



FOOD SAFETY AND STANDARDS
AUTHORITY OF INDIA

Inspiring Trust, Assuring Safe & Nutritious Food

fOSTaC

Food Safety Training & Certification

HANDBOOK

**SAFE STORAGE, DISTRIBUTION &
TRANSPORTATION OF FOOD PRODUCTS**

Safe & Nutritious Food

GMP / GHP for Food Storage, Distribution & Transportation

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1.0 Introduction

1.1: Welcome to the Quality Food Safety- GMP Training Program for food Storage and Transportation business

This guide is created for supporting the implementation of the safety and hygiene requirements in food storage, distribution and transport establishments. This guide will enable such food businesses to understand in more detail how they can comply with the legal requirements which are expressed in more general terms in the regulations and help them to implement good hygiene practices tailored to the characteristics of their function.

To prevent contamination of pathogens, appropriate food safety practices and temperature control play the most important roles during handling, transportation, storage and retailing of the food. The descriptions in this guide facilitate both compliance with regulations and a uniform approach at every stage. It is also a practical support for the necessary checks and records for maintenance of the GMPs& GHPs.

1.2: Learning Outcome

In these modules, the participants will learn about GMPs& GHPs, Food Safety requirements and how to implement it to protect the food products and food stream from any kind of contamination.

This document will be an evolving document. It will be updated considering the experiences and information from food business operators and from competent authorities.

**We associate with you and ask you to join us in learning about and practicing
GMP - FOOD SAFETY in your job.
Be a partner in helping us in producing safe, wholesome, quality food products for this
Country**



2.0 What the law says

2.1: General Responsibility under Food Safety & Standards Act



The Food Safety & Standards Act is applicable to all kinds of food and substances whether processed, partially processed or unprocessed, which is intended for human consumption and includes primary food (except the produce in the hand of a farmer or a fisherman), all types of imported foods, genetically modified foods or foods having genetic ingredients, infant foods, packaged drinking water, alcoholic drink and also includes water used in food during manufacture or preparation.

2.1.1: Main Mandates

2.1.1.1: Primary Responsibility for food safety

The primary responsibility of complying with the law and ensuring safety of food has been entrusted on the FBO. The Act specifies that every FBO must ensure that the articles of food satisfy the requirements under the Act and the Rules/Regulations at all stages of production, processing, import, distribution and sale within the businesses under its control.

The minimum mandatory hygienic and sanitary requirements as provided under the Licensing Regulation are also required to be maintained by the FBOs, both registered and licensed. The FBO is also required to comply with an improvement notices if issued to him by the enforcement agency, failing which the license may be suspended.

a. Safety related to composition of Food

- i. Section 19 specifies that “no article of food shall contain any food additive or processing aid unless it is in accordance with the provisions of this Act and regulations made there under”.It has also specified that “no article of food shall contain any contaminant, naturally occurring toxic substances or toxins or hormone or heavy metals in excess of such quantities as may be specified by regulations”.
- ii. Section 20 of the FSS Act provides for specific provisions to regulate the use of additives and specified limits for other naturally occurring toxic substances and heavy metals.
- iii. Section 21 of the FSS Act regulates pesticides, veterinary drugs residues, antibiotic residues and micro-biological counts in food. This section mandates that “(1) No article of food shall contain insecticides or pesticides residues, veterinary drugs residues, antibiotic residues, solvent residues, pharmacological active substances and micro-biological counts in excess of such tolerance limits as may be specified by regulations. (2) No insecticide shall be used directly on article of food except fumigants registered and approved under the Insecticides Act, 1968.”

Based on the above requirements the following regulations have been notified:

- The Food Safety and Standards (Food Products Standards and Food Additives) Regulations 2011, (the **Additives Regulation**) which specifies the list of additives to be used in general or in particular food products, their limits to be used in articles of food or food products or category, hence limiting the use.
- The Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011 outlines permissible levels of certain contaminants and toxins in food and compliance with these levels are mandatory for food business operators (**FBOs**).
- Section 22 of the FSS Act introduces new foods like Food Supplements, Food for Special Dietary Uses (**FSDUs**), novel foods, genetically modified foods etc. and some processes those are relatively new in the Indian context. This section very specifically outlines that “no person shall manufacture, distribute, sell or import any novel food, genetically modified articles of food, irradiated food, organic foods, foods for special dietary uses, functional foods, nutraceuticals¹, health supplements, proprietary foods and such other articles of food which the Central Government may notify in this behalf”. A detailed regulation on the mandates for this sector including their definitions, composition, ingredients to be used and claims that can be made have been notified in 2017.
- Section 25 of the FSS Act provides that import of food articles will be subject to this Act and shall follow all the regulations laid down under the Act.

b. Safety related to processes associated with food manufacturing and handling

- i. The FSS Act has defined Food Safety Management Systems (**FSMS**) as “the adoption of Good Manufacturing Practices (GMP), Good Hygiene Practices (GHP); Hazard Analysis & Critical Control Points (HACCP) and such other practices as may be specified by the Regulation, for food business”.

“**FSMS** is a system through which an organization in the food chain implements, with a view to provide a framework for internationally harmonized requirements for systematically managing safety in food supply chains. The management systems are more or less interlinked starting at the beginning with good practices to ultimately achieve higher standards or systems. The purpose of implementing FSMS in the factory premises or throughout the supply chain is to achieve clean and hygienic environment suitable to ensure safe food for human consumption and consumer confidence, better brand value and international trade.”

- ii. The FSS Act recognizes the requirement of good hygiene practice (GHP) and sanitary practices for all kinds of food businesses whether small or big and accordingly the Licensing Regulations outline basic safety and sanitary conditions which must be complied with as a condition of the license issued to FBOs. Mandatory compliance with these GHP indicates the shift in regulatory focus towards ensuring safe, clean and wholesome food. Therefore, under the FSS Act, the Rules and the Regulations thereunder, any establishment in which food is being handled, processed, manufactured, stored, and distributed by a FBO, whether a holder of a registration or a license under the Licensing Regulations, is required to conform to the GMP & GHP conditions at all times.
- iii. The FSS Act and the Licensing Regulations also expect a FBO to ideally try and improve upon the sanitary and hygienic conditions at their premises to attain HACCP standards within a pre-determined period.
- iv. The requirements related to GHP and good manufacturing practice (**GMP**)

¹These are interlinked terms and depict very broad concepts on which research is still on but considered similar to Food Supplements

as provided in Schedule 4 of the Licensing Regulation has been into six parts each detailing GMP/GHP practices for the following different types of FBOs–

- ✓ Street Food Vendors
- ✓ All small and petty FBOs as defined under the Licensing and Registration regulation 2011 other than street food vendors
- ✓ Milk and milk product units,
- ✓ Meat processing units including slaughter houses
- ✓ All other license holders
- ✓ Catering and food service establishments.

A FBO engaged in the business of storage and Transportation will have to follow at least the minimum GMP/GHP requirements identified and documented basis the above mentioned criteria depending on the nature of food products being handled.

Section 44 of the Act provides the power to Food Authority to recognize an organization or an agency for carrying out regulatory food safety audit and checking compliance with the Food Safety Management Systems required under the Act or the Rules and Regulations framed thereunder. In accordance with this provision, the Food Authority is proposing to provide for a procedure by which such recognition can be given to notified third party Auditors. Processes for conducting Food Safety Audits, Audit reporting and management requirements will all be laid down as a separate Regulation. A draft Regulation to this effect has already been notified and shall be effective once the final regulation is Gazette notified.

The salient features of this regulation are as follows:

- a. Auditing Agencies for performing audits as detailed in this regulation shall be registered as a legal entity in India and will have to be approved by FSSAI for the purpose based on defined guidelines.
- b. The Authority will notify the Category/type of food businesses which will be subject to mandatory third party auditing, primarily based on their risk classification.
- c. The classification of Food Business shall be done after consideration of the major risk factors like food type, intended customer use, nature of activity of the business, method of processing and/or any other factors that the Authority may prescribe.
- d. Food businesses which are not mandatorily subject to Third Party Auditing but are desirous of using this provision of getting audited by the recognized audit agency or auditors, can also opt for it.
- e. Food safety audits conducted in food businesses will not need any additional regulatory inspections carried out by Central or State licensing authorities except in case of any specific complaints against the food businesses or when it comes to the knowledge of the Authority that the public health and safety is at risk, However, samples can be withdrawn for the analysis of its compositional aspects and compliance at any time.
- f. Allotment of units for audit by Third party auditing agencies will be done through a well-defined random selection process.
- g. Audit will be performed with respect to sanitary and hygienic requirements mentioned in the conditions of license and schedule IV of Food Safety and Standards (Licensing and Registration) Regulations, 2011 and those related to Packaging and labeling requirements, prohibitions, restrictions etc.
- h. The frequency of the audit will be decided by the Food Authority, basis the classification of the business based on its risk profile and also on audit and performance record of the FBO.
 - i. Any non-conformances observed during audit may be classified into one of the following two categories:

- a. Notifiable/Major Non-Conformance- When the audit finding is a serious failure in the food safety management system of the FBO and there is a serious and imminent risk to the public health.

In such cases, the Food Authority after ascertaining the seriousness of the situation will take steps as per procedures laid down in the Act.

- b. Minor Non-Conformance- When the audit finding is a shortcoming in the food safety management system or general regulatory compliance of the FBO but there is no imminent risk to the public health, it will be the responsibility of the Auditor to set up an appropriate timeframe for rectification and follow up as to how the non-conformance has been rectified.

Provided that these non-conformances will not be considered as offence as defined in the FSS Act and penal actions shall not be initiated at the first instance.

