be cooked to a core temperature of minimum 74°C (165°F) 3. Stuffed poultry, meat, fish, shellfish or pasta and stuffing containing raw poultry, meat, fish or shellfish shall be cooked to a core temperature of minimum 74°C (165°F) 4. Liquid, <i>raw</i> eggs, pasta and products containing <i>raw</i> eggs or raw dairy, shall be cooked to a core temperature of minimum 74°C (165°F), except eggs for boiled, fried and poached eggs. 5. Meat, fish, shellfish and Crustacea other than the above shall be cooked to 65°C (149°F) core temperature. 6. Whole muscle beef, lamb, fish seared on all external surfaces to effect a cooked colour change (including steaks of lamb, beef, salmon) to a surface temperature of minimum 65°C (149°F). 7. Sauces, soups and stew to a temperature of minimum 74°C (165°F)..
Monitoring	<p>1-5: Check food core temperature upon completion of cooking by probe thermometer for at least 15 seconds.</p> <p>6: Check surface temperature with an infrared thermometer for at least 15 seconds.</p>
Corrective action	Re-cook to prescribed core temperature or discard food.
Preventive corrective action	Training
Frequency of monitoring	<p>Each batch of high-risk raw foods.</p> <p>Batch: A volume of a specific high-risk raw food being cooked under essentially the same conditions and at essentially the same time. The core temperature is taken at the greatest layer thickness of the batch.</p>
Related documents	Checklist CCP 3 /4
Responsible for monitoring	Chefs
Responsible for corrective action	Production supervisor

CCP 4 Food Chilling	
Purpose	Prevent microbial growth during chilling
Scope	In-house cooked high-risk foods including meat, fish, egg products, dairy products, cereals, vegetables, ...
Procedure	
Critical Limit*	<p>Food core temperature shall pass temperature interval of 60°C (140°F) - 21°C (70°F) within 2 hours 21°C (70°F) – 5°C (41°F) within additional 4 hours For DO & CO Europe: 60°C (140°F) -5°C (41°F) within 2 hours or local regulations if stricter Rice, Pasta, Vegetable: rinsing under cold water is allowed.</p>
Monitoring	Check core food temperature after two hours and at the end of chilling process
Corrective action	Discard food of non-compliant food items.
Frequency of monitoring	<p>Each high-risk food batches. Temperatures to be taken at the centre or thickest part of the joint.</p> <p>Batch: A volume of a cooked high-risk food being chilled under essentially the same conditions and at essentially the same time.</p>
Related documents	Checklist CCP 3/4
Responsible for monitoring	Chefs
Responsible for corrective action	Production supervisor

CCP 5 Food Temperature / Time During Handling

Purpose	To prevent microbial growth during handling
Scope	High-risk ready-to-eat foods
Procedure	
Critical Limit	<p><u>1. Ambient temperature > 21°C (70°F)</u> Temperature of chilled high-risk ready-to-eat food must not exceed 15°C (59°F) during handling <i>and</i> Exposure time to ambient temperature of chilled high-risk ready-to-eat food must not exceed 45 minutes</p> <p><u>2. Ambient temperature > 15°C (59°F) < 21°C (70°F)</u> Exposure time to ambient temperature of chilled high-risk ready-to-eat food must not exceed 45 minutes</p> <p><u>3. Ambient temperature ≤ 15°C (59°F)</u> Exposure time to ambient temperature of chilled high-risk ready-to-eat food must not exceed 90 minutes. Room temperature has to be recorded twice daily.</p>
Monitoring	<p>1. Check food temperature during/at end of process <i>and</i> check exposure time.</p> <p>2. Check exposure time at the end of the process. Please note that the ambient temperature has to be recorded twice daily.</p> <p>3. Check exposure time at the end of the process. Please note that the ambient temperature has to be recorded twice daily.</p>
Corrective action	If time or temperature limits exceeded discard food
Preventive corrective action	Review handling process Training
Frequency of monitoring	Every batch of high-risk food and every flight / class. Batch: A volume of high-risk food being prepared (e.g. sliced, minced, mixed etc) prior to meal portioning. A volume of meals of the same type for a group of flights, a flight or a class being portioned, packed or trayset under essentially the same conditions and at essentially the same time
Related documents	Checklist CCP 5
Responsible for monitoring	Production staff
Responsible for corrective action	Production supervisor

CCP 6 Food Temperature at Dispatch

Purpose	To prevent unsafe microbial growth in meals during dispatch and transport to aircraft.
Scope	1. Chilled Potentially Hazardous Food (meals, desserts etc) delivered to aircraft.
Procedure	
Critical limit	Food temperature must not exceed 4°C (40°F) at time of dispatch or lower if required by law or by customer. Food temperature must be max.8°C (46°F) for chilled meals respectively at the time of loading on board.
Monitoring	Food temperature checked in the chiller at the time before delivery. Food temperature checked on the aircraft if required by customer. Time within food is removed from the refrigeration during transport to the airport must not exceed three hours.
Corrective action	If food temperature is above Critical limit restore under refrigeration or add dry ice and report deviation to responsible manager. If food temperature is above 8°C (46°F) at the time of loading on board report deviation to responsible manager. Add dry ice.
Frequency of monitoring	Every flight; one trolley item, one oven item for each class and service
Related documents	Checklist CCP 6 (Note: document name of checked food item)
Responsible for monitoring	Dispatch staff
Responsible for corrective action	Dispatch supervisor

5. Production Process – Standard Operation Procedures (SOP)

SOP 1	Hazardous Meal Ingredient Control
SOP 2	Control of Allergy-related Special meals
SOP 3	Food Supplier Approval
SOP 4	Receiving Control
SOP 5	Food Storage
SOP 6	Food Thawing
SOP 7	Washing and Disinfection of Raw Vegetables and Fruits
SOP 8	Food Handling
SOP 9	Personal Hygiene
SOP 10	Cleaning and Disinfection
SOP 11	Physical Hazards
SOP 12	Chemical Hazards
SOP 13	Food Safety Training
SOP 14	Validation of Measuring Equipment
SOP 15	Preventive Maintenance
SOP 16	Pest Control
SOP 17	Water Treatment
SOP 18	Traceability, Product Recall and Legal Labelling of Food
SOP 19	Facility Requirements
SOP 20	Delay Policy

SOP 1 Hazardous Meal Ingredient Control

Purpose

The aim of meal ingredient control procedures is to prevent use of hazardous meal ingredients which may constitute a microbiological or chemical hazard.

Scope

Control of hazardous meal ingredients.

Procedure

The following list contains item that by nature may constitute a food safety risk and may have been previously implicated in foodborne illness outbreaks. Therefore, it is recommended that these items not be included in airline menus.

At each menu presentation, menus shall be checked using SOP 1 checklist secure that the ingredients above are not part of DO&CO meals. If any customer insists on having a restricted meal component the customer shall be informed in writing of the safety risk.

RESTRICTED MEAL COMPONENTS

Restricted meal component	Hazard
Raw / undercooked poultry	<i>Salmonella, Campylobacter</i>
Raw / undercooked eggs *	<i>Salmonella, Campylobacter</i>
Raw / undercooked meat (except whole muscle beef and lamb)	<i>E.coli O157 (EHEC), Salmonella, parasites</i>
Uncooked Goose Liver	<i>Salmonella, Campylobacter</i>
Indestine	<i>E.coli O157 (EHEC), Salmonella, parasites</i>
Raw fish and shellfish	<i>Vibrio parahaemolyticus, parasites</i>
Unpasteurised milk and cream	<i>Salmonella, Staph. aureus,</i>
Soft cheeses from raw milk	<i>Salmonella, Staph. Aureus, Listeria</i>
Mayonnaise made from raw eggs	<i>Salmonella</i>
Raw vegetable sprouts or unwashed herbs	<i>Salmonella, Listeria,</i>
Raw / undercooked dried beans	Lectins
Unpasteurised fruit - and vegetable juices with a pH above 4.6	Pathogens deriving from possible faecal contamination, e.g. enteropathogenic <i>E.coli</i>
Raw desiccated coconut	<i>Salmonella</i>
Any toxic food	<i>Several types of fish from tropical sea</i>
Food under recall or under investigations regarding food poisoning	

* Exceptions:

Poached eggs are considered safe, provided that cooking coagulates entire eggs white and outer eggs yolk.

Raw, undamaged shell eggs may be delivered to customers for preparation on board.

Responsible:

Food Development

Corporate:

Quality Assurance

SOP 2 Control of Allergy-related Special Meals

Purpose

Consumers who are allergic or intolerant to specific substances in specific foods may order allergy – related special meals (SPML) for the flight. These substances are generally referred to as food allergens. When such a request received it must be ensured that the order is fulfilled with no mistake.

Scope

Control of allergens in special meals (SPML)

Definitions

An allergen is a substance in our environment (e.g., food ingredients, food additives) which by contact may trigger an adverse response by the human immune system. In the European Food Law Allergens are listed as below:

Allergens and products thereof:

- Cereals containing Gluten (Wheat, rye, barley oats, spelt, kamut or their hybrids strains)
- Crustaceans
- Eggs
- Fish
- Peanuts
- Soybean
- Milk (including Lactose)
- Nuts i.e., Almond, Hazelnut, Walnut, Cashew, Pecan nut, Brazil nut, Pistachio nut, Macadamia Nut, Queensland nut
- Celery
- Mustard
- Sesame seeds
- Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/kg expressed in SO₂
- Lupine
- Molluscs

By allergy-related SPML is understood

- No-nuts SPML
- No-dairy SPML
- No-eggs SPML
- No-soy SPML
- No-wheat SPML
- No-shellfish/fish SPML
- No-gluten (gluten free) SPML
- No-lactose SPML

Procedure

SPECIAL MEAL CATEGORIES

Food Allergens and Intolerance Agents		Special meal Categories
Peanuts		No-nuts SPML
Tree nuts		
Milk/Lactose		No-dairy SPML
Soybeans		No-soy SPML
Wheat (wheat protein)		No-wheat SPML (not the same as Gluten-free SPML!)
Eggs		No-eggs SPML
Crustaceans and molluscs)		No-shellfish SPML
Fish		No-fish SPML
Celery		No celery SPML
Mustard		No mustard SPML
Sulphur dioxide and sulphites		No sulphur dioxide & SPML
Sesame seeds	No sesame seeds SPML	
Lactose (milk sugar)	Common food intolerance agents	No-lactose SPML
Gluten		No-gluten SPML

Above agents are the target group of SOP 2 Procedure for Control of Allergy-related Special Meals.

Allergy-related SPML may be purchased ready-to-eat or they may be produced and assembled in-house.

Purchased allergy related SPML

Preventive measures:

Supplier (manufacturer) shall be approved by Regional Hygiene Manager prior to initiation of purchase.

This requirement of approval by DO & CO does not include airline-nominated suppliers.

Responsibility for controlling the finished allergen related SPML including possible tray_items shall be specified.

In-house produced/assembled allergy related SPML

Preventive measures:

Each type of allergy-related SPML shall be specified and documented in a meal specification, including tray-items.

Responsibility for production/assembly of allergen related SPML shall be specified.

Responsibility for controlling the finished allergen related SPML (including possible tray items) shall be specified.

Production equipment, such as food containers, slicers, cooking equipment, hand utensils etc, shall be clean at time of preparation of the SPML ingredients.

Related Documents:

- Product specification SPML
- Checklist SPML Production
- Checklist SPML Trayset

Responsible:

Food Production

Corporate:

Purchaser

Dispatch

Quality Assurance

SOP 3 Food Supplier Approval

Purpose

To ensure safety of purchased foods by use of procedures which satisfy customer expectations as well as possible relevant food legislation.

Scope

This procedure applies the approval of all suppliers

Procedure

Type of Audits:

Approval may be performed by:

- An on-site audit, which includes a system audit as well as a physical inspection of premises. Audit shall be conducted by use of supplier Approval checklist.
- A system audit (assessment of supplier's food safety control, based on supplier's description and documentation. A questionnaire or survey is used for this purpose. Certificates of accreditation issued by a recognized governmental, regularity or industry organization can also be considered for approval). The base is the "SOP3 - DO & CO Supplier Questionnaire".

On site audits are recommended for potential suppliers of ready-to-eat high risk foods.

System audits are suitable for approval of suppliers of low-risk foods.

Frequency of on site and system audit shall be based on the relative risk of the product and the relative risk of the supplier.

Supplier Rating

Based on site and system audits suppliers shall be specified as.

- Approved
- Conditionally approved
- Non-approved

Conditionally approved suppliers shall be re-audited within a reasonable time for final clarification of approval status.

Approval Procedure Food Supplier

- All suppliers have to be categorized according to the product risk and the business volume. Certified supplier may be accepted without further Onsite Audits.
- Each potential Food Supplier has to fill-out the SOP3 Supplier Questionnaire (System Audit)
- Each potential High Risk Food Supplier shall be audited by the QA Department within one month after first delivery
- Each DO & CO unit shall establish a list of Top 50 Food Supplier sorted according to the actual sales volume. This list should be maintained by the local purchaser and actualized in the fourth quarter of the year (October – December). This list will be sent to the regional QA Manager (e.g., for Austria foodsafetyAT@doco.com)
- All listed Food Supplier obtain the "SOP3 – Supplier Questionnaire" on annual base. The questionnaire has to be sent to the supplier and controlled by the local buyer/purchaser. The

form has to be returned signed and stamped within fourteen days. The completed forms have to be sent to the regional QA Manager. The regional QA Manager has to evaluate the questionnaires and inform the purchaser about the result.

- The regional QA Manager has to plan and perform Onsite Audits for all High-Risk Food Supplier which are listed. Furthermore, the QA Manager and the Purchaser can decide to control food supplier which are not Top 50 listed.
- Approval audits are not feasible for wholesalers and distributors. Approval of foods purchased by them shall be done by assessment of product specification.

Product Specification

Detailed specifications of the purchased food should be required from all DO & CO food supplier and all purchased products. For getting consistent information the DO & CO Specification Form should be sent to the supplier. The supplier has to provide all relevant information according to the Specification Form.

The Specification form should be sent by the buyer/purchaser for all purchased food. The form should be returned within 14 days and sent to e.g. foodsafetyAT@doco.com.

The specifications are maintained by the QA Team.

Use of GM (Genetically Modified Foods)

Whenever GM free meals are requested by a customer, following procedure shall apply.

For purchased foods, supplier shall be asked to guarantee that the food is free of GM organism. The answer shall be documented.

Label of food shall be checked. This applies to purchased foods in areas where local food legislation requires labelling of possible GM ingredients.

Possible soy and corn (maize) and tomato ingredients shall be checked for GM ingredients.

Related Documents:

- Supplier Audit Checklist
- Supplier Questionnaire
- List of Top 50 Supplier
- Product specification
- GM Policy

Responsible: Purchaser

Corporate: Quality Assurance

SOP 4 Receiving Control

Purpose

To ensure that a procedure is applied to verify the safety and quality of the purchased foods at the time of receiving.

