**Thai Union Group Food Safety & Hygiene Requirements**
**Version 2.0 August 2016**

## INTRODUCTION

Welcome to version 2.0 of the Thai Union Group Food Safety & Hygiene Requirements (TU-FSH). This standard is indicated the level of Food safety and hygiene such provided with an all-encompassing the food safety with good manufacturing practice, the quality and the legality. In addition, this standard is including a concern with the social responsibility and the environmental issues.

## OBJECTIVE

- All products produced by TU are consistent quality, safe and comply with relevant legal requirement and meet our customer's requirements through whole supply chain".
- TU-FSH is guideline and applies to all suppliers such as raw material, ingredients and premix excludes the packaging suppliers.
- In case standard revision, TU group team will inform to our suppliers before issue new version.

## SCOPE OF AUDIT

This Standard can be applied to food manufacturing/processing operations e.g. raw material, ingredients and premix supplying to TU group.

- The Supplier shall plan to produce TU's products at the time of audit for the intended scope of the assessment.
- If no TU's production onsite audit, the supplier shall inform TU or CB before audit day and the team would consider acceptance if the product produced on the audit day is similar TU's products which include the same production line and equipment.
- The excluded product from this audit could be produced at the same production line with TU's product. However the site has the responsibility to ensure no contamination or adverse impact to TU's products.
- Where the area that out of scope may contaminate to TU's product, the auditor has the discretion to continue the audit until sufficiently satisfied that the intended scope of the assessment.
- Any doubt or questions please contacts TU Group team.

## AUDIT PLANNING

- This is available for existing onsite audit and the same audit process used for sites within the enrolment programme. (Announced audit)
- CB informs the supplier for the audit appointment and TU Group receives the description at the same time.
- After confirm audit day by supplier, CB would send the audit plan to the supplier.
- Any emergency or inconvenient onsite audit on that appointment day, the supplier shall immediately inform to CB to be permitted by CB or TU group to postpone the audit.

**AUDIT PROCESS AND NON–CONFORMANCE REPORT (NCR)**

- The auditor conducts open meeting to inform the objective of audit including the confidentiality.
- The auditor preparing audit conclusion and report the audit result as conducted at the closing meeting.
- The supplier acknowledges the audit result included with non-conformity report and recommendation excludes the score of audit.
- All corrective action with objective evidence for each non-conformance raised must be sent to TU group within 7 days of the audit.
- The follow up each non-conformance will be conducted by TU group who will advance contact to supplier. The auditor prepares the audit report to TU Group not more than 15 days after audit.
- Final scoring and audit grading will be considered by TU after the completion of all corrective action required.
- TU Group /CB issue the Certificate of Thai Union Group Food Safety & Hygiene requirements with the score of audit.

**NON –CONFORMANCE DEFINITIONS**

| Level | Definition |
|---|---|
| Critical (C) | Failure to meet a food safety standard or a legal standard; where this failure puts the customer and or TU brands integrity at risk. |
| Major (M) | A deficiency which requires prompt attention to prevent a potential food safety failure or legal issue from arising; where this failure may potentially put customers or the TU brands integrity at risk. |
| Minor (N) | A deficiency which requires attention to improve Good Manufacturing Practice standards, Due Diligence documentation (our ability to defend a legal challenge) or to achieve compliance with TU-FSH standards. |
| Observation (O) | An area of concern, a process, document or activity that is currently conforming but may, if not improved, result in a nonconforming system, product. |

**AUDIT SCORING AND GRADE**

| Level | Score |
|---|---|
| Critical (C) | 0 |
| Major (M) | 3 |
| Minor (N) | 5 |
| Accept (A) | 8 |
| Observation (O) | 8 |

**SCORING CRITERIA AND FREQUENCY OF AUDIT**

- The auditor conducts the audit according to this requirement.
- Not applicable (N/A) requirement could not be applied for the suppliers if their products or process are related the quality and food safety issue.
- The auditor will conduct assessment for whole TU requirement. Justification will be indicated for any not applicable requirement.
- The non-applicable requirement will not be accounted for scoring and grading of the audit.

| Grade | % scoring | Frequency of audit |
|---|---|---|
| A | 90-100 | Every a year |
| B | 70-89.99 | Every a year |
| C | 60-69.99 | Every 6 months |
| D | Less than 59.99 | Suspended |

However, for Grade D or any critical level result are an automatic fail and would be deemed unsatisfactory. The supplier must be suspended for immediately remedial with TU's management. Commercial continuity will be based on re-audit or TU's management approval.

## CONTENT

**Section**

## 1. Quality and Food Safety Management system

1.1 Quality and food safety manual

- Quality manual must be in place include the procedure and work instruction which are distributed to their sections to work correctly.
- The supplier shall have a documented policy which states their intention to ensure meet its obligation to products safe and legal products to the specified quality and its responsibility to their customer (TU group).This policy are followed and form part of supplier's full Quality Management System.