- ii. FSSAI shall specify detailed guideline which will identify the essential stages of the audit and what the auditor must do at each of these stages.

c. Safety related to Food Labelling

Food labelling has emerged as one of the major compliance requirement in achieving food safety in recent times and hence the declarations on a product label becomes important. Since a consumer decides on a packaged product on the basis of certain parameters like the product composition / ingredients, nutritional facts, best before or use before date, vegetarian or non-vegetarian logo and additives like preservatives, colours etc., the importance of product label assumes huge significance.

Section 23 of the FSS Act provides for food packaging and labelling:

- i. No person shall manufacture, distribute, sell or expose for sale or despatch or deliver to any agent or broker for the purpose of sale, any packaged food products which are not marked and labelled in the manner as may be specified by regulations:

Provided that the labels shall not contain any statement, claim, design or device which is false or misleading in any particular concerning the food products contained in the package or concerning the quantity or the nutritive value implying medicinal or therapeutic claims or in relation to the place of origin of the said food products.

- ii. Every food business operator shall ensure that the labelling and presentation of food, including their shape, appearance or packaging. The packaging materials used, the manner in which they are arranged and the setting in which they are displayed, and the information which is made available about them through whatever medium, does not mislead consumers.

A “label” has been defined under the Act as “any tag, brand, mark, pictorial or other descriptive matter, written, printed, stencilled, marked, embossed, graphic, perforated, stamped or impressed on or attached to container, cover, lid or crown of any food package and includes a product insert”.

The Food Safety and Standards (Packaging and Labeling) Regulations, 2011 (the Packaging and Labeling Regulations) formulated under the FSS Act details the general and specific requirements for food packaging and the parameters for labelling declarations which is mandatory for all pre-packaged food² products to comply with. It mandates that every packaged food be properly labelled at the hand of the manufacturer or packer before it is distributed for ultimate sale to a consumer. It provides for product specific labelling and mandatory declarations related to use of certain additives such as colours and flavours in food.

1. General provisions related to labelling and packaging (Regulation 2.1 of the Packaging and Labelling Regulations)

- a. Food products should be packed only using food grade and approved packaging materials.
- b. A label should be applied in such a manner that it will not become separated from the container.
- c. The particulars of declaration required must be given in English or Hindi in Devnagari script. Additionally other regional languages may be used for declaration on label.
- d. Contents of the label must be clear, prominent, indelible, and readily legible by the consumer under normal conditions of purchase and use.

2. Mandatory and non-mandatory declarations (Regulation 2.2 of the Packaging and Labelling Regulations)

The declarations which are mandatory are:

- ✓ Name of the food
- ✓ List of ingredients in descending order of their composition with an appropriate title –‘ingredients’
- ✓ Nutritional information per 100g or 100ml or per serving of the product
- ✓ Declaration regarding vegetarian / non-vegetarian in the form of a logo
- ✓ Declaration regarding food additives (class names and international numerical system numbers)
- ✓ Full name and complete address of the manufacturer /packer /importer
- ✓ Net quantity of the product
- ✓ Lot /code/batch identification number
- ✓ Date of manufacture/packing
- ✓ Best before/use by date (storage instructions, if any shall be provided along with)
- ✓ Instructions for use, if any
- ✓ Country of origin (in case of imported produce only)

3. Method and manners related to labelling declarations (Regulation 2.3 of the Packaging and Labelling Regulations)

Every declaration which is required to be made on a package –

- a. Must be legible, prominent, definite, plain and unambiguous. As far as practicable, all the information must be given in such style or lettering as to be boldly, conspicuously and in distinct contrast with the background of the label.
- b. Must not contain false or misleading statements which includes claim of any type, statement, design, device, fancy name or abbreviation.

²Means a food, which is placed in a package of any nature, in such a manner that the contents cannot be changed without tampering it and which is ready for sale to the consumer.

- c. Must preferably be given in one place , however for online printing, printed information must be grouped together and given in one place whereas online information shall be grouped together and given in another place.
- d. Must maintain the specified height of the numeral in the declaration.

4. Specific labelling compliance (Regulation 2.4 of the Packaging and Labelling Regulations)

Certain food products or categories are required to comply with additional declarations. For example, all packages of drinking water bottles must carry the declaration “CRUSH THE BOTTLE AFTER USE” in bold and capital letters. Some other categories of food that carry this additional declaration requirement are edible oils, meat, milk and milk products. Infant foods also require additional detailed labelling requirements etc.

5. Prohibitions (Regulation 2.4.6 of the Packaging and Labelling Regulations) There are certain restrictions/prohibitions on product labelling:

- a. Labels not to contain reference to act or rules or regulations contradictory to required particulars.
- b. Labels not to use word implying recommendations by medical profession.
- c. Unauthorised use of words or pictures showing imitation prohibited. In case a product is a substitute for any food. For example, fruit juice without any fruit and made up of fruit flavour.
- d. The word “pure” shall only be used in case the product is actually pure.
- e. Food advertisements shall not be misleading or contravening the provisions of the FSS Act.

A knowledge of all the labelling requirements applicable to the specific food category being stored or distributed by the concerned FBO and its compliance is the sole responsibility of the FBO.

2.1.1.2: Specific responsibilities of Food Business Operators (section 26)

Every food business operator shall ensure that the articles of food satisfy the requirements of this Act and the rules and regulations as outlined in the above section at all stages of production, processing, import, distribution and sale within the businesses under his control.

The specific requirements are as follows:

- i. No food business operator shall employ any person who is suffering from infectious, contagious or loathsome disease.
- ii. No food business operator shall sell or offer for sale any article of food to any vendor unless he also gives a guarantee in writing in the form specified by regulations about the nature and quality of such article to the vendor: Provided that a bill, cash memo, or invoice in respect of the sale of any article of food given by a food business operator to the vendor shall be deemed to be a guarantee.

Hence every storage/warehouse owner or distributor or transporter should always have specific batch wise invoice or warranty for the products from the respective manufacturers.

- iii. If any food is found unsafe then the whole batch or lot or consignment to which this food belongs shall be presumed to be also unsafe, unless following a detailed assessment within a specified time, it is found that there is no evidence that the rest of the batch, lot or consignment is unsafe.

2.1.1.3: Specific responsibilities assigned to different types of Food Business Operators

Section 27 of the Act imposes specific responsibilities on manufacturers, distributors and sellers of food.

- a. Manufacturer shall be liable for meeting all requirements under this Act
- b. Wholesaler/distributor/seller shall be liable only for:
 - i. Sale after expiry
 - ii. stored or supplied in violation of the safety instruction
 - iii. Unsafe or misbranded
 - iv. Manufacturer unidentifiable
 - v. Received with knowledge of being unsafe
 - vi. Seller shall be liable only for
 - vii. Sale after expiry
 - viii. Handled or kept in unhygienic conditions
 - ix. Misbranded
 - x. Manufacturer unidentifiable
 - xi. Received with knowledge of being unsafe

2.1.1.4: Introduction of Food Recall Procedure

Introduction of food recall procedure under the Act is an important facet of self-regulation. Section 28 of the Act provides that if a FBO considers or has reasons to believe that a food which he has processed, manufactured or distributed is not in compliance with the FSS Act, or the Rules or Regulations made thereunder, he is bound to immediately initiate procedures to withdraw the food in question from the market and consumers indicating reasons for its withdrawal and to inform the competent authorities.

2.2: Other Legal Compliances in Food Storage and Transportation



In accordance with Schedule 4 of the Food Safety & Standards (Licensing & Registration) Regulation 2011, Food business operators are liable to ensure that all stages of production, processing and distribution of food under their control satisfy the relevant hygiene requirements.

Apart from FSSAI license the storage owner and the distributor should also have the following licenses/registrations:

- i. Shops & Establishment license available from local municipal authorities/NOC from gram panchayat
- ii. CST/LST Tax Certificate available
- iii. Pollution control certificate if there is usage of water or any waste is generated

2.3: Commitment of Management to Food Safety – A Prerequisite

- The facility's senior leadership team should demonstrate that they are committed to the implementation of the requirements of the quality and food safety policies and the processes and programs, which will facilitate the continual improvement of quality and food safety management.
- The facility's senior management shall have a system in place to ensure that the site is kept informed of the relevant food safety legislation applicable to the site and as applicable in the country, state or local areas, where the product is intended for storage or transportation.
- The facility's senior leadership team shall be committed towards meeting the local and target market(s)' regulatory requirements.
- The facility senior management shall allocate the requisite human and financial resources required to ensure food safety in compliance with the requirements.
- Senior management shall continuously try to set higher and higher objectives in food safety, beyond just the legal requirements of safety and quality. This will help in achieving an overall safety drive within the organisations and help the country and the concerned State in achieving a higher status in terms of food safety and quality policies.
- A well laid down communication process should exist to ensure that all relevant quality and food safety policies are communicated effectively to the relevant staff and are accessible throughout the facility.
- The facility senior leadership team shall meet in regular frequency to review the performance of the facility's quality and food safety programs. The leadership review shall include at a minimum:
 - i. Action plans and completion timeframes
 - ii. Internal, External audit results
 - iii. Complaints
 - iv. GMP or HACCP management review
 - v. Implementation timeline of actions/decisions
- The facility shall have a demonstrated meeting schedules for each level of employees engaged in the areas of Quality, Safety and Compliance which will enable the issues to be escalated to the senior leadership team in a timely manner.
- The facility shall have a system in place that tracks and trends quality and food safety data including the Audit findings and the corrective actions identified.

3.0 Introduction to Food Safety?



3.1 What is Food Safety?

Safe and Quality food is required to protect our Consumers, Business and Brands and to comply Customer and Legislative requirements.