Scope

All purchased foods.

Procedure

The followings will be verified for each delivery at the time of receiving:

- Temperature for refrigerated products (see CCP 1)
- Surface of frozen products (see CCP 1)
- Weight/Size
- Packaging
- Labelling
- Organoleptic (sensoric, visual check, free of visual contamination, insects etc.)
- Cleanliness/Temperature of transport vehicle

Criteria:

- Temperature of refrigerated and frozen products → see CCP1
- Weight/Size according to specification
- Packaging materials: clean, undamaged, no wooden cases, tins not be blown, deformed or exhibit signs of corrosion, open food (except fruits/vegetables) is not accepted.
- Labelling: Purchased packed food shall be labelled with expiry date (sell by, use by, etc.), and preferably also with production (processing/packaging) date. Each item has to be checked. Expired foods shall be rejected. The rejection has to be recorded. Open food (fruits/vegetables) has to be labelled with the delivery date by the receiver
- Organoleptic: appearance, odour, flavour has to be checked and be rejected in case of any deviation.
- Inside and outside of supplier truck shall be clean. Inside Temperature for cooled products not more than 10°C, for frozen products not more than -15°C, for ambient delivery not more than 18°C. If temperatures are higher, check food temperature and follow CCP 1.
- Food cartons in the truck shall be on pallets.

Related Documents

- Checklist CCP 1

Responsible: Storage Staff,
Receiver

Corporate:

SOP 5 Food Storage and Date Marking

Purpose

To ensure that food is not open to biological, chemical and physical hazards by securing the followings.

- Temperature control of freezers
- Segregation of processed foods from unclean foods and surfaces
- Protecting food items against air borne contamination
- Date marking and rotation of foods.

Scope

Storage of raw and ready-to-eat foods in refrigerators freezers and dry stores.

Procedure

1. Temperature control of freezers

Temperature of all freezer units has to be maintained below -18°C (0°F).

The temperature is monitored twice daily by

- Internal thermometer probes
- Manual thermometer probes or
- Continuous computerized temperature monitoring

Date, time and unit identification has to be recorded.

If temperature exceeds -18°C (0°F) and foods show any sign of thawing corrective action has to be taken:

- If food surface temperature exceeds -15°C (5°F) transfer all food in a freezer which shows acceptable temperature limits
- If food generally don't show hard surfaces immediate use is necessary.

2. Segregation of processed foods

Segregation Requirements

By segregation is understood prevention of contamination of ready-to-eat food from unclean food or equipment by:

Level I: Wall or partition wall / partition fence (separate cold rooms / cold room sections).

Level II: Horizontal distance within same cold room.

Segregation in Storage of Raw Foods

Unclean raw foods of vegetable origin shall be segregated from raw foods of animal origin by level I or II.

Raw foods of different animal origin shall be segregated by levels I, or II depending on volumes of individual raw food groups.

Segregation in Storage of Raw Foods from Ready-to-Eat Foods

- As a general rule ready-to-eat foods shall be separated from raw foods of animal origin by Level I segregation.
Level II segregation may however be accepted when:

- volume of raw food is small
- Segregation is clearly marked by labels, painted lines etc.
- Outer packaging material is allowed in raw product refrigerators (cardboard, external plastic boxes, etc) used for storage of foods in unbroken supplier packaging and refrigerators used for storage of purchased, unwashed produce.
- All outer packaging material has to be removed before being delivered to the preparation- and production areas and -refrigerators.
- Outer packaging material may not be present in other refrigerators.
- Wooden pallets are not allowed in the refrigerators and freezers and only in dry stores where there is a risk of contamination a cardboard layer must be inserted.

3. Protecting Food Items against Air-Borne Contamination

All food items in Food Storage Areas shall always be appropriately covered so as to prevent contamination from chemical/physical hazards and the transfer of bacteria, odour and taste from other foods.

- All food bins, trays, containers, baskets or all other self-contained receptacles are always completely covered.
- Appropriate materials for covering shall include plastic film, aluminium foil and plastic covers.
- Physical / chemical hazards include any substance (liquid or solid) originating from ceilings, refrigerators/freezers, condensers, ventilators, faulty pipes, on-going construction, renovation, etc. shall be prevented.
- The top food shelf in the blast chiller has to be covered to avoid contamination with condensing water.

4. Date Marking and Rotation of Foods

- All foods shall be date marked at all times throughout Food Handling and use of expired foods shall be prevented.
- All foods shall be date marked at each of the following times.
 - Once foods are placed in Food Storage Areas with receiving date or the expiry date or shelf life. Recommended is to label all delivered product with the receiving date.
 - Once frozen foods are removed from the freezer for thawing with the date of removal from the freezer,
 - Once pre-packaged foods are opened with the date the package was opened (for matured products like prosciutto, hard cheese, ... additionally the shelf-life date),
 - Once foods are processed,
 - Once foods are portioned,
 - Once foods are tray set-up,
 - Once foods are ready for dispatch to the airline with the flight date or colour code,
 - Once food is put in the freezer it has to be marked with the date of freezing
- Food items shall be date marked either by using easily visible date codes or colour codes. All food handling employees must appropriately understand date coding or colour coding procedure
- FIFO (first in first out) system shall be consistently used to ensure that the oldest stock is always used first.
-

Time control

Cold ready to-eat potentially hazardous food items: 48 hours, first handling to consumption (incl. max 24hrs as assembled item)

Hot food items: 72 hours from cooking to consumption (incl. max 24hrs as assembled item)

Re-vacuumed food (sausages, cheese...) gets an additional shelf life of 48 hours.

Outdated Food items shall be discarded and not be served to customers. If they are not discarded on the spot, they shall be clearly segregated from other foods with a “do not use” or “to be discarded” label.

In house frozen foods shall be kept at -18°C (0°F) for max 3 months.

Related Documents

- Checklist SOP 5

Responsible:

Storage Staff
Production Staff
Dispatch

Corporate:

SOP 6 Food Thawing

Purpose

To ensure that growth of pathogenic microorganisms is controlled and ready-to-eat foods are not contaminated during food thawing

Scope

Thawing of frozen raw foods of animal origin and frozen ready-to-eat foods.

Procedure

Segregation between raw and ready-to-eat food shall be maintained during thawing.

Following appropriate thawing methods shall be used.

- under refrigeration (thawing room, cooling cell, ...)
- at ambient temperature
- In cold water
- kitchen has to follow national law (for example thawing at ambient temperature in Austria not allowed).

Thawing of raw foods shall preferably take place in such a way that food surface temperature does not exceed 8°C (46°F) during thawing.

- Thawing of high – risk ready-to-eat food is critical to safety. Thawing of ready-to-eat foods shall take place in such a way that food temperature does not exceed 5°C (41°F) throughout thawing process. When thawing of ready-to-eat foods takes place outside refrigeration (ambient, cold water etc), food temperature as well as time of exposure to outside refrigeration conditions shall be controlled and documented according to CCP 2.2.

Thawing in cold water necessitates that product be packed in water-tight packaging.

Once thawing is completed food shall either be immediately used or transferred to a refrigeration unit.

Thawed food shall not be refrozen.

Foods for thawing shall be labelled with appropriate date marking (label shall indicate the day it was removed from the freezer)

Time of thawing depends on product size and volume, thawing method and temperature. In general, raw foods shall be heat treated or served within 72 hours from time of started thawing.

All thawing methods except thawing in the chiller needs to be recorded.

Related Documents

- Checklist CCP 2.2

Responsible: Production Staff

Corporate:

SOP 7 Washing and Disinfection of Raw Vegetables and Fruits

Purpose

To ensure safety and cleanliness of raw vegetables and fruits

Scope

Raw vegetables and fruit likely of being contaminated with foreign bodies, insects and soil shall be washed prior to portioning and delivery.

Raw vegetables and fruit likely of being contaminated with harmful microorganisms (organically grown) shall be disinfected in addition to washing.

Procedure

1. Cleaning of vegetables and fruits

Raw purchased vegetables and fruits shall undergo the following steps of cleaning prior to use in airline meals:

- Preparation (removal of damaged parts, major foreign bodies, separation of leaves etc.)
- Washing in water of potable water quality
- Inspect to verify cleanliness

2. Decontamination of vegetables, lettuce, fresh herbs and fruits for raw consumption

The requirement of disinfection depends on water quality and the growing method of the product

Raw purchased vegetables grown by use of organic fertilizer (nightsoil, sewage) shall undergo the following steps of cleaning prior to use in airline meals:

- Preparation (removal of damaged parts, major foreign bodies, separation of leaves etc.)
- Wash / disinfection in a solution of a chemical disinfectant of appropriate type and concentration. Disinfectant chemical must be approved for use on food.
- If chlorine is used the concentration shall be between 50-100 ppm. Exposure time shall be 1 – 5 minutes.
- For all other chemicals, concentration and exposure time must be as per manufacturer's specifications.
- Legal requirements have to be met
- Effectiveness of the sanitizer has to be checked – Results has to be documented.

Related Documents

- Checklist SOP 7 – Disinfection Vegetables/Fruits

Responsible: Production Staff

Corporate:

SOP 8 Food Handling

Purpose

Food shall be handled in such a way that:

- Unsafe microbiological, physical or chemical food contamination from food handlers, food handling equipment and environment is prevented.
- Unsafe microbiological growth is prevented.

Scope

Handling of raw foods of animal origin, raw foods of vegetable origin and ready-to-eat foods.

Definitions

By segregation is understood prevention of contamination of ready-to-eat food from unclean food or equipment by:

- Level I: Designated handling areas, separated by walls or partition walls, for raw foods of animal origin and raw foods of vegetable origin respectively.
- Level II: Designated equipment within same handling area (designated worktables, handling utensils (e.g. hand utensils, cutting boards) and machines (e.g. slicers, mincers, mixers).

Procedure

1. Prevention of Microbial Contamination of Ready-to-Eat Foods from Raw Food

Worktables for preparation and handling of raw foods of animal origin must not be used for preparation or handling of raw foods of vegetable origin or ready-to-eat foods, unless a documented procedure of cleaning and disinfection of machine after preparing raw foods is in place.

Work tables, sinks for preparation and handling of raw foods of vegetable origin must not be used for preparation or handling of raw foods of animal origin or ready-to-eat foods, unless a documented procedure of cleaning and disinfection of machine after preparing raw foods is in place.

Cutting boards for preparation and handling of raw foods of animal origin shall be identified by specific colour or mark and must not be used for handling of other foods.

Cutting boards for preparation and handling of raw foods of vegetable origin shall be identified by specific colour or mark and must not be used for handling of other foods.

Ready to use items (e.g., washed/sanitized Vegetables, heat treated items of animal origin, ready to eat food (cheese, ham etc.) shall only be handled on white cutting boards.

Knives and other handling utensils must be cleaned and/or disinfected after each handling job.

Individual food preparation machines such as mincers, mixers, slicers should be designated for raw or ready-to-eat foods respectively.

Individual machines may be used for ready-to-eating as well as raw foods only when a documented procedure of cleaning and disinfection of machine after preparing raw foods is in place.

Level of segregation shall be determined by factors such as:

- Volume of raw foods of vegetable origin
- Volume of raw foods of animal origin
- Available space of food handling areas

2. Prevention of Contamination of Ready-to-Eat Foods from Food Handlers

Food handlers shall comply with procedures of SOP 9 Personal hygiene procedures.

Food handlers shall be trained in food safety issues relevant to their job as indicated by training survey of SOP 13 Food Safety Training procedure.

3. Prevention of Microbiological Contamination of Ready-to-Eat Foods from Food Handling Equipment

Food handling equipment shall be cleaned and disinfected after each use and thereafter re-used or stored clean and dry as described in SOP 10 Cleaning procedures.

Disinfection of food handling utensils like knives may be performed by:

- Thermal disinfection in machine
- Pre-cleaning and soaking for a few minutes in a chemical disinfectant solution (Quaternary ammonium compound, Iodophor or Chlorine compound) of appropriate strength

Manual wipe-off by an alcohol-based disinfectant

4. Prevention of Microbiological Contamination from Environment

Food handling environment shall be maintained and kept clean in order to prevent unsafe chemical, physical and microbiological contamination from the food handling environment.

Outer packaging material must not enter food handling areas.

Raw foods for subsequent cooking should be prepared/handled in such a way that excessive microbial growth is prevented. Accordingly, food handling time should be kept short, e.g. 45 - 60 minutes, and food surface temperature should not exceed 15°C (59°F).

5. Inhouse freezing

All foods which require in house freezing to extend the shelf life of the product or to aid in the production of the product. (Freezing of raw materials and inhouse product should only be carried out in exceptional circumstances unless it is part of the production process).

Definitions

Freezing - Method of preserving food by lowering the temperature to inhibit microorganism growth.

Blast freezer- unit which freezes food down below -18°C in 4 hours.

Procedure

At the end of the blast chilling process the food should have been cooled to +5°C within 4 hours. (Target 2 hours)

The food should have been portioned into batch sizes which allow the food to be cooled within the specified time.

The food must be placed into containers or packaging that will withstand the freezing process, the container should not be made from brittle plastic or any material which will break up when exposed to cold temperatures and only small quantities should be frozen.

If a product, as supplied, has a "use by" date it can only be frozen if it is to be cooked later.

Correctly label the product with date of freezing, name of product and shelf life.

Seal the container or packaging with as much air excluded as possible. The smaller the size and the tighter the packaging, the quicker the food will freeze. Denser food will take longer to freeze.

Place in the appropriate unit and make sure that the machine is operating as a blast freezer.

Blast freeze the food to -18°c within 4 hours.

Once the food has been frozen place into the holding freeze and use within 3 months from the date of production.

Once the product has been defrosted use within 24 hours, never refreeze once the product has been defrosted, (for thawing procedure see PRP006). Once defrosted, the product must follow the standard shelf-life criteria.

Food should be checked for freezer burn during storage.

Related Documents

- Checklist CCP 5

Responsible:

Production Staff

Corporate:

SOP 9 Personal Hygiene

Purpose

To prevent microbial and physical food contamination from food handlers and to ensure adequate protection measures by employees and visitors.

Scope

This policy applies to employees who have direct manual contact with food, also applies to external visitors to food handling areas, who may have direct food contact during their visit and to the unit management.

Definition

Food handlers are employees who during their work have direct manual food contact, especially employees of food handling areas e.g., cold kitchen, hot kitchen, pastry / bakery, tray setting. Possible staff from other areas, which may occasionally or regularly be employed in food handling areas are also considered food handlers.

Procedure

1. Restrictions for Food Handling

Food handlers must be fit for food handling.

Food handlers suffering from skin infection (boils, discharging cuts and wounds, heavy burns, heavy eczema) must not handle food until cleared by a competent Medical Authority.