1.2 Document and Record control

The supplier shall operate an effective document control system included with recoding forms to ensure that are available and in use;

- The method for the identification and authorisation of controlled documents.
- A list of all controlled documents indication the lastest version number
- The record of reason for any changes or amendments to documents.
- Record shall remain legible, readily identifiable and retrievable.
- All date in record are genuine, no erasing and the sign off should be indicated.
- Records are in good storage and protection.
- Records shall be retained relevant the legal control or shelf life of the product with 12 months plus (depend on which one is longest)

1.3 Selection and monitoring of vendor's performance

1.3.1) The supplier shall undertake a documented vendor approval and assessment. This would decrease the likelihood of having issues that affect the safety, legality and quality of finished product and ensures trust in the supply chain.

- The approve vendor list AVL is indicated with manufacturer including any materials supplied via agent or broker.
- The vendor approval criteria and monitoring are based on the risk assessment or hazard analysis of HACCP principles.
- The approval and monitoring procedure shall be based on one or a combination of;
  - a) Third party audits or certification GFSI (GFSI recognized schemes) e.g. BRC, IFS, SQF, FSSC 22000 etc.
  - b) The vendor audit checklist is undertaken the good manufacturing practice (GMP) HACCP principles, traceability and product safety.
  - c) For suppliers assessed as low risk, self-audit questionnaires are permitted and reviewed every 3 years to ensure that any potential risks form raw materials included with packaging to the safety, legality and quality of the final product are under.

If the vendor could not practice as this requirement, the supplier should inform TU group for further consideration.

1.3.2) The documented procedure for the service provider approval and monitoring shall be in place:

- The service provider list including laboratory testing and calibration.
- The approval criteria is consider that vendor should certified and accredited ISO 9001, ISO/IEC 17025 etc.

1.3.3) The supplier shall develop, document and implement and effective incident management the Business Continuity Plan (BCP) and tested internally on basis using different scenarios at each test occasion such as natural disasters e.g. floods, bushfires ;or manmade events e.g. terrorisms, strike, accidents, etc. The crisis management plan shall be developed and communicated to key person to ensure the impact of these events is reduced and product supply can still continue to TU group.

1.3.4) Approved specifications which are formally TU group agreed must be in place.

1.3.5) The TU Group's Code of Conduct shall be maintained and presented during the audit.

## 1.4 Internal Audit

Internal audit programs must involve an evaluation of all processes and procedures carried out in areas relevant to TU group products.

- Internal audit is documented planned at least once annually covering all TU requirement with the frequency based on risk assessment e.g. the activity, previous audit performance, etc.
- Internal audit shall be carried out by appropriately trained competent auditors, who are independent from the audited department.
- There shall be the internal audit checklist to define the objective evidence and internal audit report. The corrective action should be taken for finding audit as non-conformity results.
- GMP audit shall be established at least monthly.

## 1.5 Corrective and Prevent recurrence

The supplier shall provide documented procedure to demonstrate that any failure to system shall be identified and make necessary corrections and prevent recurrence.

- Reviewing nonconformities
- Determining the causes of nonconformities and evaluating the need for action to ensure that nonconformities do not recur
- Records of the results of action taken and reviewing the effectiveness of the corrective action.

1.6 Handling of non-conforming materials and products, quarantine and release.

The supplier shall ensure that any out-off specification product is effectively managed to prevent release. There shall be documented procedures for managing non-conforming products which include;

- Define responsibilities for decision making on the user or disposal of products appropriate to the issue, e.g. destruction, reworking, downgrading to an alternative label or acceptance by concession.
- Allocate and segregate area must be applied for the quarantine of raw materials, packaging or finished products.
- The acceptance criteria of releasing non conformity products.
- Records of the decision on the use of disposal of the product.

Permitted rework must be appropriately controlled in use, must not negatively affect to product quality, safety or legality and the final product must still meet the TU group specification that is approved by TU team.

1.7 Traceability System

An effective traceability system provides a means for the accountability of all raw materials, components, work in progress, packaging and finished products. It allows them to be identified and fully traceable to source. There shall be documented procedures for managing traceability which include;

- Identification of raw materials, including primary and any other relevant packaging and processing aids, intermediate/semi-processed products ,part-used materials, finished products , materials pending investigation and rework, shall be adequate to ensure traceability.
- All relevant records relating to food safety, quality and legality are keep in place.
- The company shall test the traceability system across the range of product groups to ensure traceability can be determined from raw material to finished product and vice versa, including quantity check/mass balance in acceptance criteria 95-105%. This shall occur at a predetermined frequency and results shall be retained for inspection. The test shall take place at least annually. Full tractability should be achievable within 4 hours.
- The traceability system should be tested for every shift e.g. night shift.

1.8 Product Withdrawal and Recall

The supplier shall have a documented product withdrawal and recall procedure. This shall include;

- Guidelines for deciding whether a product needs to be recalled or withdrawn if needed such as with issues of product safety, legality or quality being in doubt or any reputational risk and the records to be maintained.
- This information must be communicated to TU group immediately where it affects the supply or brand integrity of TU group within 2 hours.