Food safety is an assurance that food will not cause any harm to the consumer upon consumption. It refers to the practice of limiting the presence of safety hazards whether one time or chronic or acute, that may make food injurious to the health of the consumer. Food safety is about producing, handling, storing and preparing food in such a way as to prevent infection and contamination in the food production chain, and to help ensure that food quality and wholesomeness are maintained to promote good health.

Hence to ensure food safety, it is important that we know and understand the hazards involved and our responsibilities at every stage of food handling and demonstrate that we are taking reasonable precautions to ensure safe food products at all times to avoid any injuries occurring to our consumers.

3.2: Knowing the Food Safety Hazards and GMP requirements in Food Storage and Transportation

3.2.1: What is a hazard?

When we are talking about hazards in relation to food, a hazard is something, presence of which would render the food injurious and the food will not remain safe for consumption.

3.2.2: Food Contamination Hazards:

Any Food manufacturing/Food Material ingredient Supply facility presents the possibility of presence of a hazard which may contaminate the food stream.

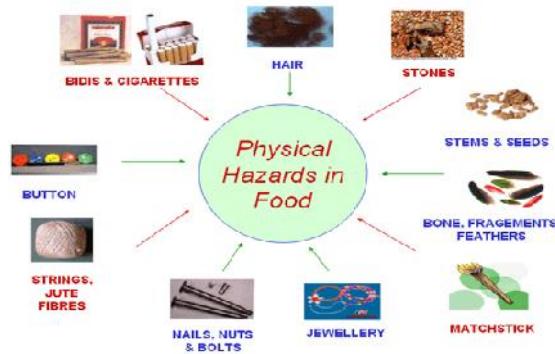
While hazards posed by Allergens are consumer specific and is addressed by proper labelling, the other three types cause food contamination that may be occur in the process of food preparation, handling, storage, transportation, distribution etc.

3.2.2.1: Types of contaminants causing food hazard.

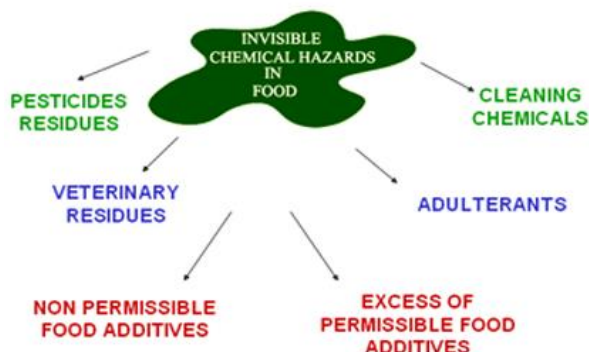


a. Physical Contaminants: Considered to be any solid foreign object or particulate that ends up in the food stream.

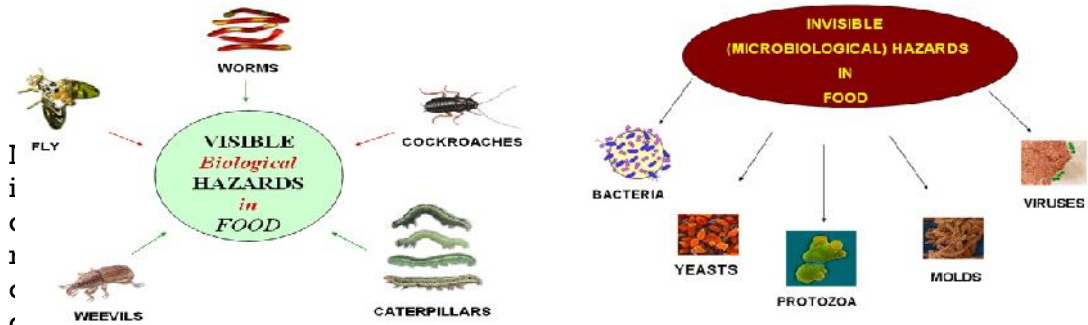
Examples: drill shavings, welding slag, nuts and bolts, tools, pieces of jewellery, staple pins, clean-up debris, pens, nibs, glass pieces, bones in boneless meat pieces etc.



b. Chemical Contaminants are items of any chemical nature like those either inherently present in food due to the agricultural and manufacturing processes like pesticide residues, veterinary residues, excess of food additives etc. or those that may get added in the process of manufacturing or storage like paints, sealants, cleaning chemicals, grease, lubricants, pesticides, glues, epoxies, etc.



c. Biological Contaminants: Considered to be the most challenging of the three contaminants to manage, these are commonly referred to as microorganisms or microbiological hazards and Macro biological hazards. Macro biological hazards are visible if present in food like weevils, cockroaches, flies etc. Microbiological hazards are generally too small to be seen by the naked eye and exist in billions and trillions. Biological contaminants are easily transmitted, transferred, and they rapidly multiply posing an ever present danger.

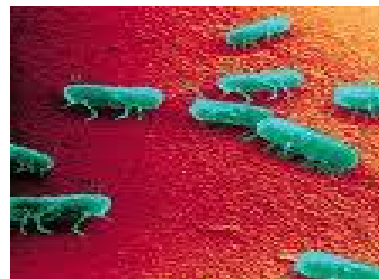


rganisms come in two forms: bacteria and viruses. Viruses are the smallest and can cause illnesses such as the flu, chickenpox, hepatitis, and AIDS. Bacteria generally present a greater danger to food products. They are tough to kill and control, and can spread very easily. They can be dormant for long periods of time, waiting for the opportune conditions to reproduce and spread.

Salmonella, Listeria, and E. coli are three of the most common disease-causing microorganisms. People can become sick and even die when they consume food products contaminated with these disease-causing microorganisms.

Cross - contamination is one of the most common causes which render the food unsafe and causes food poisoning. This happens when harmful bacteria is distributed on food by a device like hands, face or other food or through insects and rodents. These bacteria often come from raw foods, meat, poultry and eggs. So it is of particular importance to handle these foods carefully.

Other sources of bacteria may include Insects, unclean equipment, soiled clothes etc.



3.3: Common Hazards in Storage, Distribution and Transportation of foods

Following are the specific problem areas where food may be at risk for physical, chemical, or biological contamination during food storage and transportation:

- Improper refrigeration or temperature control of relevant food products in storage or during transportation (temperature abuse).
- Improper management of transportation units or storage facilities to preclude cross-contamination, including improper sanitation, backhauling hazardous materials, not maintaining tanker wash records, improper disposal of wastewater, and aluminum phosphide fumigation methods in railcar transit;
- Improper packing of transportation units or storage facilities used during transport, including incorrect use of packing materials and poor pallet quality;
- Improper loading practices, conditions or equipment, including improper sanitation of loading equipment, not using dedicated units where appropriate, inappropriate loading patterns, and transporting mixed loads that increase the risk for cross-contamination;
- Improper unloading practices, conditions, or equipment, including improper sanitation of equipment and leaving raw materials on loading docks after hours;
- Poor pest control in transportation units or storage facilities;
- Lack of employee training and/or supervisor/manager/owner/ driver knowledge of food safety and/or security;
- Poor storage and transportation unit design and construction;
- Inadequate preventive maintenance for storage facilities and transportation units resulting in roof leaks, gaps in doors, and dripping condensation or ice accumulations;
- Poor employee hygiene
- Inadequate policies for the safe and/or secure storage and transport of foods, e.g., lack of or improper use of security seals;
- Improper handling and tracking of rejected loads and salvaged, reworked, and returned products or products destined for disposal; and
- Improper holding practices for food products awaiting shipment or inspection, including unattended product, delayed holding of product, shipping of product while in quarantine, and poor rotation and throughput.

4.0 Ensuring Food Safety



The objective of this manual is to precisely train the FBOs involved in the business of storage and transportation of food products on ways and means to identify and address the hazards in their system so that risks of contamination is eliminated or reduced and the food thus stored and distributed remains safe for consumption.

This guidance is intended for persons engaged in food transport, including persons who transport food (and store it during transport) as well as manufacturers or other persons who arrange for the transportation of food.

4.1: CONTROL OF FOOD HAZARDS

Food business operators should control food hazards through the use of systems such as GMP/GHP. They should:

- i. **identify** any steps in their operations which are critical to the safety of food
- ii. **implement** effective control procedures at those steps;
- iii. **monitor** control procedures to ensure their continuing effectiveness; and
- iv. **review** control procedures periodically, and whenever the operations change.

These systems should be applied throughout the food chain to control food hygiene throughout the shelf-life of the product through proper storage and transportation process design.

Control procedures may be simple, such as checking stock rotation calibrating equipment, or correctly loading refrigerated display units. In some cases a system based on expert advice, and involving documentation, may be appropriate.



4.2 Basics of Preventing Health Risks

For ensuring food safety and to prevent health risks from microbiological, chemical and physical factors in food business establishments, any food business operator must implement measures and controls on the basis of an operational self-control system. In ensuring food safety the following basic principles are important to be remembered:

- i. Food business operators shall put in place, implement and maintain permanent procedures based on the GMP/GHP principles which have been established to reduce the chance of food contamination at each stage. The procedures are detailed out in the following sections.
 - ii. These requirement of identifying hazards and ensuring food safety is established by law and are mandatory to be followed in all food handling areas.
 - iii. Each food business operator is best placed to devise a safe system for his establishment while supplying food and ensuring that the food he supplies is safe; thus, he has the primary legal responsibility for ensuring food safety.
 - iv. The food safety must be ensured at all stages of the food chain.
-

What if we do it wrong?