Food handlers suffering from confirmed (diagnosed) intestinal infection must not handle food until cleared by a competent Medical Authority.

Food handlers with symptoms of intestinal infection (diarrhoea, abdominal pain, vomiting, possibly fever), sore throat, jaundice, must not handle food until cleared by a competent Medical Authority.

Food handlers shall be instructed to report immediately to management when experiencing symptoms of intestinal infection or skin infection.

2. Control of Gastro-Intestinal Infections nasal /throat infections and Skin Infections of Food Handlers

Control by interview and signing of Health Agreement for DO & CO Food Handlers shall be made upon new employment and confirmed annually.

Annual stool testing of each food handler and cleaning staff. The test has to be realized preferential after visiting countries with increased risks of infections.

Procedure for control upon new employment:

- All Applicants shall fill in Health Agreement for DO & CO.
- If applicant reports or appears to suffer from chronic or recurring eczema /skin rash the applicant shall not be employed for food handling.
- If applicant is suffering from boils, discharging wounds/cuts, the applicant shall not be employed for food handling until condition is confirmed healed by a competent Medical Authority.

- If applicant is suffering from diarrhoea, sore throat or jaundice, the applicant shall not be employed for food handling until examined and subsequently cleared by a competent Medical Authority.
- Stool test.

Procedure for annual confirmation of Health Agreement for DO & CO Food Handlers

- All employees shall fill in Health Agreement
- If a food handler is suffering from chronic or recurring eczema the food handler shall use disposable gloves in all food handling **or** be transferred to a non-food handling position. In addition, the food handler shall be offered medical treatment if locally available.
- If a food handler is suffering from boils, infected wounds/cuts the food handler shall be removed from food handling and sent for medical treatment. The food handler may return to food handling after clearance by a competent Medical Authority.
- If a food handler is suffering or was suffering last 60 days from diarrhoeal disease the food handler shall be removed from food handling and sent for medical examination including stool testing. The food handler may return to food handling after clearance (as per national legislation) by a competent Medical Authority.
- If a food handler is suffering or was suffering last 60 days from other infectious disease assumed to be transmissible through food, a DO & CO Regional QA shall be consulted.

3. Hand Hygiene

Food handlers shall maintain skin and nails of hands in a good condition. Nails shall be kept short and without nail polish. False nails have not to be used during food handling. Rings, bracelets and watches are restricted in food handling, as per section 5. Personal Hygiene Restrictions of this chapter.

Hands shall be washed whenever needed, especially at the following occasions:

- When entering food handling areas
- Before starting work
- After handling raw food
- After visiting the toilet, eating, drinking, coughing, sneezing and smoking
- Before and after use of disposable gloves
- After breaks
- After completion of unclean tasks
- After touching potentially contaminated surfaces such as raw food products or any skin
- In all other instances where cross contamination may be an issue.

Hand wash shall be performed thoroughly by use of soap and warm water. Hands shall be dried thoroughly after washing.

Wound and Infection Control

Cuts, scratches, burns, lesions and other wounds between elbow and wrist not showing signs of infection shall be covered with a waterproof, coloured dressing or plaster. During food handling, the dressing or plaster must be covered by a disposable glove.

Cuts, burns, lesions and all other wounds on hands shall be covered with a coloured plaster (preferably blue) and a waterproof glove.

Employees with secretions or discharges must be excluded from direct food contact work.

All food items have to be disposed, all equipment has to be cleaned/sanitized that the employee was working with when cut or wounded.

First aid boxes, containing coloured plasters, antiseptic lotion, waterproof dressings, plastic gloves have to be available to all employees

Hand Hygiene during Handling of Ready-to-Eat Foods (Glove Policy)

Hand wash is an effective method for removal of transient bacteria from skin of hands. Hand wash is not an effective method for removal of *Staphylococcus aureus* from skin of hands of Staph. aureus carriers, and hand wash is difficult to monitor.

Use of disposable gloves is an effective and recommended food protection measure, provided that gloves are whole and undamaged. Use of gloves may easily be monitored visually.

For the above reason's direct manual handling of ready-to-eat foods shall be performed by use of disposable gloves. In specific cases, where gloves may be difficult to use or where gloves may constitute a potential health & safety hazard, use of gloves may be replaced by a hand wash and then use of skin disinfectant.

Food handlers shall dispose and replace gloves at following occasions:

- Before starting work
- Following breaks, visiting toilets, eating, drinking, coughing, sneezing and smoking.
- After touching potentially contaminated surfaces such as raw food products or any skin.
- After changing product type
- In all other instances where cross contamination may be an issue.

Before wearing new gloves, hand wash shall be performed thoroughly (see above).

Hand disinfection: Use of alcohol-based (70%) hand disinfectant including skin moistener after hand wash is the preferred choice of skin disinfectant. Use of disinfectant may not replace hand wash.

Instructions for use of alcohol disinfectant:

- Dispense 3 ml into hands
- Rub hands to disperse disinfectant
- Let air dry for 30 seconds before resuming food handling

4. Working clothes

Food handlers shall wear suitable and clean working clothes (as indicated below), incl. hair cover, and maintain a neat visual appearance.

The working clothes consist of:

- trousers
- jacket, apron, coat, blouse or shirt
- possible additional clothing supplied for reason of comfort, such as insulating vest
- head gear
- Uniform must be changed when necessary.
- Uniform must be commercially cleaned.
- Hairnets must completely enclose hair
- Facial hair shall be covered with a beard snood
- Disposable sleeves must be worn to cover the forearms

Apron must never be used as cloth.

5. Personal Hygiene Restrictions

In order to prevent food contamination and to satisfy expectations of customers and authorities the following personal hygiene restrictions apply:

- Smoking, eating, drinking, spitting and chewing gums are not permitted in areas for production, storage, handling and transportation of airline food and equipment.
- Jewellery, such as necklaces, bracelets, watches, finger rings, earrings, must not be worn by food handlers during food handling.
- Plain wedding bands or similar religious jewellery are tolerated if they are not difficult to clean.
- Fingernails has to be kept short

- Nail polish must not be worn by food handlers during food handling.
- False nails must not be worn by food handlers during food handling.
- There must be a first aid box available accessible to all employees every time. First aid box must contain a sufficient supply of each of the following.
 - coloured waterproof plasters
 - antiseptic lotion

6. Visitors to Food Handling Areas

Visitors who intend to enter into handling area shall be asked to complete a “Health Questionnaire” before entering.

Visitors who declare and also show sign of any gastrointestinal and nasal /throat infection are not allowed to enter into food handling area.

Visitors with infected skin problem cannot enter unless they accept to wear gloves in food handling areas.

Related documents

- Health Agreement for Food Handlers
- Questionnaire for visitors
- Medical examination (stool testing)

Responsible: All staff

Corporate:

SOP 10 Cleaning and Disinfection

Purpose

To ensure visual cleanliness of non-food and food contact surfaces, as well as microbiological cleanliness of food contact surfaces.

Scope

Cleaning procedures include three main cleaning areas, namely:

- Cleaning of kitchen equipment and utensils (Pot wash)
- Cleaning of airline tray equipment, trolleys and liquid containers (Dish wash)
- Manual cleaning of main surfaces and fixed equipment of food handling areas.

Procedures

1. Storage and Labelling of Chemical Agents Used for Cleaning and Sanitization

Chemical agents have to be stored in safe distances to food

All chemical agents have to be labelled

Specification sheets are for all chemical agents available

2. Selection of Detergents and Disinfectants

Detergents and Disinfectants which are used in production areas has to be food graded. For each product a specification sheet has to be available.

3. Cleaning Program

Procedures of daily cleaning and periodical cleaning shall be detailed in a cleaning program. Cleaning program must specify each of the following.

- surface or areas must be cleaned if required disinfected
- Frequency of cleaning and disinfection
- Method of cleaning and disinfection
- Chemical agents to be used and the procedure of application (concentrations, contact time, equipment required etc)

4. Cleanliness and Maintenance

All structures

- has to be clean and free of dust, grease, food residue and dirt
- well maintained
- smooth and washable
- Refrigerators/freezers free of water or ice accumulation
- Food products are placed at least 6 inches off the floor
- Food contact surfaces has to be hard, non-adsorbent, smooth, non-toxic, resistant to corrosion, resistant to migration, resistant to the transfer of odour and colour

5. Pot wash

Primary duty of the pot wash is to ensure safe wash, disinfection and storage of food equipment and utensils.

The pot wash may be performed in the dish wash area or in a separate pot wash area.

A separate pot wash area shall be located as to ensure short transportation of goods from production area to pot wash and vice versa.

The pot wash shall be separated by walls, partition walls or by distance from food handling and storage areas.

Pot wash may be performed by manual procedure or by use of washing machine in combination with a manual pre-wash arrangement.

For Manual Pot Wash the following steps apply:

Prewash or pre-scraping to remove major food debris

- 1st sink: Wash
- 2nd sink: Rinse

3rd sink: Disinfection

Chemical or thermal sanitization can be used. For chemical sanitization subsequent described disinfectants are available:

<u>Disinfectant</u>	<u>Temperature as solution</u>	<u>Concentration</u>	<u>Immersion time</u>
Chlorine	24-44°C/75-110°F	50-100ppm	1-2 minutes
Iodine	24-49°C/75-120°F	12,5-25ppm	1-2 minutes
QAC	24-44°C/75-110°F	200-300ppm	1-2 minutes
Other chemicals	in accordance with manufacturer's specifications.		

Utensils and equipment must be thoroughly rinsed after disinfection.

For thermal sanitization a surface temperature of at least 71°C (160°F) for 30 seconds has to be reached on the equipment.

Used machines shall be maintained, incl. function of spray nozzles, and cleaned as prescribed, incl. descaling by acid detergent.

Temperature of wash water shall be 55 - 65° C (131 – 149°F)

Effectiveness of Sanitization (either thermal or chemical) has to be checked on daily base. The results have to be recorded:

- Date of cleaning/sanitization
- Concentration/immersion time of chemical disinfectant (if used)
- The temperature of rinsing water by using thermal labels.

Storage of Clean Equipment

Clean equipment shall be visually clean and stored as to permit quick drying.

Visibly unclean equipment shall be sorted out for soaking and re-washing before storage in clean equipment section.

Storage of Specific Utensils

Cutting boards shall be stored vertically with air space in between as to ensure quick drying.

Piping bags: Sole use of disposable bags is recommended. Tissue bags may be used as support for disposable types when piping heavy foods. If used, tissue bags shall be stored after wash as to ensure quick drying, i.e., on racks.

Food containers shall be stored upside down.

6. Dish wash

The dish wash area shall be separated physically or by ample distance from food handling/storage areas and from waste disposal area. The area shall be well ventilated and protected efficiently against rodents, insects, and birds.

The dish wash area shall consist of the following sections:

- Storage of unclean equipment
- Disassembling area
- Wash area
- Storage clean equipment

Storage Unclean Equipment

The area shall fulfil possible legislative requirements as to maximum room temperature.

If incoming airline equipment is stored for more than 12 hours, a room temperature of maximum 10-12°C is recommended. The area shall be separated from off-loading ramp and from other areas of the dish wash.

Maximum storage time under temperature-controlled conditions: 48 hours.

Maximum storage time without temperature-controlled conditions: 24 hours.

Wash & Disinfection Procedure

Machine shall be maintained, incl. function of spray nozzles, and cleaned as prescribed, incl. descaling by acid detergent.

Temperature of wash water shall be 55 - 65°C (131 – 149°F).

Temperature of final rinse, as monitored on machine thermometer, shall fulfil local legislation to temperature and water pressure with recommended temperature minimum of 83°C (181°F) .

Final rinse shall provide a time/temperature treatment corresponding to low pasteurization, as measured by 71°C (160°F) thermo label.

Daily recording of wash and rinse water temperatures must be maintained. Thermo label test shall be carried out once a day. Checks with calibrated Logger or Thermo Sensor are allowed.

Storage of Clean Equipment

Clean equipment shall be visually clean and dry before stacking and storage.

Equipment should be stored upside down. If this is not possible, equipment has to be covered.

Unclean equipment shall be sorted out for soaking and re-washing before storage in clean equipment section.

Store for clean equipment shall be well separated from other dish wash sections, either by wall or by distance.

7. Manual Cleaning Procedures

Daily and periodical cleaning procedures shall be performed according to a written cleaning program.

Cleaning Utensils

The unit shall consistently be supplied with cleaning utensils of adequate amount and quality.

Utensils shall be made from synthetic materials and shall be well maintained.

A designated space, segregated from food handling and storage, shall be available for storage of cleaning agents and utensils.

Cloths for wipe-off purposes shall be disposable type.

Cleaning and disinfection of food contact surfaces

Cleaning of food contact surfaces includes tables, cutting boards, slicers, can openers, thermometers, knives, scoops, mincers, mixers, blenders and utensils shall include a disinfection.

Disinfection may be achieved by application of chemical disinfectant after normal cleaning or by cleaning with a combined detergent / disinfectant.

All food contact surfaces must be cleaned and disinfected at each of the following times.

- Before use
- After use and
- In between uses with different food items

Chemical disinfectants must be used in accordance with the following specifications.

<u>Disinfectant</u>	<u>Temperature as solution</u>	<u>Concentration</u>	<u>Immersion time</u>
Chlorine	24-44°C/75-110°F	50-100ppm	1-2 minutes
Iodine	24-49°C/75-120°F	12,5-25ppm	1-2 minutes
QAC	24-44°C/75-110°F	200-300ppm	1-2 minutes

Other chemicals in accordance with manufacturer's specifications.

Utensils and equipment must be thoroughly rinsed after disinfection.

Other chemicals in accordance with manufacturer's specification.

Cleaning of Aircraft Modules

Interior and exterior surfaces of food modules (cabinets, carts) shall be washed by a combined detergent/sanitizer.

Cleaning of Aircraft Flasks (Liquid Containers)

Flasks shall be cleaned by use of a combined detergent/sanitizer.

If used for perishable foods, such as soup, fruit juice, taps of containers shall be dismantled prior to wash and be washed/sanitized separately.

Taps of liquid containers to be protected against contamination by alu-wrap during storage and transportation.

Related Documents

- Cleaning Program
- Dish washer temperature check list

Responsible: Cleaning Staff
Production Staff

Corporate:

SOP 11 Physical Hazards

Purpose

To prevent physical contamination of food.

Scope

Purchased food and in-house produced food at any stage during production, handling, storage and delivery to the customer.

Definition

A physical hazard is a foreign body in food with the potential to cause an adverse health effect. Contamination of food with a foreign body may compromise product safety and can significantly damage a food business.

Common hazardous foreign bodies include pieces of glass, light bulbs, airline catering equipment, staples, strings, rubber bands, metal objects, twist ties, hair, buttons, plastics, minerals, wood. Other food-related foreign bodies include hair, plasters and insects.

Procedures

1. Glass Handling Procedure

Use of glass in food handling areas shall be avoided.