- Consumer illness & injury
- Consumer dissatisfaction
- Product Recalls
- Loss of Business
- Brand damage
- Bad reputation
- Fines & Prosecution
- Lost Jobs
- Sentencing
- Worst case - Seize/Closure



5.0: General Principles of Food Safety

5.1: Food Safety Checklist

Personal Hygiene

Food Preparation

Hot or cold handling

Refrigerator, Freezer and milk cooler

Food storage and Dry storage

Cleaning and Sanitization

Utensils and Equipment

Garbage, storage and Disposal

Pest Control

5.2: Facility GMP Program – Prerequisite

5.2.1: Facility Building and Grounds:

- i. Walls shall be constructed, finished and maintained to prevent the accumulation of dirt, minimize condensation, minimize mold growth, and facilitate cleaning.
- ii. Floors shall be suitably hard wearing to meet the demands of the process and withstand cleaning materials and methods. They shall be impervious and maintained in good repair.
- iii. Ceilings and overheads shall be constructed, finished, and maintained to prevent the risk of product contamination.
- iv. Drains shall be sited, designed, and maintained to minimize risk of product contamination and not compromise product safety.
- v. Suitable and sufficient lighting shall be provided for the correct operation of processes, inspection of product, and cleaning. Lights should be covered with shatterproof covers.
- vi. Adequate ventilation and extraction shall be provided in product storage and processing environments to prevent condensation, excessive dust, and product contamination.
- vii. Doors shall be maintained in good condition. External doors and dock levelers shall be close fitting and/or adequately proofed. External doors to open product areas shall not be opened during production other than in emergencies.
- viii. A hand wash basin shall be provided adjacent to all access points and in accessible locations throughout the facility, including those required transition areas.
- ix. Amenity and support facilities (e.g., break stations, lockers/storage, etc.) shall be maintained and operated in such a way to prevent contamination or adulteration of food.

5.2.2: Health and Safety

- The warehouse entrance should have strong shutters and the windows should have proper protection to prevent thefts.
- The land should be free of undergrowth for at least 1 meter around the warehouse walls.
- Forklift drivers should have valid license as applicable.
- Sign boards should be available and used to indicate wet mopped floors or temporary floor hazards.
- All electrical panels should be safeguarded.
- Acids, pesticides and other caustic chemicals should be stored under lock & key.
- Material Safety Data Sheets (MSDS) should be available for all chemicals.
- Warehouse should be properly illuminated and ventilated.
- Adequate fire extinguishers should be available in the go-down and should be checked or serviced as per requirement.
- Minimum one mock drill should be conducted per year to ensure that the people are familiar with the extinguishers operation. Records are available.

WARE HOUSE FIRE SAFETY	
<ul style="list-style-type: none"> ✓ Keep adequate and appropriate Fire Extinguishers 	<ul style="list-style-type: none"> ✗ Do not mishandle or operate the fire extinguisher unless it is required and you are trained
<ul style="list-style-type: none"> ✓ Know the locations of fire extinguishers, fire alarm stations. 	<ul style="list-style-type: none"> ✗ Do not block the access to the fire extinguishers
<ul style="list-style-type: none"> ✓ Know your premises evacuation plan 	<ul style="list-style-type: none"> ✗ Do not keep any flammable near by the electrical outlets
<ul style="list-style-type: none"> ✓ Keep free access to emergency equipment 	<ul style="list-style-type: none"> ✗ Do not overload electrical outlets
<ul style="list-style-type: none"> ✓ Display/ Know your area emergency contact Numbers 	<ul style="list-style-type: none"> ✗ Don't use mosquito coils/match boxes inside the warehouse
<ul style="list-style-type: none"> ✓ Switch off all electrical points before closing of premises. 	<ul style="list-style-type: none"> ✗ Don't smoke inside/around premises

- Personnel should be aware of emergency alarms, evacuation route and assembly point in case of emergency

- The first-Aid Box should be available with required contents on site.



- 5.2.3: Documented good manufacturing practices— all storage and transportation units should have documented GMP/personnel hygiene standards that are

consistently applied by all personnel including visitors, temporary staff and contractors.

5.2.4: Personal cleanliness and hygiene have a direct impact on GMPs. Improper or poor personal hygiene will be a contributing factor to product contamination.

- a. All food handlers working in the premise should meet the following personal hygiene requirements when working in a food processing facility:
 - i. Must shower or bathe before coming to work. Be sure to wash hair. Should be clean shaven, or in case of beard and/or mustache, must wear the appropriate net.
 - ii. Should not wear any type of heavy scented after-shaves, colognes, or perfumes.
 - iii. No false fingernails or nail polish.
 - iv. No tobacco/pan/gutkha & spitting in the operation area.
 - v. Must wear hairnets and beard nets at all times while working in a food handling area. All hair, including the hair line and side burns, must be covered by the hairnet.
 - vi. Jewellery, personal items, and loose objects shall not be allowed in to food storage facility if storing raw or minimally processed not prepackaged products. Jewellery includes earrings, any visible piercings, including tongue piercings, necklaces, watches, bracelets, and all rings.
- b. Additional personal items like hand lotions, creams, balms, medicines, purses and play back devices etc., should not be allowed in a food processing facility.
- c. No loose objects or hangings above the waist line.
- d. No food or drink in storage area.
- e. Any exposed open cut or partially-healed cut, scrape, or wound must be covered with a facility supplied bandage along with approved gloves as possible. These bandages shall ideally be bright colored which allows them to be detected if they fall into a food stream.
- f. Ill/sick seek person especially if illness is contagious shall not be allowed to work.

5.2.5: Uniform & foot wear requirements when working in a food facility

- a. A clean facility approved uniform/clothing shall be worn during each shift of work.
- b. Facility dedicated shoes or boots (those boots or shoes that must stay within the facility at all times), stored in a specified locker should be provided which should be sanitized before entering the GMP area.
- c. Uniform and shoes provided should ideally be with metallic buttons or Velcro and designated based on type of storage and transportation business.
- d. Clean uniforms shall be located in designated uniform lockers and shall be worn only

GMP : Personnel Practices



before entering work in GMP areas only. Separate lockers shall be provided for street clothing and Uniforms.

- e. Any temporary employee/Visitor/Contractor shall adhere to facility uniform policy like clean washed aprons/over coats/coveralls etc., Foot coverings (booties/shoe covers) must be provided to cover street shoes if they are used by casual entrants or visitors in GMP areas. Any temporary employee/Visitor/Contractor should confirm that he or she is free from any contagious disease in last 15 days or more.
- f. Inter facility movements with in same location shall be restricted with proper controls. If any employee needs to leave the facility for any reason (this includes for smoking breaks) then he must change into street clothes and wear street shoes.
- g. Whenever entering Facility, everybody must first walk through the footbath at the entrance. After footbath, feet should be wiped on a rug placed by the footbath.
- h. Dedicated foot wear must never be worn outside, unless there is an emergency evacuation, in which case you would then be required to double sanitize your dedicated footwear when you re-enter the facility.

5.2.6: Hand Washing

- a. Dirty hands pose the greatest threat to the safety of food products. Hands can carry harmful, disease-causing microorganisms, chemicals, and physical hazards into critical food storage areas. One of the most important contributions for GMP is to wash hands frequently, and any time after they may have become contaminated.
- b. One must always wash hands before:
 - Entering a GMP area
 - After using the bathroom
 - Anytime they get dirty while working in a GMP area
 - Any time gloves are taken off after wearing on a particular job/ task, and before moving onto another job or task
 - After sneezing or coughing or blowing nose
- c. Proper process of washing hands:
 - Start by wetting the hands
 - Apply soap
 - Using warm water, lather and vigorously wash hands, up to wrists, for about 20 seconds
 - Rinse them for 10 seconds
 - Dry them with a single-use paper towel/Air dry.
 - Apply sanitizer

Good Manufacturing Practices : Entry Protocol



5.2.7: General Cleaning & Hazard control Practices



Every employee, is required to clean up their work area. If the type of work results in dirt and debris that could present a food contamination or safety hazard, cleaning needs to be done on a daily basis or at a decided frequency depending on the nature of work and dirt generated.

- i. Work area should be clean, dry and free of clutter. Avoid leaving tools and materials scattered around the work area.
- ii. Based on Minor, Major and Critical jobs, other controls as required may be applied like isolating area with temporary partitions, barricading area from other movements and other similar controls based on risk assessment.
- iii. No one should bring in or use their own cleaning chemicals, unless they have been approved for use by authorized person.
- iv. Tools/equipment brought into and utilized in facility for any maintenance should be inspected, cleaned, if necessary, sanitized, and approved before they can be used
- v. Use only approved sanitizing wipes/sanitation protocols for tool/equipment sanitizing before and after job.
- vi. Floors are serious contamination hazard areas. Never keep any tools on the floor for any reason. If got dropped on floor sanitize prior to use.
- vii. Any kind of material, chemical, and/ or equipment brought into facility must be considered a food contamination hazard. They must be inspected and approved before entering GMP areas.
- viii. Shall not bring any construction material, pipes etc., with any dirt or other visible contaminants.
- ix. Pallets must be clean and in good condition, and have slip sheets or plastic liners separating the materials from the pallet.
- x. Only chemicals that have been pre-approved by facility may be brought into a facility along with MSDS with clear and correctly labeled. A Chemical Approval system must exist for facility.
- xi. Equipment like lifts, trolleys and large wheeled equipment shall be cleaned and sanitized, when required, before being allowed into facility, most specifically into GMP areas.
- xii. Major construction or demolition work has a high potential to release contaminants existing in walls or floors into the food manufacturing environment. They must be isolated by a floor-to-ceiling covering with all surfaces taped and sealed with suitable warning sign/signs.
- xiii. Negative air pressure and Controls/restrictions must exist if movement (Traffic) unavoidable.
- xiv. All demolition material shall be placed in containments/bags, sealed and disposed of in designated waste areas upon completion of work and/or at the end of the work day.

5.2.8: Utilities and Waste Management

- i. Waste disposal shall be managed in accordance with legal requirements and to prevent accumulation, risk of contamination and the attraction of pests.
- ii. Food products intended to be supplied for animal feed shall be segregated from waste and managed in accordance with the relevant regulatory requirements.
- iii. External waste collection containers and rooms housing waste facilities shall be managed to minimize risk.
- iv. Must remove food waste and other rubbish from rooms where food is present as quickly as possible, to avoid them building up.
- v. Must put food waste and other rubbish in containers that can be closed, unless you can satisfy your local authority that other types of containers or systems of disposing of waste are appropriate.
- vi. These containers must be of appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect.
- vii. Must have adequate facilities for storing and disposing of food waste and other rubbish.
- viii. Stores for waste must be designed and managed in a way that enables them to be kept clean and, where necessary, free of animals and pests.
- ix. Must get rid of all waste in a hygienic and environment friendly way, in accordance with legislation. (There are rules about the way certain types of food waste must be collected and disposed of – follow the regulations laid down by local authorities.
- x. The waste must not be a direct or indirect source of contamination (e.g. touching surfaces that food is prepared on, or attracting pests).

5.2.9: Cleaning and Sanitation

- i. Documented sanitation standard operating procedures (SSOPs) shall be in place and maintained for the building, infrastructure, and all equipment within the facility.
- ii. Facility deep cleaning (such as overheads and other infrastructure) shall be based on risk assessment and the frequency documented on the master sanitation schedule (MSS).
- iii. The facility cleaning frequency shall be compliant with the maximum established run length or applicable regulatory standards.
- iv. Wet and dry cleaning activities shall be segregated to protect areas from cross contamination to production. Following any wet cleaning activities, the area shall be returned to dry conditions before start of production.
- v. Equipment that is cleaned with dry steam shall be followed by a sanitizer/disinfectant step.
- vi. Food spillages are addressed immediately to prevent potential contamination of food contact surfaces or equipment.
- vii. Monthly sanitation audits shall be completed and results trended with corrective actions associated with the MSS based on audit trends.
- viii. Limits of acceptable and unacceptable cleaning performance shall be defined, based on the potential hazards (e.g., microbiological, allergens, foreign material, etc.).
- ix. The cleanliness of equipment shall be inspected before the equipment is released back to production.
- x. Analytical results from verification shall be recorded and used to identify trends in cleaning performance and trigger improvements, where required.
- xi. Cleaning equipment or tools shall be:
 - Fit for purpose.
 - Suitably identified for intended use (e.g., color coded or labelled).
 - Cleaned and stored in a hygienic manner to prevent contamination.
- xii. Clean in place (CIP) systems shall be monitored and documented to ensure their effective operation.

- xiii. Vacuums for cleaning shall have the appropriate filtration.
- xiv. A drain cleaning program shall be in place and based on risk assessment. Drains in wet areas shall be cleaned and sanitized at a minimum of weekly.

5.2.10: Pest Management



- i. The facility shall either contract the services of a qualified pest control vendor or have certification for the regular inspection and treatment of the site to deter and eradicate infestation.
- ii. The frequency of inspection shall be determined by risk assessment and shall be documented.
- iii. Where the services of a pest control contractor are employed, the service contract shall be clearly defined and reflect the activities of the site.
- iv. Bait stations shall be robust, of tamper-resistance construction, secure in place, and appropriately located to prevent contamination risk to product.
- v. In the event of infestation or evidence of pest activity, immediate action shall be taken to eliminate the hazard. Any potentially affected products shall be subject to the food safety incidents procedure.
- vi. Records of pest control inspections, pest-proofing, hygiene recommendations, and actions taken shall be maintained. It shall be the responsibility of the company to ensure all of the relevant recommendations made by their contractor or in-house expert are carried out in a timely manner.
- vii. An in-depth, documented pest control survey shall be undertaken at a frequency based on risk, but typically quarterly, by a pest control expert to review the pest control measures in place.
- viii. The timing of the survey shall be such as to allow access to equipment for inspection where risk of stored product insect infestation exists.
- ix. Annual review of the program is required to evaluate the effectiveness of the pest control program.
- x. Results of pest control inspections shall be assessed and analysed for trends on a regular basis. The analysis shall be used as a basis for improving the pest control procedures.
- xi. A site management representative shall be designated to oversee internal and external (contracted 3rd party) performed IPM services for the facility. The site Pest Control Operator shall be certified in pesticide application by the appropriate governing body of the state or region in which the facility is located. The site representative shall be responsible for identifying pest control program needs, implementation of the program, scheduling pest control work, record keeping, and program maintenance through timely audits.

WARE HOUSE PEST MANAGEMENT Dos & Don'ts

<p>✓ Keep the WH windows, doors & shutters screened / closed when not in use with no structure gaps.</p>		<p>✗ DONT use rat poison cakes and unapproved chemicals inside the food storage warehouse at all times.</p>	
<p>✓ Keep all the food packs intact and organised to avoid any food infestation.</p>		<p>✗ DONT have gaps in shutter / door cable / wire inlet gaps into warehouse to allow pest entry.</p>	
<p>✓ Use only rat catchers, glue pads and fly catcher devices to trap or catch the various pests in the WH.</p>		<p>✗ DONT keep anything good or bad stagnant for more than 15 days.</p>	
<p>✓ Ensure daily inspection and regular pest control treatment of the entire warehouse premise inside and outside.</p>		<p>✗ DONT keep the food packs open, stocks aligned to wall without inspection gaps and unorganised.</p>	

xii. The facility shall take all necessary means to minimize and eliminate conditions that attract pests to the facility grounds or inside of the building including, but not limited to the following:

- Appropriate sanitation shall be conducted to limit pest attraction onto the property and into the facility.
- Food waste and trash generated shall be removed in a timely manner.
- Pest attractant vegetation shall be eliminated from the immediate exterior perimeter of the building.
- Exterior lighting type and placement shall be considered to minimize attraction to buildings and points of entry.
- Physical exclusion of pests shall be performed as part of the facility's routine and corrective maintenance program to reduce points of entry and harbourage sites of pest populations.
- Due to the sensitive nature, the control of birds is primarily accomplished by practices that prevent the entrance or harbourage of birds near or on the facility. Acceptable bird control shall comply with regional regulatory requirements. Facilities shall comply with local adverse event and food safety incident procedures in the event of bird intrusion.

5.2.11: Facility Security

- i. The facility security systems shall ensure that products are protected from theft or malicious contamination while under control of the facility.
- ii. The facility shall complete a documented assessment of the security arrangements and potential risks to the product from any attempt to contaminate or damage product.
- iii. Sensitive or restricted areas shall be defined.
- iv. Identified security arrangements shall be implemented and reviewed at least annually.
- v. Measures shall be in place to ensure only authorized personnel have access to production and storage areas.
- vi. Access to the site by employees, contractors, and visitors shall be controlled.
- vii. A visitor reporting system shall be in place.
- viii. All staff shall be trained in facility security and encouraged to report unidentified visitors.
- ix. Unapproved personnel or unapproved photography and/or use of recording devices including camera phones shall be strictly prohibited. Only facility management may authorize exceptions.
- x. Access to computer process control systems, critical data systems, laboratories, and chemical storage areas shall be limited to those with approved clearance.
- xi. All windows, roof openings, airflow units, water supply, electrical access points, unloading equipment, and trailer bodies shall be secured.
- xii. The facility shall be protected through fencing, gates, or an appropriate deterrent for entry. A system shall be in place to control vehicle access to the facility
- xiii. Once work is completed, all affected floor and wall surfaces shall be cleaned according to the approved clean up/ sanitation procedures for each particular job.

6.0: Specific GMP measures for Food Storage



6.1: Key Design Aspects

6.1.1: Infrastructure

- i. All distribution centres used to warehouse and distribute products shall be constructed, maintained and operated in strict adherence to the Good Manufacturing Practices and sanitation procedures.
- ii. The warehouse shall be of sound construction (e.g., no holes in floor or walls, door gaps, roof leaks, etc.). Roof surfaces, skylights and other openings shall be routinely maintained and free of leaks.
- iii. Truck, rail, dock and personnel doors shall shut tight and shall be kept closed when not in use or shall be properly screened if used for ventilation.
- iv. Clamp trucks, forklifts, and other mechanical equipment shall be maintained in such condition so as not to create oil spills on the floor or product.
- v. Floors, walls, doors, and windows shall be kept in good repair and free of unprotected openings to prevent pest entry.
- vi. Dock levelers shall be well maintained and inspected monthly. Levelers shall be cleaned a minimum of quarterly.
- vii. Light fixtures shall be shielded where breakage is likely (i.e., low ceiling, rail and trailer inspection lights).



- viii. A glass breakage clean-up procedure shall be in place to prepare for and respond to unexpected glass breakage.
- ix. Floors, walls, overheads and pallets shall be free of spillage, heavy dust, webbing or other debris.
- x. Pallets shall be in sound condition.
- xi. An 18" sanitation strip shall be maintained between walls and product to allow for cleaning.
- xii. Damaged cases shall be removed from shipments upon arrival, at the time of shipment and from storage areas.
- xiii. Damaged cases shall be stored in a specific location.
- xiv. Each facility shall have a procedure in place for managing product spills. Spills that may result in possible allergen contamination shall be promptly cleaned and followed by a visual inspection.

6.1.2: Stock Receipt

- Responsible person should be assigned for receipt of goods and procedure for incoming goods should be followed.
- System shall be in place to create and maintain records in cases of any trans-shipment, damage/shortage excess stock and/or any other observations.