- All glass surfaces shall be covered with a proper plastic film.
- Food in glass packaging should be purchased in alternative packaging when available
- Opening of glass jars shall be done outside of food handling area.
- Content of glass jars shall be transferred into a plastic or stainless-steel containers for storage
- Glass jars must be stored at the lower shelf in plastic bins or any other package that supports save storage.
- Glass jars must always be transported in plastic bins
- Customer glass equipment must also be stored in plastic bins.
- Customer glass equipment must be checked before use. Chipped cracked or otherwise damaged items shall be discarded.
- In case of breakage in food handling area all glass pieces shall be picked up and be wrapped with paper and thrown away in a waste bin. Possible food likely of being contaminated shall be discarded
- Lamps, of fly catchers, must be coated with a shatterproof film.
- When breakage of glass, china or melamine occurs in food handling area a breakage checklist shall be completed.
- A documented glass and clear plastic register must be implemented in all units and regular audits must be carried out and documented.
- All suppliers shall be asked to implement an effective glass control procedure. Effective measurements have to be specified to the customer.

2. Metal handling procedure

- Food handlers must not wear metal rings, earrings, necklaces, bracelets, facial studs.
- Foods in packages with metal clips must not be brought into the food handling area.
- Tins have to be opened and decanted outside of areas where opened food is handled or stored.

- Using staples or similar is not allowed
- Technicians who do maintenance work in the food handling area shall take all precautions to avoid food contamination by metal pieces.
- Through preventive maintenance presence of loose metal pieces on the equipment shall be prevented.
- After maintenance in a production or storage area the working place has to be controlled by a responsible person, and the area or equipment signed off before being allowed back into production.
- All suppliers shall be asked to implement an effective metal control procedure. Effective measurements have to be specified to the customer.

3. Stone / hard piece control procedure

- Fruits and particularly vegetables must be thoroughly washed to remove the foreign objects
- All suppliers shall be asked to implement an effective stone control procedure

4. Hair control procedure

- All food handlers must cover their hair with a head cover
- Arm sleeves shall be used to cover the forearms
- All food handlers shall wear protective uniforms
- Facial masks shall be used to cover beard, moustache
- Food handlers shall not dispose or replace gloves near to the working tables
- All foods in the stores must be covered to prevent foreign object contamination.

5. Wood procedure

- It is not allowed to use equipment or utensils made out of wood except working surfaces necessary for dough manipulation. This surface has to be well maintained and regular inspections carried out.
- Unavoidable utensils (sushi bamboos) shall be maintained well and cleaned/disinfected thoroughly before used.
- Fruits and particularly vegetables must be thoroughly washed to remove the foreign objects

6. Other

Rubber bands have to be avoided. Bands which are part of vegetable packaging has to be removed before entering areas where open food handled.

All kind of packaging materials which can cause physical contamination has to be removed before entering areas where open food handled.

Flasks with sealed plastic screws has to be opened in areas where no open food is handled.

All persons have to be trained to clean shoes before entering the production area.

Documents

- Glass breakage record
- Supplier Audit Checklist

Responsible: All Staff

Corporate:

SOP 12 Chemical Hazards

Purpose

To protect food from chemical contamination

Scope

Purchased food and in-house produced food at any stage during production, handling, storage and delivery to the customer

Definition

Some harmful chemicals which may be available in the food handling areas for different purposes can contaminate food.

Procedures

1. Contamination from the cleaning chemicals

- Cleaning agents shall be stored separately
- Cleaning agents to be used in the food handling area shall be stored at a safe distance from all food items.
- All chemical agents shall be identified with labels
- Only approved chemicals shall be used in the unit.

2. Contamination from pest control agents

- Pest control chemicals must only be by the pest control contractor staff
- No spray chemical treatment against pests shall be applied in food handling areas.
- No rat and mice stations with poisonous feed shall be allowed in the unit.
- Only approved chemicals shall be used by the pest contractor.

3. Contamination from lubricants

Only food grade lubricants must be used for food equipment.

4. Pesticides

- Suppliers of food have to meet legal requirement
- Fruits and particularly vegetables must be thoroughly washed

Responsible: All Staff

Corporate:

SOP 13 Food Safety Training

Purpose

Managers and employees are trained to provide knowledge and skills required to assure safe food preparation.

Scope

Food Safety Training for managers and employees.

Procedure

Training of Managers

Management shall be trained to have a complete understanding of DO&CO Food Safety system.

New Employee Training

All employees have to read the Hygiene instructions for new employees. Short examination has to be done. In case of failure the test they have to be instructed by the QA. Employees have to sign that they understood given information. The signed form has to be stored in the personnel file.

Refresher training

- Once per year all employees shall be trained on relevant CCP's and SOPs. Training survey shall be used to plan refresher training.
- Refresher training shall also be carried out any time for employees whose food safety practices show deviations from the standard.
- All employees shall be trained on the training module, introduction to Food Safety and Hygiene as basic training module.
- The effectiveness of the training has to be checked by the trainer by written tests or quizzes.

Related Documents

- Training survey
- Training records
- Training record for new employees
- Basic Food Safety Training Module; introduction to Food Safety and Hygiene
- CCP and SOP training modules

Responsible: Quality Assurance **Corporate:**

SOP 14 Validation of Measuring Equipment

Purpose

Temperature measuring instruments shall be validated to ensure their accuracy.

Scope

Unit thermometers for control of temperatures of food, refrigerators, freezers, dish washers and food handling areas, i.e., fixed / loose thermometers of cold stores, dishwashers, probe thermometers and Infra-red thermometers

Definitions

By validation is understood in this context: Validation of unit thermometers by use of calibrated probe thermometers.

Procedure

- Thermometers must be available at all times on the equipment and in the areas where a temperature measurement is required.
- Thermometers shall be validated by use of a calibrated reference probe thermometer or by using ice water and/or boiling water.
- Thermometers in cold stores have to be validated at least twice a year. Probe- and surface thermometers have to be checked monthly.
- Each thermometer (probe, cold store, infrared) shall be identified with a code and validation records of thermometers shall be maintained.
- When a thermometer reveals any deviation within a tolerance of $\pm 1^{\circ}\text{C}$ for probe thermometer and ambient thermometer and $\pm 2^{\circ}\text{C}$ for infrared thermometer this deviation shall be noted on the records. If deviation exceeds this tolerance, thermometer must be adjusted or replaced.
- Calibrated reference thermometer must be checked periodically with records to confirm.
- The company which performs the calibration of reference thermometer must be accredited.

Related documents

- Thermometer validation records

Responsible: Quality Assurance **Corporate:** Engineers

SOP 15 Preventive Maintenance

Purpose

To ensure that all the equipment which have direct impact on food safety are under a preventive maintenance program in order to secure that they are functioning consistently.

Scope

All the equipment which have direct impact on food safety (cold stores /freezer, oven, blast chillers, air chilling, pot / dish wash machines, refrigerated trucks etc.).

Procedures

A preventive maintenance program that includes the periodic maintenance plan of the food safety related equipment shall be prepared and implemented.

Preventive maintenance program shall include the daily, weekly, monthly, three monthly etc. maintenance work for the concerned equipment.

Related documents

- Preventive maintenance program

Responsible:

Engineers

Corporate:

Quality Assurance

SOP 16 Pest Control

Purpose

To ensure that chemical, physical and biological hazards caused by rodents, flying and crawling insects are prevented.

Scope

Control of pests in all areas of the unit

Procedure

Preventive Measures

- Openings (doors, windows, etc.) of catering building shall be kept closed or be equipped that access of pest is prevented. Windows kept open shall be fitted with flynet.
- Where necessary, insect-o-cutors shall be installed. Installation preferably max.2 meters above floor level, not directly above food handling activities and not to be visible through openings to outside. The use of sticky surface typed insect-o-cutors is recommended.
- Preventive pest control inspections for presence of rodents, flying and crawling pest must be carried out at defined and sufficient intervals by a competent contractor.
- Areas, including drains shall be rodent proof.
- Animals e.g., cats, dogs and birds must not be found inside premises.
- Preventive actions against birds outside of premises, especially in the delivery and loading area, has to be addressed.
- Outside waste collection areas have to be controlled by the contractor.
- Records of pest control activities shall be kept on site.

Related documents

- Documents by the pest contractor

Responsible:

Quality Assurance

Corporate:

SOP 17 Water Treatment

Purpose

Water used for food production must be safe. Water used for cleaning and pot/dish washing must be at specified quality.

Scope

Water and for food production, cleaning and pot/dish washing

Procedure

- Water supplied to the unit for food production must be in accordance with “Guidelines for drinking water quality WHO” and local legal requirements. Unit shall get documented proof that supplied water is at required microbiological and chemical quality.
- When the safety of supplied water is not guaranteed unit shall install some systems to ensure that water is disinfected (chemical disinfection, UV application etc)
- Unit shall check and document the disinfection effectiveness of the system periodically.
- Hard water shall not be used (over 5-6 German hardness) for cleaning and pot / dish washers as hard water complicates cleaning. Water softener shall be used to decrease water hardness.
- Water used for ice machine must be safe. Active carbon filter can be used to remove undesired odour, taste of water used for ice machines and tea / coffee pots.

Related documents

SOP24 Analysis of Food, Water, Hands and Surfaces.

Responsible: Engineers **Corporate:** Quality Assurance

SOP 18 Traceability, Product Recall and Legal Labelling of Food

Purpose

In case of awareness of an incident which can cause severe or temporary impairment of health, further harm has to be minimised, this includes:

1. Analysing the problem
2. Informing all relevant parties
3. Analysing the source of the problem and traceability
4. Setting corrective actions

For minimising the consequences of an incident, the unit has to implement a system for traceability:

- Trace within a reasonable time the supplier of a food or a beverage determined for recall.
- Track within a reasonable time the customers to whom the food or beverage for recall is supplied.

Scope

Tracing and tracking of any given food or beverage following the principle of “one step back, one step forward”, by means of an IT system or by manual checking of Meal Specifications, Beverage/Bar specifications and Miscellaneous Specifications.

Definitions

Tracing: Systematic identification of the supplier from, or through, whom a food or beverage has been purchased.

Tracking: Systematic identification of the customers to whom the food or beverage has been supplied.

Internal tracking: Systematic identification of additional menus (in addition to the primary menus in which the food is used) in which the actual food, or residuals hereof, is used as an ingredient.

Recall: used in situations when there is a reasonable probability that use of a product will cause serious foreign body contamination or is likely to cause serious health consequences
Withdrawal of a product from the marketplace by manufacturer, supplier, health authority or customer due to minor violation that is not subject to legal action.

Product suspected of adulteration or contamination that is restricted from use, is held and labelled pending confirmation of test results, risk assessments, etc.

Meal specifications: Specifications of the entire selection of meals supplied to customers.

Beverage/bar specifications: Specifications of the entire selection of beverages / bar items supplied to customers.

Examples which can activate Traceability or Product Recall:

- Presence of a microbiological pathogen
- Food product contaminated with a toxic chemical
- Presence of a life threatening undeclared allergen

- Glass or metal fragments in food
- Unsafe pesticide residues
- Presence of Histamine in fish
- Labelling violations
- Mould or yeast contamination
- Spoilage

Procedure

Each unit should have clearly displayed an internal plan which shows necessary steps have to be taken and emergency contact information.

The following steps has to be organized:

1. Analysing the problem (Which meals and where are the meals now?)

Analysing if the food or food components

1. were already sent to one or more customers
2. were already served to consumers
3. are still in the unit or under the control of DO & CO

2. Informing all relevant persons which can contribute in minimising the potential harm or finding the source of the problem

Establish appropriate Point of Contact at customer organisation; notification should occur immediately after realisation of recall / withdrawal / hold.

Relevant persons who can assist in the event of a recall are:

- Unit management
- Head chef
- Dispatch
- Supplier
- Customer
- Quality Assurance

Depending on the type of incident local authorities, Insurance companies or DO&CO law department has to be informed. This has to be decided by the unit manager.

3. Analysing the source of the problem and traceability

Analysing which components, ingredients or auxiliary materials could have caused the incident, which meals were produced with the risk items and where the meals and / or the risk items are stored.

Traceability is carried out

- by verifying records and files which give relevant information to the effected product and used raw materials and auxiliary materials and

- by implementing a labelling system which allows the identification of products and batches.

Ad. Traceability

Unless National authorities impose a stipulated a system, the simplest form of basic traceability shall be implemented. For basic traceability we shall implement a system enabling us to track customer and trace supplier but not individual batches of any given food.

This basic system is assumed to be the most cost-effective because the saving on operating cost is assumed to more than compensate for the increased cost of a possible product recall tracing at product level and not at batch level. Where possible IT applications shall be used to develop a basic traceability system.

Ad. Labelling

Food labelling: *A labelling system in order to conform to “The Food Labelling Regulation 2000/13/CE”, food safety standard, customers’ expectation and / or national regulations where stricter must be implemented.*

Allergen: *Packed products must indicate the content of any allergenic substances. Allergen labelling must be clearly visible and would normally be provided in an allergen information panel on the product label. As well as for free of allergens meals (SPML) the label has to carry as much information as needed to define the meal itself.*

In the case of non-sealed food, we must indicate the use of any of the allergens at the menu presentation and cooks should adhere to any guidelines. In the event of menu substitution, extra care must be taken to ensure that allergen labelling is adhered to and changes made as necessary.

Please see also SOP 2 (Control of Allergy Related Special Meals).

Genetically Modified Food: *Whenever GM free meals are requested by a customer, the following procedure shall apply*

- *For purchased foods, the supplier shall be asked to guarantee that the food is free of GM organism. The answer shall be documented through the GM Policy Questionnaire.*
- *Label of food shall be checked. This applies to purchase foods in areas where local food legislation requires labelling of possible GM ingredients.*
- *Possible soy and corn (maize) and tomato ingredients shall be checked for GM ingredients which identified on the label.*

Label system status

- *each Major Equipment (trolleys and boxes) and all other container types must have a correct label attached to it*
- *all labels must be attached to the front of the equipment and have galley number and stowage number on them*
- *Easy Identification of Special Meals by visible labels has to be ensured.*

4. Setting Corrective Actions

Elimination of the risk items

Contacting and information of the customers or affected consumers

Responsible: All responsible Staff **Corporate:**

SOP 19 Facility Requirements

Purpose

To facilitate safe food production, storage, handling and transportation, as well as to fulfil expectations of customers and Health Authorities.

Scope

Requirements of this standard procedure are valid for new constructions as well as major refurbishments of existing units.

Definitions

Procedure

Exterior Areas

Exterior surfaces for transportation, parking and storage adjacent to the building shall consist of concrete, asphalt or similar hard-surface material. Such surfaces shall be designed as to prevent accumulation of water (in case of flooding).

For pest control reasons vegetation, especially bushes and trees shall preferably be avoided on the entire site, especially near the catering building. The minimum distance between possible vegetation and the building should be 2 metres. Possible vegetation must be kept tidy.