The following processes should be maintained-

- Identify the correct procedures for receiving and accepting food deliveries
- Identify the correct procedures for storing based on the type and perishability conditions of the food
- Note if any specific storage conditions have been specified by the Manufacturer/supplier
- List controls/checkpoints for the hazards identified in each food storage area.
- A checklist for inspections of food deliveries should be used. All deliveries of food should meet the following requirements:
 - i. The delivery vehicle must be suitable for the transport of the particular type of food, e.g. all vehicles must be weatherproof and clean.
 - ii. The delivery personnel must behave in a hygienic manner and wear suitable protective clothing.
 - iii. Where food and non-food items are transported in the same vehicle they must be suitably segregated to prevent cross contamination.
 - iv. The food should be free from obvious contamination and in good condition.
 - v. There should be no evidence of infestation.

- vi. The food must be within its 'best before' or 'use by' date, where appropriate. Prepacked goods must, by law, contain additional information such as any storage conditions including storage temperatures, a list of ingredients, origin of food, etc. Any special instructions must be strictly adhered to.
- vii. The packaging must be undamaged. Any damaged containers, torn packages, dented, rusty, leaking or blown cans should be rejected immediately. Blown cans may be the result of bacterial contamination. Under-processing may result in the production of gas, due to the action of the surviving micro-organisms, which causes the can to swell.
- viii. All high-risk foods must be delivered either chilled or frozen. A probe thermometer should be used to ensure that the temperature of chilled food deliveries is less than or equal to +5°C and frozen food is not greater than -18°C. Food which is delivered at the wrong temperature must be rejected.

6.1.5: Security Seals

- All inbound and outbound shipments of raw materials, packaging materials and finished goods shall arrive at the designated facility in secured and sealed vehicles
- Each CFA facility and distribution center shall have procedures in place outlining security seal use, receiving process for unsatisfactory seals, and defined roles and responsibilities of personnel involved in documentation, receiving and shipment of goods.

6.1.5: Time and temperature control



Inadequate food temperature control at storage points is one of the most common causes of foodborne illness or food spoilage. Systems should be in place to ensure that temperature is controlled effectively where it is critical to the safety and suitability of food.

- Temperature control systems should take into account:
 - i. the nature of the food, e.g. its water activity, pH, and likely initial level and types of micro-organisms;
 - ii. the intended shelf-life of the product;
 - iii. the method of packaging and processing; and
 - iv. how the product is intended to be used, e.g. further cooking/processing or ready-to-eat.
- Such systems should also specify tolerable limits for time and temperature variations.

- Vehicles carrying food for bringing to storage locations must be refrigerated if used for transporting perishable foods. Air temperature of delivery vehicles should be 0°C to +5°C for chilled foods and –18°C for frozen food
- Temperature recording devices should be checked at regular intervals and tested for accuracy.

6.2: Food Storage - Specific GMP conditions

Storage conditions should maintain the fitness, nutritional value, appearance and taste of food.

6.2.1: Storage Practices (Good Warehousing Practices)

- i. Products and/or materials shall be stored in a manner whereby contamination by other warehouse products shall not occur. This includes, but is not limited to:
 - Soaps, detergents, toilet goods, or any other items with pronounced and persistent odours.
 - Toxic materials, (i.e., lubricant, household, or industrial cleaners, oils, fertilizers, pesticides, etc.).
 - Items or areas posing a high risk of infestation to products (i.e., pet foods, bulk bagged grains, bird seed, spices, tobacco products, damaged/recoup, and waste storage areas).
- ii. **Stacking norms shall be strictly adhered (Cases are Stacked SKU/Lot wise).**
- iii. **Samples and Consumer offer Packs shall be stacked separately.**
- iv. **Adequate identification system shall be in place so that FIFO should be followed. It should tally with the FIFO register.**
- v. **Loose stocks shall be stored in a Separate area (Loose stocks should be stored in the cases/racks with lock & key and the details should be mentioned on the outside of the case).**
- vi. **All bin-cards / Registers should be updated on real time basis.**
- vii. **The trucks shall be unloaded on the same working day of reporting to avoid paying detention/halting charges. If there are detentions, they are appropriately recorded and Reported to the concerned.**
- viii. **Procedures for rotation and shipment shall be followed to ensure that:**
 - Each product shall be evaluated for shelf life and a maximum allowable age determined to allow shipment from a warehouse.
 - The Aged Inventory Manager or designee shall prepare a monthly report of product age so that action can be taken and to avoid potential age issues.
 - Product that has exceeded its shippable life systematically shall be moved to aged or liquidation status.
 - Aged product shall be turned over to Remarketing and Returns Management or designated area for sales opportunities in closeout channels or set up for donation.
 - Documented self-audits shall be conducted by the facility at a minimum of once per month to monitor quality, pest management and sanitation.

6.2.3: Safe food storage



- i. Stock rotation is essential to avoid spoilage.
- ii. The 'first in – first out' (FIFO) principle must be followed at all times.
- iii. Daily checks must be made on short life products.



- iv. Outer packaging must be disposed of prior to storage to minimize the risk of potential contamination.
- v. Care should be taken to retain any 'best before' dates or codes.
- vi. To prevent cross-contamination from raw foods (especially meat, poultry and shellfish), to cooked or prepared foods it is very important that they are stored separately.



- vii. Storage containers should be of proper design, readily cleanable and maintained in good condition.
- viii. Cleaning materials must be stored in a separate area away from food.
- ix. Store non-food items separately.

- x. In order to protect the food from contamination, accelerated deterioration and multiplication of food poisoning organisms etc., once food deliveries are received, the food should be quickly moved to one of several storage areas namely:
- a. Dry goods storage
 - b. Fruit and vegetable store
 - c. Refrigerated storage
 - d. Freezer storage



a. Dry goods store

Potential hazards which must be controlled in dry goods storage could include bacterial growth due to cross-contamination and excessive moisture, contamination by pests and insects and chemical contamination from cleaning agents.

- i. To control these hazards dry goods stores must be kept cool, dry and clean.
- ii. The store must be well ventilated and free from dampness.
- iii. The store must be bright and food must be stored off the floor on shelving which is made of impervious/nonabsorbent material or coated with an impervious and easy to clean waterproof material.
- iv. Containers used for storage must be covered. Opened packages of food such as flour or sugar should be decanted into well-sealed containers.
- v. Windows should be fitted with insect screens and the store kept free from infestation by rodents and insects.
- vi.

b. Fruit & vegetable store



Potential hazards which must be controlled in fruit and vegetable storage include insect infestation and accelerated spoilage caused by heat and moisture. Fresh vegetables pose a special problem due to the large quantities of soil which they or their containers may bring into the premises.

- i. Pre-washed vegetables should be stored separately.
- ii. Vegetable stores must be clean, well ventilated with good lighting and pest-proof.
- iii. Outer packaging should be removed and all fruit and vegetables should be stored on suitable shelving to allow good air circulation.
- iv. Fruit and vegetables in storage must be inspected regularly and items that show signs of spoilage must be discarded. Salad items and soft fruits (except bananas) should be stored in the refrigerator.

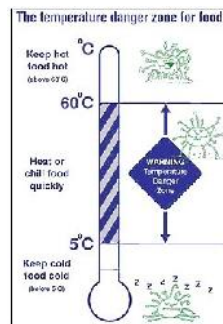
c. Refrigerated storage

Potential hazards that must be controlled in refrigerated storage include bacterial growth, cross contamination, and food beyond date marking. Controls Refrigeration slows down bacterial growth and this is why high-risk perishable foods should be kept refrigerated. Hot food must not be placed directly into the refrigerator as it will raise the temperature of the refrigerator above acceptable limits and may cause condensation leading to cross-contamination of food already inside



- i. Refrigerators must not be overloaded as this prevents cool air circulating. Double stacking must be avoided.
- ii. Refrigerated stores should be maintained at 0°C to 5°C.

- iii. Cooked and ready-to-eat food should not be stored in the same refrigerator as raw foods, unless the cooked and ready-to-eat foods are properly covered and segregated to prevent cross-contamination.
- iv. Raw food should be stored below cooked/ready-to-eat food.
- v. Refrigerated stores must be kept clean and defrosted regularly.
- vi. The doors of all stores should be kept closed except when they are being filled, emptied or cleaned.
- vii. A thermometer and indicating gauges should be provided to check the temperatures of refrigerators, freezers, cold rooms and chilled cabinets on a daily basis. These readings should be recorded.
- viii. Frozen meat, fish and poultry should be defrosted slowly in the refrigerator. Always follow manufacturers' 'use by' dates.



d. Freezer storage



- i. It is vital that foods are in good condition before freezer storage because freezing greatly retards bacterial growth but will not necessarily kill them.
- ii. All deliveries of frozen food must be placed in a freezer without delay.
- iii. Freezers must be maintained at or below -18°C .
- iv. A blast freezer should preferably be used to freeze foods.
- v. Storage freezers are designed to store food that is already frozen.
- vi. Freezers must not be overloaded and the door must not remain open longer than is absolutely necessary.
- vii. Prior to storage all foods should be properly labelled and dated.
- viii. Raw and cooked foods should ideally be stored in separate freezers and all foods placed in freezers should be properly sealed/wrapped in order to prevent cross-contamination.
- ix. Frozen food which has been thawed and not subsequently cooked must not be refrozen.
- x. Deep freezers should ideally be fitted with a high temperature audio alarm and/or a high temperature indicator light.
- xi. During a power failure the freezer should not be opened and in catering establishments if the freezer breaks down there should be an agreed procedure to prevent the waste and contamination of food.



e. Guidance on cleaning chillers

- i. Food should be kept under refrigeration while cleaning the chiller.
- ii. Chiller should be cleaned from top to bottom.
- iii. Chillers should be maintained at the appropriate temperature before the food is returned to the food to the chiller.