Weeds litter and waste must be removed from exterior surfaces on a regular basis as to ensure good visual impression of exterior.

Area for receiving of purchased foods shall be segregated from area for receiving of incoming equipment and food waste from aircraft.

Layout of Catering Unit

The catering unit shall be designed in such a way that:

- Clean and unclean areas, processes and products are segregated
- Cold chain of food is maintained throughout the food flow

The final lay-out of new units and major modifications of existing facilities shall be assessed by Regional QA.

Segregation Principles

Segregation in food storage (refrigeration):

- Raw foods of animal origin shall be stored in separate refrigerators used only for storage of these raw foods.
- Raw, unwashed foods of vegetable origin shall be stored in separate refrigerators used only for storage of these raw foods.

See also SOP 5 Food storage procedure

Segregation in food handling:

- Raw foods of animal origin shall be handled in one or several areas which are segregated from ready-to-eat food handling areas by walls, partition walls or ample space.
- Raw foods of vegetable origin shall be handled in one or several areas which are segregated from ready-to-eat food handling areas by walls, partition walls or ample space.

See also SOP 8 Food handling procedure.

Segregation requirements in other areas

Pot wash: See SOP 10 Cleaning & disinfection procedures

Dishwash: See SOP 10 Cleaning & disinfection procedures.

Control of Ambient temperatures

Food handling areas

In order to enable compliance with CCP 5, a maximum ambient temperature of 18°C of areas for handling of chilled food is set for new facilities and major refurbishments.

In order to facilitate easy compliance and minimizing CCP 5 control documentation, it is strongly recommended, at least for new constructions and major refurbishments, to operate ambient temperature of food handling areas below 15°C.

Ambient temperature of heat-generating food production areas, such as hot kitchen and bakery, should preferably not exceed 28°C for staff comfort reasons.

Non-food handling areas

Ambient temperature of dish wash and pot wash areas should preferably not exceed 28°C for reasons of staff comfort and pest control.

Ambient temperature of staff facilities should preferably not exceed 28°C for staff comfort reasons.

Hygienic Quality of Surfaces and Installations

General criteria

Material and design of surfaces of the catering unit shall be selected with due consideration of the intended use as well as the intended cleaning method.

In general surfaces shall *be durable, non-absorbing, non-corrosive, smooth and easy to clean*. In addition, surfaces shall fulfil possible requirements to work protection.

Surfaces shall be maintained, kept clean and tidy to the extent which satisfies DO&CO corporate identity, local legislation and customer expectations.

Damage, breakage of food contact surfaces, food equipment and utensils shall be repaired or exchanged in order to prevent food contamination with foreign bodies.

Floors

Floors shall consist of:

- Tiles with joints applied level with tile surface
- Alternative material with similar properties with regard to durability, imperviousness and cleaning properties, e.g., epoxy based and similar approved materials.

Practical colours of floor surfaces should be chosen.

Floors of wet areas shall be laid out so that water from cleaning etc runs towards the drains and does not stagnate on floor.

Connection between walls and floors shall be coved skirting.

Drains

Drains shall be of sufficient size.

Drains of wet areas shall be installed in such a way that water will flow from floor into drains without formation of pools of stagnant water around drains.

Drain gratings shall be rat- proof and shall be easily removable for cleaning.

Walk-in refrigerators shall have no drains.

For new (re)constructions food industry recommended drains has to be used

Drains must flow from high-risk areas to low risk areas.

Walls

Walls shall be solid without interior hollow space for pest control reasons. Wall surface shall be smooth and easy to clean. Surface to a minimum height of 2 metres shall consist of:

- Tiles with joints applied level with tile surface
- Alternative material with similar properties with regard to durability, imperviousness and cleaning properties, e.g., epoxy based and similar approved materials.
- Surface material shall be fitted tightly to the wall in order to prevent formation of hollow space between wall and surface.

Surface penetrations for pipes, ducts etc. shall be effectively sealed for pest control reasons.

Whenever necessary walls and wall corners shall be protected by suitable fenders of stainless steel or synthetics. Fenders shall be designed and installed as not to provide hiding places for pest.

Tops of partition walls less than 2 metres height shall decline 45 degrees in order to prevent accumulation of dust and possible storage of irrelevant items.

Doors

In general doors shall be self-closing. Doors to the exterior shall be fitted as to prevent access of insects, rodents and birds.

Windows

Windows to the exterior shall be fly screened (max. 1.5 mm) if they can be opened.

Windowsills shall be avoided for reasons of hygiene and tidiness. If present, sills shall decline 45 degrees towards room.

Ceilings

Ceilings shall be tight, smooth and washable.

Open ceilings are generally preferred to suspended ceilings for pest control reasons.

Overhead structures, e.g., pipes and cables below ceiling shall be cleaned with regular intervals, e.g., 2 x year in order to prevent excessive accumulation of dust and dirt.

Walk-in refrigerators

Floors, walls and ceilings shall fulfil general requirements described above.

Evaporators shall be well maintained and kept clean.

Doors shall be durable, easy to clean and self-closing.

Foods and food containers in walk-in refrigerators must not be stored directly on floor but shall be stored on shelves or pallets as to permit effective stock rotation and control, as well as air circulation around food containers (min. 5 cm between food and wall and minimum distance between floor and lower shelf 30 cm).

Shelves shall be made from stainless steel.

Pallets in walk-in refrigerators for food storage shall normally be made from synthetic material. Wooden pallets are allowed only in refrigerators and freezers used for storage of bulk supplies in original, unopened supplier packaging.

Walk-in refrigerators shall be equipped with thermometers with gauge / display installed on outside of cooler to facilitate temperature monitoring.

Walk-in refrigerators shall be connected to a time /temperature recording system, incl. an alarm device for major temperature deviations.

Walk-in freezers

Floors, walls and ceilings shall fulfil general requirements described above.

Walk-in freezers shall preferably be fitted with a lock (anteroom) of sufficient size to allow passage of transport equipment in order to reduce penetration of warm air into freezer.

Foods, containers etc shall be stored on shelves or pallets and must not be stored directly on floor.

Foods must not be stored directly against the wall of freezer, and free space of minimum 10 cm) between goods and wall shall be maintained.

Walk-in freezers shall always be equipped with thermometers with gauge / display of thermometer installed outside freezer to facilitate temperature monitoring.

Walk-in refrigerators shall be connected to a time /temperature recording system, incl. an alarm device for major temperature deviations.

Dry stores

Floor surface shall be dust-proof concrete, tiles or similar hard, durable, impervious material. If present, drains shall be rat-proof.

Shelves of dry stores shall be made from metal or hard synthetics.

Food and food containers / packages must not be stored directly on floor but shall be stored on shelves or pallets.

Distance between lower shelf and floor to be 30 cm.

Possible windows for opening shall be fly screened.

Hand wash facilities

A hand wash station shall include:

- Basin
- Hot and cold-water supply, dispensed through mixing battery to hand warm
- Water release shall be non-hand / arm operation
- Liquid soap in dispenser, installed on wall
- Paper towels in dispenser, installed on wall
- Waste basket for used towels
- Hand sanitizer unit
- Sign "Wash your hands", mounted on wall.

Number and location of hand wash facilities

- Several stations at entrance(s) to food handling areas.
- 1 station in front of each toilet area.
- Minimum 1 station in each food handling area
- Recommended max. distance from a given working place to nearest station 7 meters.
- 1 station in locker rooms per 10 employees (using locker room at same time/ shift).
- Minimum one station in each operations area, dish wash and pot wash.
- Minimum 1 station between clean and unclean sections of dish wash.
- Hand washing stations must be used exclusively for washing hands.

Equipment & utensils

Materials for equipment and utensils must be durable, non-absorbent, non-toxic, non-corrosive and easy to clean.

Stainless steel is the preferred material for food contact surfaces. Wooden equipment and utensils shall be avoided to the widest possible extent.

Surface of equipment and utensils shall be smooth and easy to clean.

Equipment and utensils shall be so designed as to avoid hollow spaces, as such space represents traps/hiding places for dirt, wastewater and pest.

Equipment and utensils shall be well maintained. Corroded, broken and otherwise damaged equipment and utensils shall be repaired or discarded.

Equipment placed on floor shall be:

- sealed dust-proof to floor or
- raised minimum 30 cm above floor in order to provide access for cleaning or
- rest on wheels in order to facilitate removal for cleaning.

Equipment placed against / fixed to walls shall be sealed dust-proof to wall or be fixed with sufficient free space between wall and equipment to allow cleaning, pest inspection and eradication.

Services

Lighting

Food handling and storage areas must be provided with sufficient natural or artificial light (normal standard min. 500 lux 1 meter above floor).

All light and bulbs in areas where open food is handled must be suitably shielded to prevent possible contamination from glass in the event of breakage.

Ventilation / air conditioning

All areas must be provided with adequate ventilation and/or air conditioning to prevent undesirable odours and vapours.

Water Supply

The water supply to the unit must be of drinking water standard from a source approved by the relevant local authority.

Drainage

All wastewater and effluent must be discharged into a suitable sewage system or other means of disposal that secure effective removal of the wastewater.

A grease interceptor must be fitted to pre-clarify the effluent before entering the disposal system.

The drainage system must be constructed as to prevent access of pest. The percentage incline should be at least 1 in 100.

Waste handling

Waste containers/baskets shall be available in all areas according to need.

Waste containers for wet waste shall be equipped with plastic inserts.

Waste containers shall be cleaned after being emptied.

Waste containers shall be emptied with adequate frequency as to avoid overfilling.

Lids on waste containers are not recommended. If present, lids should be non-hand operated.

Transportation of waste containers to waste collection station shall be performed in a way which prevents contamination of surroundings.

Waste collection station

The waste collection station shall fulfil local legislative requirements to segregation from other areas and from surroundings.

The station shall fulfil local legislative requirements to protection against animals and insects, with special reference to dogs, birds and rodents.

Possible local legislative requirements to ambient temperature of enclosed waste collection stations shall be complied with.

Wet waste shall be stored in a refrigerated room until disposal. Temperature of refrigerated room shall be max 10°C.

Wet and dry waste collection station shall be cleaned after each disposal.

Responsible: Engineers

Corporate: Management
Quality Assurance

SOP 20 Delay Policy

Purpose

To outline the parameters used to make an assessment of food safety risk in the event of an aircraft departure delay.

Scope

Every notified delay has to be considered on a case-by-case basis.

Definitions

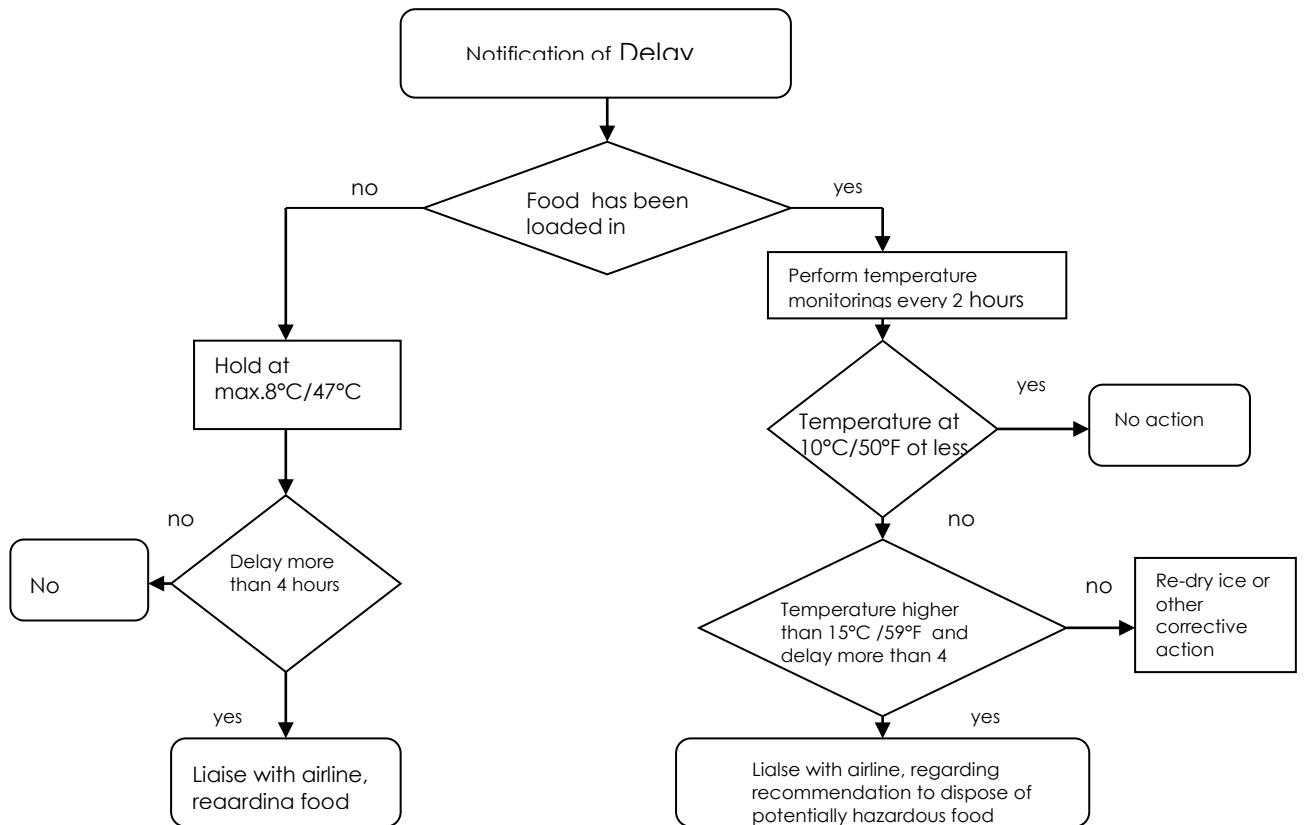
Delay is defined to be the failure of scheduled passenger flight to depart at the scheduled time. A delay that is caused by an inflight caterer could result in the caterer being issued a substantial monetary penalty by the airline.

Related documents

For each delay all data relating to times, food temperatures and decisions must be made documented.

Procedure

Delay policy Flow Diagram For meals loaded chilled



Responsible: Dispatch

Corporate:

6. Validation, Verification, Improvements-Standard Operation Procedures (SOP)

SOP 21	Validation of the Food Safety System
SOP 22	Internal audits
SOP 23	External audits
SOP 24	Analysis of Food, Water and Surfaces
SOP 25	Complaint Management
SOP 26	Continuous Improvements, Information flow

SOP 21 Validation of the Food Safety System

Purpose

To ensure that the established food safety system effectively controls the determined hazards, and the system is implemented being in compliance with the written plan.

Scope

Food safety system to be applied in airline catering units.

Definitions

Validation: Obtaining evidence that the elements of the food safety system are effective.

Procedure

Validation of Food Safety System shall be followed-up by Food Safety working group in their periodical review meetings. Regular risk assessment shall be carried-out as validation tool.

Any changes in the process flow, introduction of new food products, application of new techniques etc. shall be assessed and necessary modifications in the system shall be done.

The Preparation of the Validation has to be realised by the Regional Hygiene Manager. Following information has to be collected prior the review meeting:

- Updated Unit data sheet
- Updated maintenance shedule
- Auditresults
- AFP reports
- Statistical data of internal and external complaints
- Risk assessment form

Related documents

Risk assessment form

SOP 22 Internal Audits

Purpose

Periodic internal audits are used to monitor the performance of food safety system implementation in the units. Effective internal audits are essential to determine the areas for improvement.

Scope

A structured internal audit with defined activities.

Procedure

Internal Auditors of DO & CO are designated after a special Auditor Training given by the Food Safety Working Group

Each year an exchange of experiences has to be organised by the Food Safety Working Group.

Each three years a monitoring audit has to be realised by the Food Safety Working Group with all Internal Auditors

Global audits are planned by the Division Hygiene Manager

Regional Internal Audits (RIA) realised by Regional Hygiene Manager (RHM) in units of the designated region of the RHM

Regional internal audits have to be planned and realised by the Regional Hygiene Manager regularly – minimum quarterly in each unit and in case of realised nonconformities or process changes

Regional Internal Audits have to be realised according to the Audit checklist.

Document controls and on-site inspection are the two essential activities in an audit.

Determined non-conformities and areas for improvement shall be discussed with the unit management at the end of audit.

Internal auditors shall submit an Action chart within 2 days to the unit management

The unit management has to be complete the Action chart within 5 days after receipt. This Action chart gives responsibilities and target dates for realising corrective actions and improvements.

Internal auditors shall submit an audit report within 7 days after the audit.

Unit shall take the corrective actions organist the non-conformities and inform the auditor.

Auditors shall verify the implementation of corrective actions

Global Internal Audits (GIA) realised by Hygiene Manager in other units than in the designated region of the RHM

Global Internal Audits have to be realised regularly – minimum twice a year in each unit.

Global Internal Audits have to be realised according to the Audit checklist.

Document controls and on-site inspection are the two essential activities in an audit.

Determined non-conformities and areas for improvement shall be discussed with the unit management at the end of audit.

Internal auditors shall submit an Action chart within 2 days to the unit management

The unit management has to be complete the Action chart within 5 days after receipt. This Action chart gives responsibilities and target dates for realising corrective actions and improvements.

Internal auditors shall submit an audit report within 7 days after the audit.

Unit shall take the corrective actions organist the non-conformities and inform the auditor.

Auditors shall verify the implementation of corrective actions

Documents

- Global audit schedule
- Internal audit checklist
- Action chart

SOP 23 External Audits

Purpose

External audits are conducted by customers, by companies in charge of customers and authorities. External audits can be announced or not. Results of these audits effect the success of the unit and DO & CO globally.

Scope

This procedure applies the activities has to be made in case of external audits.

Procedure

Unannounced audits by authorities or customers

- Identity card of the visitor(s) has to be shown in case if the person(s) is unknown
- The unit manager or his deputy and the hygiene controller have to perform the audit with the visitor(s)
- All responsible staff have to be informed as quickly as possible
- All responsible staff have to verify in a cross check that all employees work according to this standard and the national law
- If samples are taken by the visitors, cross checks have to be done. Samples have to be stored frozen for at least three months
- All written reports and forms have to be sent (Fax or Scan) to the Regional Hygiene Manager (RHM). Originals have to be stored in the unit for 5 years
- Impressions and results of the audit have to be reported written and formless to the Regional Hygiene Manager
- Corrective actions in case of deviations have to be planned with the RHM
- Auditors shall verify the implementation of corrective actions

Announced audits by authorities or customers

- An announced audit has to be realised by the Regional Hygiene Manager (RHM)
- As soon as the audit is announced the Food Safety Working Group have to be informed
- The audit shall be prepared thoroughly by the RHM in cooperation with the unit manager, the hygiene controller and the responsible key account manager.
- All relevant information and specific requirements of the auditing agency need to be collected prior to the audit
- Corrective actions, based on the audit results, need to be planned.
- Information to all responsible staff of the intended external audit
- Realisation of all planned corrective actions
- Realisation of an internal audit if all requirements according to the standards are fulfilled
- If samples are taken by the visitors, cross checks have to be done. Sample have to be stored frozen for at least three months.
- All written reports and forms have to be sent (Fax or Scan) to the Food Safety Working Group and to the responsible Key Account Manager following a customer audit

- Results of the audit have to be reported in writing to the Food Safety Working Group and the responsible Key Account Manager following a customer audit
- Corrective actions in case of deviations have to be planned
- In case of customer audit, a reply to the customer which defines all planned and already realised corrective actions has to be prepared by the RHM and has to be sent as a draft to the Food Safety Working Group and the responsible Key account manager. Replies must be sent within two days.
- In case of an external audit realised by authorities a reply has to be prepared by the RHM, which has to be released by the unit manager.
- RHM shall verify the implementation of corrective actions

Documents

- Checklists related to the Airline standard
- Action chart

SOP 24 Analysis of Food, Water, Hands and Surfaces

Purpose

To verify the effectiveness of the control measures by use of microbiological tests.

Scope

Purchased food, in-house made processed and finished foods, water, ice, equipment and surface swab, hand swab.

Related document

Microbiological standard for ready-to eat foods.

Bacteriological standard for swab tests (hand, surface)

Laboratory test records

Procedure

Food Testing

- Foods for testing shall be, in general, high risk ready-to-eat foods. Microbiological analysis of raw high-risk foods is not considered cost effective unless special indications prevail.
- Microbiological analysis shall be carried-out for special raw products which are consumed raw or undercooked.
- Each unit shall have an appropriate sampling program for food, water, hand and swab testing.
- Methods used shall be standard methods for that particular country, or internationally accepted methods or equivalent validated method.
- Only approved external laboratories shall be used for microbiological and chemical tests.
- The microbiological guidelines for Ready-to-eat Food shown below shall be used to assess the results of food testing. However, if legally required standards are available for a country, then that country's standards must apply.
- Microbiological testing plan and results of analysis shall be documented.
- A sampling plan should be drawn up by product type detailing the number and type of microbiological tests to be carried out.
- Microbiological results should be trended by the Hygiene Controller on a monthly basis to show the number of samples vs. the number and type of out of specification results.

Recommended minimum number of foods samples for microbiological controls is as follows.

Total meal production/ day	<1000	1.000-2.500	2.500-5.000	>5.000
Minimum number of food samples for examination/month	5	10	15	20

*Microbiological Guidelines for Ready-to-eat Foods*¹

See DO & CO Lab Standards

Where legally standards are available to far a country, then that country's standard must apply.

Aerobic plate count at 30°C, 48 hours

As per guidelines for Drinking water Quality, WHO (1984)

Hand Swabs

Hand swabs must routinely be taken from all food handlers in order to ensure the effectiveness of hand washing. Records must be kept of results and corrective action must be carried out on any out of specification results. Hands must regularly be tested for *E.coli* and *Coliforms*. Any growth of *E.coli* or *Coliforms* indicates an out of specification. In the event of an out of specification, hands must be swabbed every week for four weeks to ensure a clear retest and training on hand hygiene given to the employee. Swaps for *Staph. aureus* can be done optionally.

Hand swab results should be trended on a monthly basis by the Hygiene Controller to show the number of swabs taken vs. the number and type of out of specification results.

Environmental Swabbing

E.coli and *Coliforms* swabbing must also be carried out to evaluate the effectiveness of the cleaning- and disinfection procedures equipment surfaces, tables etc. If a swap is positive on *E.coli* and/or *Coliforms* immediate corrective action must be carried out, which must include re-cleaning of the item and re-swabbing to verify the cleaning.

In addition to testing above mentioned, environmental swabs should also test for yeasts and moulds. Yeasts are a general indicator for the effectiveness of cleaning execution and physically removing dirt.

Environmental swab results should be trended on a monthly basis to show the number of swabs taken vs. the number and type of out of specification results.

Water Sampling

To ensure the safety of water used for drinking, ice and cooking in DO & CO units, samples must be taken from all water points used for production, ice and/or drinking every six months. A sampling plan should be drawn up showing the relevant water points and when they are to be tested. The results must comply with the Microbiological Guidelines for Ready-to-Eat Foods, above, or to national guidelines were stricter.

If an out of specification result is received, the water must be resampled and where necessary removed from being used in drinking or cooking water.

Certificates of Analysis

Where suppliers are using a positive release system for their products, certificates of analysis should be sent for each batch to the Unit Hygiene Controller. This may assist in the reduction of microbiological sampling carried out by DO & CO units. Where prepared meals are bought in i.e., Kosher Meals, the supplier's microbiological results should be

obtained to ensure compliance, the pasteurisation results of liquid egg should also be obtained for each batch.

Lab Audits / Accreditation

Only accredited laboratories can be used for the analysis of food, water, hand swabs and environmental swabs. It is the responsibility of the Regional Hygiene Manager to ensure that the contract laboratory is accredited. Accreditation should be confirmed through a laboratory audit to view official accreditation documentation. The laboratory should also provide evidence of their proficiency testing for all laboratory staff, and annual results viewed.

Retained Samples

Samples of all high-risk items should be taken from each production day and kept frozen for two weeks. In the event of an AFP incident these samples can be sent for microbiological analysis to establish the presence or absence of food poisoning bacteria. Should an internal out of specification *Salmonella*, *E.coli* or *Coliforms* results be received, the retained sample can be tested.

Test frequency

Food	Monthly
Hand swabs	According to internal procedure
Environmental swabs	According to internal procedure
Water, Ice cubes	Twice a year

SOP 25 Complaint Management

Purpose

Structure for collecting, analysing and concentration data of internal and external complaints with the target to obtaining relevant information for improving the food safety system

Setting responsibilities and target times for customer and internal information

Scope

All complaints obtained by the customer, the consumer, authorities and DO & CO staff related to food safety (complaints concerning chemical, physical or biological hazards)

Procedure

Customer contact of each airline obtains complaint out of IT System or similar information flow. Complaint is added to Complaint Management Tool. Relevant Departments as well as QA and Unit Management are informed by automatic generated emails. Complaint has to be answered by defined reaction time including follow up. Food safety related complaints shall be documented in additional file.

The complaint has to be answered by the Customer Contact to the customer.

Complaint management

Trending, summaries or further statistics can be obtained by the Complaint Management Tool.

Food Safety Contact

Food Safety related Complaints has to be sent to the Regional Hygiene Management (RHM).

E-mail addresses are:

Country	E-mail adress	Country	E-mail adress
Austria	foodsafetyAT@doco.com	Turkey	foodsafetyTR@doco.com
Germany	foodsafetyD@doco.com	United Kingdom	foodsafetyUK@doco.com
Italy	foodsafetyIT@doco.com	United States	foodsafetyUS@doco.com
Malta	foodsafetyMT@doco.com		

General Food Safety Contact is foodsafety@doco.com

Relevant Documents

Claim report

SOP 26 Continuous Improvements/Information Flow

Purpose

To improve the food safety system consistently and continuously through:

1. Evaluation all data relevant for food safety
2. Setting measureable targets for food safety

3. Reviewing the food safety system
4. Continuous training
5. Preventive measures
6. Corrective actions
7. Information flow

Scope

Continuous improvement of the food safety system

Procedure

1. Evaluation of relevant data for food safety

- Internal audit scores
- Customer audit scores
- Customer claims
- Internal claims according action chart
- AFP claims
- Microbiological test results

This data is to be collected by the Division Manager and evaluated by the Food Safety Working Group

2. Setting measurable targets for food safety

Food safety working group shall set measurable targets for the following criteria

- Internal audit scores
- Customer audit scores
- Number of customer claims
- Number of AFP claims
- Microbiological test results

Each unit performance shall be assessed against the set targets.

3. Reviewing the food safety system

All relevant data for food safety (as listed above) has to be evaluated for all units. This is done by the Division Manager. Deviations are to be discussed and measurements for improvements induced.

4. Continuous training

Each unit shall implement staff training based on the training survey. Effectiveness of the training shall be consistently followed-up. Additional to the staff training, internal trainings for all DO & CO Hygiene managers should be carried out on a regular basis.

5. Preventive measures

Based on evaluation of relevant data, preventive actions for improving the system should be planned, realised, and effectivity monitored. These preventive actions are planned on each level of the food safety system.

6. Corrective actions

For all deviations on CCP's and SOP's of this standard corrective actions have to be planned and realised as quickly as possible. The effectivity of the actions has to be evaluated.

7. Information Flow

For implementation and maintenance of our Food Safety System, the information flow is of major important. The following systems are essential for keeping all responsible people, Partners and staff up to date:

Newsletter

Relevant information concerning DO & CO Food Safety is sent by E-Mails. The Food Safety Working Group is collecting relevant information about new legal requirements, specific Airline requirements and further information.

This information is addressed to all Hygiene managers, Unit management and Hygiene controllers.

Meetings

Meeting	Participants	Frequency
Hygiene meetings	Regional Hygiene Manager Hygiene Controller of a unit Unit Manager of a unit Head of Departments (if required) of a unit	Monthly
Experience Exchange Hygiene manager and Auditor	All Hygiene Managers	2 times/year
Food Safety Working Group	Food Safety Working Group	4 times/year

Reports

Report	Who	Whom	Frequency
Hygiene Controller	Hygiene Controller	Regional Hygiene	At least weekly

Report (HCR)		Manager	
Regional Hygiene Report (RHR)	Regional Hygiene Manager	Division Manager Food Safety Working Group	At least quarterly

Relevant Documents

- Internal audit report
- AFP report
- Action chart
- Food analysis report
- Meeting report
- Food Safety Review

7. Additional Procedures (AP)

- AP1** Food Handling on Board
- AP2** Food for Return and Long-haul Flights
- AP3** Food Safety Incident Handling

AP 1 Food Handling on Board

Purpose

To ensure that when food on board is handled by DO & CO staff, all the relevant hazards are to be adequately controlled.

Scope

Food handling activities done by DO & CO staff in the aircraft.

Procedure

Food preparation on board

- Hands shall be washed before food preparation begins and at any time when hands are contaminated
- Utensils and contact surfaces shall be kept clean. A suitable detergent shall be used to clean the surfaces
- Presence of foreign objects (fly, glass, metal) shall be avoided during cooking on board
- When cooking raw meat, poultry and sea foods, the cooking temperatures stated in CCP 3 shall be fully respected. A thermometer probe shall be used to monitor temperature
- Reheating on board
- Inside of oven shall be clean
- Time temperature shall be well set for the oven to ensure proper re-heating service on board
- Hands shall be clean. Nails shall be clean and trimmed
- Uniforms shall be clean

AP 2 Food for Return and Long-haul Flights

Procedure

To determine a proper time-temperature controls for the foods uplifted for return and long-haul flights.