6.2.4: Control over damaged Stock

- All finished goods facilities storing and/or distributing products shall have formalized procedures in place to reduce product damage during storage and distribution.
- The damaged goods received from C&FA's & Factories/ Co-packers should be inspected and moved to damage location in the books immediately and the same should be recorded on receipt of damaged stocks.
- While stacking each product, following should be ensured -
 - The cases should be stacked SKUWISE/LOTWISE, for easy identification.
 - Regular Packs and consumer offer packs should be stacked separately.
 - Loose stocks, if any, should be stored in the cases and the details of the product, pack, batch number, No. of pieces etc. should be mentioned on the case.
 - The destruction of damaged goods should be carried out in controlled way and documented

6.2.5: Dispatch – Vehicle/Container Inspection (Inward and Outgoing)

- i. Each C&FA facility and Distribution Center shall have a documented procedure in place to inspect, monitor and record all incoming and outgoing transportation vehicles and containers to ensure that the transportation means do not adversely affect the ingredients, packaging materials and finished goods.
- ii. All transportation equipment shall be sanitary, structurally sound, and has not or will not promote deterioration, contamination or damage to the contents.
- iii. All transportation equipment shall be inspected prior to unloading or loading by competent personnel to ensure it is sanitary, structurally sound, and has not or will not promote deterioration, contamination or damage to the contents.
- iv. The body of the vehicle or container shall be free and the inspection shall include the following:
 - Holes, tears, etc., that would allow damage from weather, entrance and/or harbourage of pests or damage to product itself.

- Nails, large splinters, bolts, or any other protrusions that may damage the product.
- Food material, debris, and other contaminants such as broken glass, metal shavings, chemicals, etc.
- Objectionable odours and mold.
- Infestation or evidence of insect, bird, and rodent activity.
- Doors and hatches shall provide a tight seal upon closing to prevent contamination or damage due to weather, insects, rodents or other pests.
- v. Empty vehicles and containers unfit for loading of products shall be rejected to the carrier and replaced appropriately. This includes vehicles and containers treated with pesticide.
- vi. All vehicles used for transportation of frozen products shall be equipped with appropriate refrigeration and recording devices to maintain product temperature of -10°F (-18°C) or colder that can be documented.
- vii. Bulk tankers shall have appropriate documentation (i.e., wash certificate) to verify that they were properly cleaned and sanitized prior to filling.

6.2.6: Product Life:

- Each product shall be evaluated for shelf life and stability to determine the maximum allowable age for the stages of a product's life from point of manufacture to final use and disposition.
- Case Notes shall be used in conjunction with expiration tables to determine on a daily basis, the correct code to be applied to each product.
- Ages for disposition of product after normal stop-ship and shelf life expiration shall be maintained if applicable

6.2.7: Returned Goods:

- i. A procedure shall be in place to ensure returned goods are in acceptable condition and do not pose a food safety or product quality concern prior to being placed back into finished goods inventory. Returned goods are examined upon receipt for possible product tampering before reworked or repacked. A procedure and records are available.
- ii. The appropriate authorization/documentation for receipt of returned goods shall be processed and include but is not limited to: product name, material number, quantity returned, lot code, who returned and reason for the return.
- iii. All returned goods shall be placed on Hold upon receipt and segregated from shippable finished goods.
- iv. Appropriate warehouse and/or distribution center personnel shall inspect the returned product upon receipt to determine quality food safety standards. The inspection shall include signs of pest activity, odours, foreign material, temperature abuse or damage to the product.
- v. After inspecting the returned product, the appropriate Facility Manager or their designee shall determine and document the returned goods disposition.
- vi. The material for disposition shall be disposed in such a way that there is no misuse of the product.

6.2.8: Finished Good Traceability:

- i. The written instructions shall be available for ensuring traceability of goods being dispatched. A person is assigned responsibility to handle withdrawal in case of an announced emergency.
- ii. The product withdrawal and recall procedure shall include updated emergency contact details (such as names and phone numbers of suppliers, customers and competent authorities).

- iii. The traceability system shall be tested, documented and, where appropriate, adapted at defined intervals to verify traceability including quantity checking.
- iv. Ensure to test the recall program at lease twice in a year.

7.0: Specific GMP measures for Food Transportation



7.1: General Requirements

The transportation and distribution segments are very diverse. In many cases, transportation firms may be handling a variety of products in addition to food, which adds to the complexity of the situation.

The first step is to identify those circumstances that pose a significant health risk, such as improper handling of sensitive products or ineffective cleaning or sanitizing of transportation vehicles. For example, inadequate control of temperatures during transportation and distribution can contribute to microbial growth, formation of mycotoxins, spoilage and/or deterioration of certain products.

GMP/HACCP plans developed by the food industry must consider the control of temperatures and contamination during the transport of foods. A food business operator may require an HACCP plan as a condition of doing business with a particular transportation firm.

Properly designed good transportation practices for the transportation and distribution sector may be a more appropriate approach than HACCP plans. General education programmes are needed to alert food transporters to the potential hazards that can be associated with the transportation and distribution (including storage) of food products. Requirements for handling and distribution of food products or ingredients must be developed by food manufacturers, and these requirements must be communicated to transportation and distribution businesses. Transporters or storage facilities should be required to take proper hygienic measures to protect the food and should be required to keep and retain records that will document their adherence to food safety plans.

7.2: Specific GMP requirements for Transportation of Food

This module outlines basic procedures that are necessary to ensure that all food reaching the consumer is kept free of contamination during transportation. The safe transportation of food is a key step in ensuring that the food that ultimately reaches the consumer is safe to eat and of highest quality, as improper and unhygienic transportation could lead to breaking the food safety circle. Many studies have indicated that improper food transportation could lead to food poisoning or food spoilage.

Food must be adequately protected during transport. The type of conveyances or containers required depends on the nature of the food and the conditions under which it has to be transported.

Good communication between shipper/manufacturer, transporter and receiver of foodstuffs is essential. They share responsibility for food safety on this part of the food chain. Food manufacturers or receivers are responsible for communicating to transporters specific food safety control procedures required during transportation.

7.2.1: Requirements

Where necessary, conveyances and bulk containers should be designed and constructed so that they:

- ✓ do not contaminate foods or packaging;
- ✓ can be effectively cleaned and, where necessary, disinfected;
- ✓ permit effective separation of different foods or foods from non-food items where necessary during transport;
- ✓ provide effective protection from contamination, including dust and fumes;
- ✓ can effectively maintain the temperature, humidity, atmosphere and other conditions necessary to protect food from harmful or undesirable microbial growth and deterioration likely to render it unsuitable for consumption; and
- ✓ allow any necessary temperature, humidity and other conditions to be checked.

7.3: Responsibilities of the Establishments that own the food Transportation Units:

- i. Bringing all of their food transportation vehicles to the Food Control for inspection.
- ii. Establishing and following a regular maintenance program for the vehicle, especially for the cooling units.
- iii. A regular cleaning and maintenance program shall be provided. Documents of such programs shall be available upon request.
- iv. Personnel in charge in cleaning and disinfecting the food transportation unit must be properly trained in handling chemicals and in carrying out the cleaning and disinfecting process.
- v. Conducting an annual calibration for the cooling units.
- vi. In case of any breakdown for the vehicle or its cooling units, an alternative vehicle conforming to the stipulated standards shall be provided promptly to transport the foods to ensure their safety and hygiene.
- vii. If a vehicle is changed from transporting non-food products to transporting food products, the establishment has to ensure that proper and thorough cleaning is conducted to avoid food contamination, and records shall be kept.
- viii. Foods shall be loaded and unloaded from and at the designated areas and away from physical, biological, or chemical contaminants.
- ix. The establishment has to ensure that the driver or the food transporter does not turn off the cooling units while transporting the foodstuff.
- x. Complete temperature logs shall be kept for chilled or frozen vehicles. These logs shall be available upon request.
- xi. Ensuring that proper air circulation is secured throughout the whole shipment within the required time. In this regard the foods shall be organized in such a manner that guarantees chilling or freezing the foods as required.
- xii. The food establishment has to provide training for the food transporters in order to be aware about their responsibilities regarding following up proper transportation practices. Hence, the food transporters should have basic training about the food safety

- during loading, transportation, and delivery of foods. Training should be focused on the type of food being handled and the necessary corrective action to implement in case of non-conformances in good distribution/transportation practices
- xiii. The foods which become unfit during transportation have to be identified and shall be disposed of properly. In this regard the following information has to be recorded and submitted to the food control authority upon request: - Number or vehicle or container. - Last transported consignment. - Temperature record during the transportation. - Maintenance and cleaning records.
 - xiv. If a transportation spill occur involving a food shipment, the food transporter has to ensure that: All potentially hazardous foods that have been subjected to temperature abuse (i.e. have remained within the danger zone of 5°C to 65° C for more than 4 hours) are identified and discarded in such a fashion that precludes the food from being utilized for human consumption.
 - xv. Canned or packaged goods that have been subjected to unintentional freezing, which has compromised the integrity of the package (e.g. burst can seams) should be itemized and discarded in such a fashion that precludes the food from being utilized for human consumption.
 - xvi. Procedures for product recall must be available which could permit fast, accurate and efficient recall/segregation and disposal of the affected food items.
 - xvii. Contact information of buyers, delivery personnel and each personnel involve in the food chain must be readily available upon request to facilitate product recall implementation.

7.4: Usage and Maintenance

- a. **Vehicles and transportation equipment:** The design and maintenance of vehicles and transportation equipment to ensure that it does not cause the food that it transports to become unsafe. For example, they must be suitable and adequately cleanable for their intended use and capable of maintaining temperatures necessary for the safe transport of food
- b. **Transportation operations:** The measures taken during transportation to ensure food safety, such as adequate temperature controls, preventing contamination of ready to eat food from touching raw food, protection of food from contamination by non-food items in the same load or previous load, and protection of food from cross-contact, i.e., the unintentional incorporation of a food allergen.
- c. Conveyances and containers for transporting food should be kept in an appropriate state of cleanliness, repair and condition. Where the same conveyance or container is used for transporting different foods, or non-foods, effective cleaning and, where necessary, disinfection should take place between loads.
- d. Where appropriate, particularly in bulk transport, containers and conveyances should be designated and marked for food use only and be used only for that purpose.
- e. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection.
- f. Persons engaged in food transport should concentrate their efforts on the following broadly applicable preventive controls:
 - i. Appropriate temperature control during transport;
 - ii. Sanitation, including:

- a. Monitoring and ensuring the sanitation and condition of transportation vehicles as appropriate;
 - b. Pest control; and
 - c. Sanitation associated with loading/unloading procedures;
- iii. Appropriate packaging/packing of food products and transportation units (e.g., good quality pallets, correct use of packing materials);
 - iv. There should be good communications between shipper, transporter and receiver; and
 - v. Vehicles and/or containers used to transport food must be kept clean and maintained in good repair and condition, to protect food from contamination.
 - vi. Where necessary, they must be designed and constructed to allow adequate cleaning and/or disinfection.
 - vii. Items used to hold food (e.g. boxes) in vehicles and/or containers must not be used for transporting anything other than food where this may cause contamination.



- viii. Where vehicles and/or containers are used for transporting anything other than food, or for transporting different types of food at the same time, the products must be separated effectively as necessary.
- ix. Where necessary, vehicles and/or containers used for transporting food must be capable of keeping food at appropriate temperatures and allow those temperatures to be monitored.
- x. Bulk foodstuffs in liquid, granulate or powder form are to be transported in receptacles and/or containers/tankers reserved for the transport of foodstuffs. Such containers are to be marked in a clearly visible and indelible fashion, in one or more locally spoken languages or are to be marked 'for foodstuffs only'.
- xi. Where conveyances and/or containers have been used for transporting anything other than foodstuffs or for transporting different foodstuffs, there has to be effective cleaning between loads to avoid the risk of contamination.

8. Documentation and Records - Legal and Organizational Requirements

9.1: Documentation

- Following licenses shall be available at CFA / Distributor
 - Local Sales Tax Certificate
 - Central Sales Tax Certificate
 - FSSAI License
 - Municipal Corporation License / License under Shops & Establishments Act. / NOC from Gram panchayat
 - Pollution control certificate if required basis usage of water and volume of waste generated
- The records / details of monthly verification of stock and other requirements shall be available.
- Keep up-to-date documents and related records.
- Review the procedures whenever there is a change in any product or process of storage or transportation. This means that there must be procedures in place to manage food safety 'hazards' in the business.
- All procedures should be written down, well documented, updates as needed and records kept which can be checked by the local authority if required.
- The regulations are flexible enough to allow the robustness of the procedures to be in proportion to the size of the business and the type of food handled. This means that small businesses may have very simple procedures and records. If both raw and ready-to-eat food are being handled, then extra care procedures may be required to control harmful bacteria

8.2: Lot Identification

Lot identification is essential in product recall and also helps effective stock rotation. Each container of food should be permanently marked to identify the producer and the lot.

8.3: Product Information

All food products should be accompanied by or bear adequate information to enable the next person in the food chain to handle, display, store and prepare and use the product safely and correctly.

8.4: Labelling

Pre-packaged foods should be labelled with clear instructions to enable the next person in the food chain to handle, display, store and use the product safely. Knowledge of mandatory food labelling requirements are critical. At every stage pre-packaged products should be checked for proper labelling and compliance with mandatory provisions

8.5: Customer Experience

- Customer complaints if any, shall be handled effectively and information used to reduce recurring complaint levels.
- All complaints shall be recorded, investigated and the results of the investigation and root cause of the issue recorded, where sufficient information is provided.
- Actions appropriate to the seriousness and frequency of the problems identified shall be carried out promptly and effectively by appropriately trained staff.
- Complaint data shall be analysed for significant trends, used to implement ongoing improvements to product safety and quality, and to avoid recurrence.
- Facility specific complaint performance targets shall be established and reviewed on a regular basis and actions against these targets put in place to effect improvement.
- The facility shall have a procedure in place to ensure that all complaints are reviewed and corrective actions communicated to their stake holders.

8.6: Training:

- All active employees shall receive refresher training and assessment of compliance a minimum of annually as per the Employee Training Policy
- All personnel including new employees, temporary employees and contract persons shall be trained for their roles and responsibilities and all procedural requirements

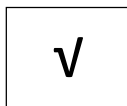
8.7: Inspection Checklist – Food Storage

INSPECTION CHECKLIST – FOOD STORAGE / WAREHOUSE

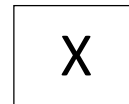
Name of the Establishment:	
Address of premises:	
Tel. No.: Fax No.:	
E-mail Address:	
Category of licence (Central/ State)	
License No.:	
Kind of business:	
Name of the Manager / Authorized Signatory:	
Date of Self-Inspection:	
Time of inspection:	
Details of Food inspector:	
Area Inspected:	

Please mark as status as appropriate

In order



Not in order



Sr. No.	Area	Status	Corrective action timeline
1. Location and layout of the establishment			
1.1	Warehouse is located away from environmental pollution and industrial area producing toxic gases		
1.2	Warehouse does not have direct access to residential area		
1.3	Warehouse is adequately lighted, properly white washed and painted		
1.4	Ceiling, floors and walls are free from accumulation of food waste, dirt, grease or other visible obnoxious matters		
1.5	The floors have adequate drainage, easy to clean and disinfect		
1.6	Ventilation systems like air filters, exhaust fans shall be designed and installed so that air does not flow from the contaminated areas to clean areas		
1.7	Grills of coolers, air conditioning units, fans, condensers and humidifiers are cleaned regularly		
1.8	Warehouse is cleaned once a week or before if needed		
1.9	Wash basins, Washrooms are located away/ outside the warehouse		
1.10	Waste storage is located away from the warehouse		

2. Equipment And Fixtures			
2.1	Non-toxic and Non corrosive containers and equipment are used		
2.2	Appropriate facilities for the cleaning and disinfecting of equipment and instruments and preferably cleaning in place (CIP) system are adopted; wherever necessary		
3. Pest Control Facility			
3.1	Absence of pets, rodents or pests		
3.2	All openings like doors, windows are screened with wire-mesh or insect proof screen to avoid the entry of the insects, rodents or pests		
3.3	Pest control is carried out and records are maintained for the same		
3.4	Treatment with permissible chemical, physical or biological agents within the permissible limits are carried out		
4. Storage Systems			
4.1	Cleaning chemicals and equipment are not stored in the warehouse or in the premises		
4.2	Packaged food is stored at appropriate/required temperature		
4.3	Temperature and humidity log sheet is maintained		
4.4	All stored product carry appropriate product information as per regulation (Name label, Date tagged, etc.)		
4.5	Storage of packaged food products is subject to FIFO (First in, First Out), FEFO (First Expire First Out) stock rotation system as applicable		
4.6	Appropriate arrangement for storage of food & food ingredients provided and adequately segregated and labelled.		
4.7	Stored food products are kept above the floor on pallets/ racks and away from the walls		

4.8	Adequate documented system SOPs is in place for core processes like storage, distribution and transportation, etc.		
4.9	Packaging materials are stored away from the stored food products		
4.10	Packaging material and pack seals are intact		
4.11	Packaging material and pack seals are intact		
5. Personal Hygiene			
5.1	Staff's health check-up records are available and maintained		
5.2	Practises like smoking, spitting, chewing, coughing, scratching nose are not followed in the premises		
5.3	No person suffering from any infection or contagious disease is allowed to enter the premises		
5.4	Food handlers have been provided with proper clothing, head gear, gloves and separate footwear		
5.5	Cloths and other personal belonging is stored outside the warehouse/premises		
5.6	Separate changing area is provided for the staff		
5.7	Food handlers have undergone proper food handling, food hygiene and storage procedure training		
5.8	A display board of Do's and Don'ts for the workers shall be put up inside the warehouse/premises		
5.9	Hand wash station is well equipped with water, soap, paper towel/ dryer and sanitizer		
6. Waste Disposal Facility			
6.1	Waste bins are lined, covered and foot or swing operated		

7. Cleaning And Maintenance			
7.1	Cleaning and sanitation programme is drawn up, observed and the record of the same is properly maintained		
7.2	Cleaning chemicals are handled and used carefully in accordance with the instructions of the manufacturer and are stored separately away from food materials, in clearly identified containers, to avoid any risk of contamination		
8. Audit / Documentation And Records			
8.1	A periodic audit of the whole system according to the Standard Operating Procedure conducted regarding Good Manufacturing Practices/Good Hygienic Practices (GMP/ GHP) system		
8.2	Appropriate records of storage, distribution, cleaning and sanitation, pest control and product recall are kept and retained for a period of one year or the shelf-life of the product, whichever is more		
9. Product Information And Consumer Awareness			
9.1	All packaged food products carry a label and requisite information as per provisions of Food Safety and Standards Act, 2006 and Regulations so as to ensure that adequate and accessible information is available to each person in the food chain to enable them to handle, store, process, prepare and display the food products safely and correctly and that the lot or batch can be easily traced and recalled if necessary.		
10. Training			
10.1	Workers, managers/ supervisors underwent appropriate food handling, storage and food hygiene training		