Scope

Foods to be loaded as return catering and foods for long-haul flights.

Procedure

Whenever hot meals are loaded for return or as second meal services they must be chilled to -2°C (28°F) before being loaded on to the aircraft. Hot meals can be loaded as frozen only if the customer approves this procedure in writing.

For chilled foods, dry ice in a sufficient amount (2 kg for a double trolley and 1 kg for a half trolley) shall be used in each trolley to ensure that meal temperature does not exceed 10°C (50°F) during the flight.

AP 3 Food Safety Incident Handling

Purpose

To handle the serious customer claims of food safety nature such as, alleged food poisoning and stone, glass and metal pieces in meals.

Scope

Serious food safety related claims reported by airline customers.

Definitions

AFP (Alleged Food Poisoning)

Related documents

AFP checklist

Procedure

Alleged food poisoning and foreign object claims from customers are normally received by the sales department.

Sales department shall inform Regional QA

Regional QA shall inform Divisional QA

Regional QA shall initiate investigation and share the collected information with Divisional QA.

If the claim is related to food poisoning. Regional QA shall complete AFP checklist and send it to Divisional QA.

Regional QA shall complete the report and submit to the person responsible to reply to the airline.

Regional QA shall send the report to all Food Safety working group members.

8. ATTACHMENTS

- I Definitions and Abbreviations**
- II DO & CO Risk Assessment**
- III CCP Forms**
- IV SOP Forms**
- V Shelf life of certain food items**

I Definitions and Abbreviations

Issue	Definition
Abs	Absent
AFP	Alleged (non - confirmed) food poisoning
Allergen, food borne	A chemical substance in food capable of releasing an allergic reaction in the consumer
Allergens based on Reg. (EU) 2003/89	Allergens and products thereof: Cereals containing Gluten (Wheat, rye, barley oats, spelt, kamut or their hybrids strains) Crustaceans Eggs Fish Peanuts Soybean Milk (including Lactose) Nuts i.e. Almond, Hazelnut, Walnut, Cashew, Pecan nut, Brazil nut, Pistachio nut, Macadamia Nut, Queensland nut Celery Mustard Sesame seeds Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/kg expressed in SO ²
“Allergen-like” intolerance agents	Gluten, lactose
Ambient temperature	Temperature of the surrounding environment, normally synonymous with: Temperature of a room (typically a food handling area) of a catering unit or Temperature outside the unit.
Anaerobic Bacteria	Bacteria which cannot grow in the presence of oxygen but will survive in the absence of oxygen.
Analytical Method	A detailed description of the procedures to be followed in performing tests for conformity with specification.
Approved	Acceptable to the regulatory authority based on a determined conformity with principles, practices, and generally recognised standards that protects public health.
Approved Supplier	A supplier who by an approval audit has demonstrated the ability to consistently meet purchasing specifications, including food safety requirements and service delivery requirements.
Assembly	The placing of prepared food into airline dishes. Also, may be referred to as “meal assembly”, “portioning”, “hot pack”, plating.

Audit (Food Safety Audit, Quality Audit)	A systematic and independent examination to determine Quality of control system Compliance with set critical limits and procedures
Auditor	Person performing an audit
a_w (water activity)	A measure of the free moisture in a food, is the quotient of the water vapour pressure of the substance divided by the vapour pressure of pure water at the same temperature. See also Water Activity
Bacteria	Single cell living organisms. When present in sufficient numbers in food, some may cause food spoilage while others (food poisoning bacteria) may cause disease in the consumer.
Batch – General Definition	A batch shall consist of units of product of a single type, grade, class, size, and/or composition, manufactured, stored, handled or transported under the same conditions, and at essentially the same time.
Best before date	Date mark required on longer life foods that are not subject to microbial spoilage, e.g., frozen foods. Relates to quality rather than safety. See also: Use by date
Blast Chiller	A cooling unit used for fast chilling of cooked food after cooking has been completed and before subsequent storage or handling. The cooling medium is usually air, liquid nitrogen or liquid carbon dioxide.
Blast Freezer	A freezer unit used for fast freezing of cooked or cook-chilled food before subsequent freeze storage. The freezing medium is usually air, liquid nitrogen or liquid carbon dioxide.
Bulk food	Within airline catering the term normally covers prepared, unportioned food.
BSE	Bovine Spongiform Encephalopathy.
°C	Centigrade
Calibration	Checks to ensure that critical items such as scales and thermometers are accurate and precise.
Carrier, healthy	A person who harbours and may pass on harmful bacteria without showing signs of illness themselves. (Also known as an asymptomatic excreter)
CCP	A CCP (Critical Control Point) is a step, location or procedure at which control can be applied and which is essential to prevent, eliminate or reduce a food safety hazard to an acceptable level
CCP Specification	A description of unit control activity of a CCP.
Centre temperature	Refers normally to temperature of food centre. Syn: Core temperature
Certificate of Analysis (COA)	Signed document showing results of analysis carried out on a product.
Chilled Foods	Perishable foods which are kept under refrigeration temperature to extend the time during which they remain wholesome.
Chilled food handling areas	Preparation areas for raw foods, preparation areas for ready-to-eat foods, pastry area, trayset areas, hot meal packing area.

Clean areas	Areas for storage, handling and transport of ready-to-eat foods and clean equipment, e.g., refrigerators for storage of ready-to-eat foods, ready-to-eat food preparation areas, clean sections of pot wash, dish wash.
Clean processes	Storage, handling and transport of ready-to-eat foods and clean equipment.
Cleaning	Removal of food residues and dirt from surfaces, equipment and utensils.
Cold storage	Refrigeration and freezing.
Cold stores	Refrigeration and freezing rooms, cabinets and displays for storage of perishable foods.
Codex Alimentarius	The Codex Alimentarius Commission - a body set up by WHO to co-ordinate food standards internationally.
Colour Coding	Refers to the practice of affixing-coloured stickers coded to the day of the week a product is produced or otherwise handled on all freshly prepared or purchased items. Colour coding may be done in accord with industry wide colour codes for the seven days of the week.
Comminuted	Reduced to small fragments such as ground meat/minced meat.
Conformity	In compliance with
Compliance	Measures and control results which satisfy legal and / or company quality system requirements.
Contaminant	Any microbiological or chemical agent, foreign matter, or other substance not intentionally added to food, which may compromise food safety or suitability.
Control, Food Safety	Monitoring + corrective action.
Controlled atmosphere packaging	A packaging method in which the composition of the atmosphere in the pack is different from air. Continuous control of that atmosphere may be maintained, such as by using oxygen scavengers or a combination of total replacement of oxygen, anaerobic food, and impermeable packaging material. See also MAP.
Convenience food	Ready-to-eat food.
Core temperature	Centre temperature of food.
Corrective action, immediate	The immediate action on food that does not comply with set critical limit of a CCP.
Corrective action, preventive	Periodical actions aimed at reducing non-compliance
Criterion	A requirement on which a judgement or decision can be based.
Critical Control Point	A point, procedure, operation or stage in the food chain, at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.
Critical Ingredient	Ingredient added to food which may cause contamination of product, high risk.
Critical item	A provision of this Code, which, if in non-compliance, is more likely than other violations to contribute to food contamination, illness, or

	environmental health hazard.
Critical limit	Specific limits of physical (e.g. time, temperature...), chemical (e.g. pH) or microbiological CCP characteristics. Synonym : Criterion
Cross contamination	Spreading of microorganisms from a primary source (raw food, food handler) to a food item, either by direct contact between source and food or indirectly via surfaces, equipment, hands etc.
Crustaceans	See shellfish, crustacean
Danger Zone	The temperature range between 41°F and 140°F (5°C to 60°C). Many foods poisoning as well as many food spoilage bacteria will multiply in food held within this range.
Defective Product	Product that does not fully meet the product specification as defined by the client. This invariably also includes product that does not fully meet internal product/process specification.
Detergent	Chemical facilitating removal of grease and dirt from surfaces.
Deviation	Failure to meet a critical limit.
Disinfectant, chemical	A group of approved chemicals used to reduce microbial contamination to safe levels on (previously cleaned) surfaces. Syn.: Sanitiser (U.S.A.)
Disinfection	Reduction of microbial levels on surfaces to safe levels, normally performed by use of heat or chemical disinfectants. Syn.: Sanitizing (U.S.A.)
Document Control	The controls necessary to ensure only current documents are used.
Documentation	All the written production procedures, instructions and records, quality-control procedures, and recorded test results involved in the manufacture of a product.
Dry areas	Areas the cleaning of which is performed by use of small amounts of water or no water, e.g., dry stores, corridors, tray set / Make & Pack.
Dry food	Food that has a low water activity (aw), being less than the minimum growth water activity of the micro-organisms of significance for the particular food.
Dry Ice	Carbon dioxide (CO ₂) solidified by great pressure or as a result of rapid evaporation of liquefied CO ₂ . Used as a refrigerant.
Dry storage	Storage of shelf-stable foods at ambient temperatures.
E.coli 0157:H7	An E. coli strain regularly isolated from raw beef and capable of causing severe food poisoning.
EEC	See EU
EU	European Union
F	Fahrenheit
FDA	Food and Drug Administration (USA)
Final Holding	The last storage period for food products that have been prepared and packaged or packed into boarding equipment for later transport to an aircraft. Generally, the final holding area for food products is a holding refrigerator where products are thoroughly

	chilled prior to transport to the aircraft.
Flight Kitchen	A production kitchen facility operated by an inflight caterer for the purpose of preparing food products for boarding onto passenger aircraft.
Flow Diagram	A systematic representation of the sequence of steps or operations used in the production or manufacture of a particular product.
FMT	Five minutes training
Food contamination	The introduction to/occurrence in food of food poisoning microorganisms, spoilage microorganisms, chemicals, foreign bodies or other unwanted matter that may compromise food safety or wholesomeness.
Food contamination, chemical	Contamination of food with unwanted chemicals.
Food contamination, microbial	Contamination of food with food poisoning microorganisms or spoilage microorganisms.
Food contamination, physical	Contamination of food with unwanted foreign bodies, e.g., stones, metal objects, string, flying and crawling insects etc.
Food flow	Description of the sequence of processes a given food will pass on its way from the manufacturer to the consumer. In an airline catering context, the food flow includes processes and steps before, during and after the flight catering unit.
Food Handler	Any person who directly handles packaged or unpackaged food, food equipment and utensils, or food contact surfaces and is therefore expected to comply with food hygiene requirements.
Food handler, approved	A food handler having undergone the relevant DO&CO food safety training.
Food handling areas	Preparation areas for raw foods, preparation areas for ready-to-eat foods incl. hot kitchen, cold kitchen, pastry area, bakery, tray set areas, hot meal packing area.
Food hygiene	All conditions and measures necessary to ensure the safety and suitability of food for human consumption at all stages of the food chain.
Food poisoning bacteria	A small group of bacteria that may cause disease when present in food in sufficient numbers.
Food poisoning, chemical	Food borne intoxication caused by harmful chemicals in foods.
Food poisoning, microbial	Food borne infections or intoxications, caused by food poisoning bacteria or viruses.
Food safety	Assurance that the food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.
Food Safety Programme (FSP)	A documented (and HACCP-based) system that clearly outlines how things are done in food premises to achieve food safety.
Food Spoilage	The deterioration of food including that caused by the growth of undesirable micro-organisms, which may result in fermentation, mould growth and development of undesirable odours and flavours.
Foodborne disease	Disease, usually gastrointestinal, caused by organisms or their toxins carried in ingested food. Also commonly known as "food poisoning".

Foodborne disease outbreak	The occurrence of two or more cases of a similar illness resulting from the ingestion of a common food.
Food-Borne Illness	Any illness, the cause of which - whether bacteria, viruses, toxins, or other contaminants - is passed to victims through the food they eat.
Food-contact surface	A surface of equipment or a utensil with which food comes into contact.
Foreign Matter	Anything physical that should not be in the product.
Food stores	Dry stores + Cold stores
Foreign body	See food contamination, physical
Freezer	A cold store (walk-in freezer, cabinet, and chest freezer) operated at a temperature that prolongs shelf life of perishable foods with months or years.
Gastro-enteritis	Illness of the digestive system, with typical symptoms diarrhoea, abdominal pain, vomiting and sometimes fever.
General hygiene	The sum of hygiene issues not influencing directly on the safety of food.
GIA	Globale Internal Audit (Audit realised by DO&CO Hygienemanager who is not responsible for the audited unit.
Good Manufacturing Practice (GMP)	That combination of manufacturing and management procedures aimed at ensuring that products are consistently manufactured to meet specifications and customer expectations.
HACCP	Hazard Analysis and Critical Control Points. A management tool providing a structured approach to identification and control of food safety hazards.
HACCP, steps	Main steps include: Identification of hazards, CCP's, SOPs, critical limits, control, verification, review.
Hazard Analysis	The process of collecting and evaluating information on hazards and conditions leading to their presence to decide which are significant for food safety reasons and therefore should be addressed in the HACCP plan.
Hazard, chemical	The unacceptable contamination of food with potentially harmful chemicals.
Hazard Identification	The identification of known or potential health effects associated with a particular agent.
Hazard, microbial	I. Microbial pathogen related to a given food. II. The unacceptable survival, contamination (spread) or growth of pathogens in food.
Hazard, physical	The unacceptable contamination of food with potentially harmful (or unaesthetic) foreign bodies.
HC	Hygiene Controller
High-risk ready-to-eat foods	Are ready to eat foods which support rapid growth of pathogens by exposure to unsafe temperatures. Main groups of ready-to-eat high-risk foods include: Cooked poultry, eggs, meat, fish, shellfish, rice, pasta, sauces,

	<p>soups</p> <p>Composite products which contain such foods, e.g., meals, pâtés, terrines, salads</p> <p>Dairy foods e.g., pasteurized milk, cream, soft cheeses. (Hard cheeses are not included in this category)</p> <p>Cream and custard desserts and pastries</p> <p>Mayonnaise and dressing with pH above 4,5</p> <p>Cured, cold-smoked foods, e.g., fish, air-dried meat</p> <p>Hot-smoked food, e.g., fish and poultry</p>
High-risk raw foods for in-house cook-chill before delivery and service.	Poultry, eggs, meat, fish, shellfish, stews, sauces, soups, pasta, rice
High susceptible population	A group of persons who are more likely than other populations to experience food-borne disease because they have low immune systems or older adults and in a facility that provides health care or assisted living services, such as a hospital or nursing home; or pre-school age children in a facility that provides custodial care, such as a day care centre.
Incubation period (of food poisoning).	The time interval from eating an unsafe food until onset of symptoms of food poisoning.
Inflight Food Safety Auditor	A representative of an airline or an inflight catering firm that goes to a product supplier's facility for the purpose of conducting a food safety audit on the products, practices and processes used by the airline or the caterer.
Ingredients	All materials, including raw materials, air addition, water, additives, and compounded foods, which are included in the formulation of the product.
Intrinsic	Already present.
Laboratory, approved	An internal or external food analysis laboratory approved by the DO&CO approval procedure.
Label	Any tag, brand, mark or statement in writing or any representation or design or descriptive matter on or attached to or used in connection with or accompanying and food or package.
Long Haul Flight	More than 4 hours with the need of a second service
Low –Risk Foods	Foods which do not readily support bacterial growth, and which do not commonly contain microbial pathogens in harmful amounts.
Lux	A measure of light levels
Menu Cycle (Cycle Menu)	A period of time for which a particular set of menus is planned (or the menu set planned for that period). At the end of the predetermined time period, or cycle, the menu set is repeated. This cycling of menus continues until a new menu set is prepared; then it starts anew.
Menu Presentation	<p>The preparation of a sample meal or a spare tray for a particular menu on an airline's menu cycle. This spare tray is then presented to the other employees and management for study and evaluation. Errors in the tray set-up noted during the presentation period are noted for correction through employee training.</p> <p>Also refers to major presentations could be for a system menu</p>

	project or at a particular kitchen, usually for international service, where an airline may rely on locally developed and prepared menus.
Microbial Barriers	Actions or conditions, such as lowering the pH or the water activity level of products, regulating the cooking or storage temperatures used, that will prevent further microbial development in the particular food product.
Microorganisms	Very small living organisms visible only under the microscope, e.g., bacteria, yeast, mould, virus
Modified atmosphere packaging (MAP)	The atmosphere of a package of food is modified so that its composition is different from air, but the atmosphere may change over time due to the permeability of the packaging material or the respiration of the food. Modified atmosphere packaging includes reduction in the proportion of oxygen, total replacement of oxygen, or an increase in the proportion of other gases such as carbon dioxide or nitrogen. See also controlled atmosphere packaging.
Molluscs	See shellfish, molluscs
Monitoring	Checking of Criteria
Outer packaging	The final packaging layer that will protect the wrapping of, or the direct contact of, any food, equipment, packaging, thing, from the introduction of contaminants.
Outsourcing	Buying goods or services from an external company.
Package	The wrapping or container used to encase a food but does not include - a) containers used for the purpose of transporting bulk foods; b) pallet over wraps; c) crates and packages which do not obscure labels on the food; or d) transportation vehicles.
Parts per million	(% is parts per 100). ppm is parts per 1.000.000. Thus 1% is 10.000 ppm.
Pasteurisation	A heat process that kills most pathogenic bacteria in food and slows down the growth of others. Food is heated to a specific temperature for a specified length of time.
Pathogen	A microorganism capable of causing illness.
PHF	Potentially hazardous foods.
Pest	Animals which may contaminate foods, e.g., flying and crawling insects, rodents, birds.
Prerequisite	Procedures, including Good Manufacturing Practices, that address operational conditions providing the foundation for the HACCP system.
Preservatives	Methods of destroying, delaying or inactivating the enzymes and micro-organisms responsible for food spoilage.
Process (verb)	Includes kill, slaughter, dress, cut, extract, manufacture, pack, preserve, transport and store.
Process Specification	A document or documents identifying the raw materials, with their quantities, to be used in the manufacture of a product. Includes a description of the manufacturing operations and procedures including identification of the plant and facilities to be used, processing conditions, in-process controls, packaging materials to be used and instructions for the removal of Finished Product to storage.

Protective Clothing	Clothing provided for wear in the workplace, ie. overalls, coats, hat, gloves, shoes, boots etc. to protect food from risk of contamination.
pH value	Degree of acidity on a scale from 0 to 14 with 7 as the neutral point. Interval 0-7 is acid, while 7-14 is alkaline
Potentially hazardous foods	Foods which rapidly decrease within a short time of storage, and which support rapid and progressive growth of food poisoning bacteria as well as spoilage bacteria. Potentially hazardous foods normally have a pH above 4,5 and a water activity above 0,9.
PPM	Parts per million
Preparation	Joint expression for food handling activities such as slicing, cutting, mincing, portioning, deboning, trimming, glazing, decorating, piping etc.
Pre-preparation	Handling activities on raw foods before heat treatment. Syn.: Pre-cook preparation
Probe, - thermometer	Probe, primarily for checking food core temperature. "Between-pack probe.
Processed	Ready to eat.
Produce	American term for raw (unwashed) vegetables and fruit.
Quality Assurance	Activities undertaken by a firm or organisation to control the quality level of a product or service provided or received. Quality assurance activities are designed to ensure that the performance is in accord with product or service quality standards established at the beginning of the relationship.
QC	Quality Control
Quarantine	The status of any materials or product set aside while awaiting a decision on its suitability for its intended use or sale.
Rating score	Result on a checklist of an audit, verification or inspection.
Raw food	Food which normally needs to be cooked prior service, e.g., raw meat, raw poultry, raw fish, raw shellfish, some raw unwashed vegetables.
Raw high-risk foods	Are those foods which regularly harbour microbiological pathogens, which must be destroyed by cooking or wash/disinfection (e.g., organically grown vegetables for raw service). Raw high-risk foods include: Raw foods of animal origin (poultry, raw eggs, meats, fish, shellfish) for cooking. Raw, organically grown vegetables for wash and disinfection.
Raw Material	Any material, ingredient, starting material, semi-prepared or

	intermediate material, packaging material, etc., used by the manufacturer for the production of a Finished Product.
Ready-to-eat food	The expression covers all foods that do not need any heat treatment or cleaning (vegetables) prior to service. Syn: Precooked foods, processed foods R-t-e foods may need preparation / handling prior to eating such as cutting, slicing, mincing, whipping, mixing, etc. Examples include dairy products, cooked meats / poultry / fish / shellfish, delicatessen items, washed raw vegetables, smoked or marinated foods, bought-in meals and desserts etc.
Receiving control	Checking quality criteria of a bought-in food at receiving point, normally including parameters such as food temperature, labelling, volume / weight, packaging etc.
Reduced oxygen packaging	The reduction of the amount of oxygen in a package by removing oxygen; displacing oxygen and replacing it with another gas or combination of gases; or otherwise controlling the oxygen content to a level below that normally found in the surrounding 21% oxygen atmosphere.
Refrigerator	A cold store (cold room / walk-in refrigerator, cabinet, or display) operated at a temperature which prolongs shelf-life of perishable foods with a few days or weeks.
Ready-to-eat high risk foods	See Definition "High-risk ready-to-eat foods"
RHM	Regional Hygiene Manager
RIA	Regional Internal Audit: Audit realised by the Regional Hygiene Manager
Risk	A function of the probability of an adverse effect and the severity of that effect, consequential to a hazard(s) in food. Risk of a hazard may in a simple way be expressed as the probability with which a hazard may occur.
Risk Analysis	A process consisting of three components: risk assessment, risk management and risk communication.
Risk Assessment	The scientific evaluation of known or potential adverse health effects resulting from human exposure to foodborne hazards.
Risk Characterisation	Integration of hazard identification, hazard characterisation and exposure assessment into an estimation of the adverse effects likely to occur in a given population, including attendant uncertainties.
Risk factor	A risk factor is anything statistically shown to have a relationship with the incidence of a disease, however it does not necessarily infer cause and effect.
Risk Management	The process of weighing policy alternatives to accept, minimise or reduce assessed risks and to select and implement appropriate options.
Rotable Equipment	Equipment, such as china, glassware, or reusable plasticware, that can be washed and reused as service ware for inflight food and beverage service.
Safe and suitable food	For the purposes of the Food Safety Standards, food is not safe if it would be likely to cause physical harm to a person who might later consume it, assuming it was:

	a) after that time and before being consumed by the person, properly subjected to all processes (if any) that are relevant to its reasonable intended use; and b) consumed by the person according to its reasonable intended use.
Safe food	Food that has been produced, stored and distributed under safe conditions and which does not contain harmful amounts of microorganisms, chemicals and foreign bodies.
Sanitary design	Designed and constructed so that an area, conveyance, or equipment: meets the requirements appropriate to its use. can be readily maintained, cleaned, sanitised and sterilised where required to ensure that it is free from contaminants and vermin. and in relation to any equipment or access way in any food area, also means that the equipment or access way is easily accessible for maintenance, cleaning, operation, checking and inspection; and does not allow contaminants to come in contact with any food or other equipment; and precludes the harbouring of accumulation of any contaminants or vermin.
Sanitation	The application of cumulative heat or chemicals on cleaned food-contact surfaces that, when evaluated for efficacy, is sufficient to yield a reduction of 5 logs, which is equal to a 99.999% reduction of representative disease micro-organisms of public health importance.
Sanitise	The process of freeing a surface or object from dirt and micro-organisms.
Sanitiser	A substance that reduces the microbial contamination on inanimate surfaces to levels that are safe from a public health standpoint. The European equivalent to the US expression sanitiser is disinfectant.
Sealed	Free of cracks or other openings that allow the entry or passage of moisture.
Segregation	Separation of raw food and ready-to-eat food in storage and handling.
Separate by distance	To separate to such an extent so as to avoid any possible contact, splash, contamination, etc., between specific functions, processes or personnel.
Separate by time	To end one function or process prior to starting a different function or process, with a cleaning operation in between.
Separate physically	To separate by floor to ceiling solid walls and doors, or to fully protect product by pipelines, enclosed vats, etc.
Severity	The seriousness of the effect(s) of a hazard.
Sewage	Liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.
Shellfish, crustacean	Shrimp, prawns, crabs, lobsters, crayfish
Shelf life	Period of time during which a food remains fit for consumption if maintained throughout the period under controlled conditions pre-

	designated by the manufacturer.
Shellfish, molluscan	Mussels, scallops, clams, oysters, abalone
Short Haul Flight	Less than 4 hours with the need of a second service
Single-use item	An instrument, apparatus, utensil or other thing intended by the manufacturer to only be used once in connection with food handling and includes disposable gloves.
Smooth	A food-contact surface having a surface free of pits and inclusions with a cleanability equal to or exceeding that of (100 grit) number 3 stainless steel. A non-food-contact surface of equipment having a surface equal to that of commercial grade hot-rolled steel free of visible scale; and c) A floor, wall, or ceiling having an even or level surface with no roughness or projections that render it difficult to clean
Soap	See detergent.
Sous vide	“Cooking in the bag” -concept of ready-to-eat food production with long shelf-life of the cooked product under low refrigeration temperature in vacuum bags. Official definition: Cooking of raw foods under controlled temperature / time conditions in heat-stable vacuum bags.
SOP	Standard Operating Procedure. A detailed description of how a particular task is to be carried out. See also GMP.
Special Meals	Meals prepared especially for a passenger’s diet, taste or religious preference and prepared under the airline’s specifications. International special meal codes and guidelines have been agreed upon by the airline industry in an effort to improve the consistency of special meals for passengers.
Specification	A document giving a description of material, machinery, equipment, process, or product in terms of its required properties or performance. Where quantitative requirements are stated, they are either in terms of limits or in terms of standards within permitted tolerances.
SPML	Special meal.
Spore, bacterial	A survival body. Formed by only a few foods poisoning bacterial types, i.e., <i>Bacillus cereus</i> , <i>Clostridium perfringens</i> and <i>Cl. Botulinum</i> .
Spoilage	A process in food which makes the food unsuitable for human consumption through incorrect or prolonged storage.
Supplier, approved	A food supplier approved by the DO&CO Supplier Approval Procedure.
Supplier, divisional	An approve supplier whose products are purchased and used by units across one or several divisions.
Supplier, country	An approve supplier whose products are purchased and used by units across one or several countries.
Supplier, global	The former term global supplier is no longer commonly used, as only 1 or 2 true global suppliers remain.
Supplier, local	An approve supplier whose products are purchased and used by one or several units in a city or a narrow geographical area.

Spoilage	A process in food which makes the food unsuitable for human consumption through incorrect or prolonged storage.
Sterilisation	The process of destroying micro-organisms.
Temperature measuring device	A thermometer, thermocouple, thermistor, or other device that indicates the temperature of food, air, or water.
Thawing	A controlled process for defrosting frozen products.
Thermolabel	Temperature sensitive label used for monitoring operating time / temperature pasteurisation capacity of dishwashers.
Thermometer, probe	A thermometer equipped with a metal probe for checking temperature inside food
Thermometer, infrared	A thermometer equipped with an infrared device for checking food surface temperature. An infrared thermometer may be delivered with or without laser "tracer".
Thermometer, between bags	A thermometer designed for checking temperature between food bags without penetrating bags.
Traceability	Ability to trace and follow a food, feed, food producing animal or substance intended to be or expected to be incorporated into food or feed, through all stages of production, processing, and distribution
Unclean areas	Areas for storage, handling and transport of raw foods, unclean equipment and waste, e.g., refrigerators for storage of raw foods, raw food preparation areas, unclean sections of pot wash, dishwasher, waste collection station.
Unclean processes	Storage, handling and transport of raw foods, unclean equipment and waste.
Use by date	Date mark on perishable pre-packed foods. In most countries it is illegal to sell foods after the Use by date.
Utensil	A food-contact implement or container used in the storage preparation, transportation, dispensing or service of food, such as kitchenware or tableware that is multiuse, single-service, or single-use; gloves used in contact with food; food temperature measuring devices.
Vacuum packaging	Air is removed from a package of food and the package is hermetically sealed so that a vacuum remains inside the package, such as sous vide.
Validation	Obtaining evidence that the elements of the HACCP plan are effective.
Virus, food borne	A group of microorganisms, which may be transmitted by food and may cause illness, e.g., Norwalk virus. Virus may survive, but not multiply in food.
Verification	Check of unit monitoring results by an external or internal auditor in order to assess / verify quality of unit control.
Water Activity	The relationship between the moisture content of the product and the relative humidity of the air surrounding it. Must not be confused with water content
Water Activity Level	A factor which represents a ratio of the vapour pressure of food to that of pure water. It indicates how much available water is in a product that micro-organisms can use for growth. Products that have very low water activity levels, or are very dry, will not support

	microbial growth.
Water, mineral-	Mineral contents may be adjusted. Does not have to be tapped at the well.
Water, natural mineral-	Min. 500mg natural mineral salts per litre. Must be tapped at the well and not be transported in bulk. Carbon dioxide may be added.
Water, well-	As for natural mineral water, but mineral content may be lower than 500 mg / l.
Wet areas	Areas cleaned by wet cleaning procedures, e.g., preparation areas, kitchens, pastry section, bakery, dishwash, pot wash, waste collection station. Walk-in refrigerators may be wet cleaned or dry cleaned.
%	Percent.
°C	Degrees Celsius
°F	Degrees Fahrenheit
cfu/g	Colony forming units per gram
mg/L	Milligrams per litre, which is the metric equivalent of parts per million (ppm)
ppm	Parts per million