- An up-to-date list of key contacts or reference to the location of such a list. e.g. recall management team, emergency services, suppliers, TU team, certification body, regulatory.

Key contact information must be maintained for both working and out-of-hours contacts authority.

- All communication with external bodies, Government or enforcement agencies, regarding TU brands products must be coordinated following the guidelines.
- The product recall and withdrawal procedures shall be tested, at least annually with TU group product or similar products, in a way that ensures their effective operation and the recorded should be maintained.
- The supplier must carry out withdrawal and recall test to verify robustness of the process or systems in place for TU group products or similar. Out of working hours test must be carried out as a minimum once time. (Not required to contact to TU team when doing recall and withdrawal test.)

1.9 Customer Complaint Handling

The supplier must have a complaints procedure and policy in place covering TU products which include;

- The complaints shall be recorded, investigated and the results of investigation and root cause of the issue recorded where sufficient information is provided.
- Complete records must be kept and the outcome of the investigation promptly reported to relevant personnel and departments for related corrective action plans to be carried, which must result in the prevention of a re-occurrence. Steps must be in place for corrective actions to be passed on to the relevant departments.
- Corrective actions must be supplied to TU team when requested.

A prompt response must be provide to TU group within 24 hours, investigation and corrective action must be promptly applied appropriate to the severity of the food safety issue within 24 hours as well as within 3 days of quality issue.

## 2. Site Standards

2.1 External and location standard

Location establishments should not be located anywhere, after considering such protective measures, it is clear that there will remain a threat to food safety or suitability. In particular, establishments should normally locate away from;

- Environmentally polluted areas and industrial activities which pose a serious threat of contaminating food.
- Areas where wasted, either solid or liquid, cannot be removed effectively.
- Areas prone to infestations of pests.
- Areas subject to flooding unless sufficient safeguards are provided.
- The external areas shall be maintained in good order. Where buildings are surrounded by grassed or planted area.
- External traffic routes under site control shall be suitably surfaced and maintained in good repair to avoid contamination of the product.
- The building fabric shall be maintained to minimise potential for product contamination (e.g. elimination of bird roosting sites, sealing gaps around pipes to prevent pest entry, ingress of water and other contaminants).

2.2 Site security

The supplier shall undertake a documented assessment of the security arrangements to ensure that products are protected from theft or malicious contamination whilst under the control of the site;

- Areas shall be assessed according to risk for access control or sensitive or restricted areas shall be defined, clearly marked, monitored and controlled.
- Measures shall be in place to ensure only authorised personnel have access to production area, warehouse, storage areas, including bulk silos, premix, water tanks, chemical storage, cooking area, laboratory etc.
- Access to the site must be restricted to employees, contractors and accompanied visitors. The record shall be in place.

2.3 Layout, Product Flow and Segregation

The factory layout, flow of processes and movement of personnel shall be sufficient to prevent the risk of product contamination and to comply with relevant legislation.

a) High-risk areas
b) High-care areas
c) Ambient high-care areas
d) Low-risk areas
e) Enclosed product areas
f) Non-product areas

The access points or premises shall allow sufficient working space and storage capacity to enable all operations to be carried out properly under safe hygienic condition including waste and rework area.

Temporary structures constructed during building work or refurbishment, etc. shall be designed and located to avoid pest harbourage and ensure the safety and quality of products.

2.4 Building Fabric/Materials are used for construction

The following must be considered as part of premises construction and layout based on the site location and product risk:

Building;

- Walls, floors and ceilings must be impervious, sealed and easily cleaned and maintained to eliminate any risk of contamination. Design and construction to minimise accumulation of dirt, debris and pests and no wood material except window/door frame.
- There shall be plan of the site which designates areas where product is at different levels of risk from contamination.
- Good ventilation
- Adequate lighting must be provided for clear working visibility.
- Where the area with stairs, walkway, conveyor shall be protected contamination.

Equipment

- All equipment shall be constructed of appropriate materials. The design and placement of equipment shall ensure it can be effectively cleaned and maintained.
- Equipment which is direct contact with food shall be suitable for food contact and meet legal requirements where applicable.

Ventilation

- Adequate ventilation and/or extraction must be provided to minimise condensation or process dust or these aspects must be otherwise controlled.

## 2.5 Water, ice, air and other gases

Utilities used within the production and storage areas shall be monitored to effectively control the risk of product contamination.

- All water used as a raw material in the manufacture of processed food (potable water), ice, steam, the preparation of products, or for equipment or plant cleaning shall be supplied in sufficient quantity, be potable at point of use or pose no risk of contamination according to applicable legislation as Thai FDA or higher level and shall be tested annually or relevant the risk assessment.
- Air, other gases and steam used directly in contact with of as an ingredient in products shall be monitored to ensure this does not represent a contamination risk.
- Compressed air used directly in contact with the product shall be filtered.

## 2.6 Maintenance

Maintenance Procedures and methods used must ensure product safety or quality is not affected during maintenance tasks.

- There shall be a documented planned maintenance schedule or condition monitoring system which includes all plant and processing equipment with detail;
    a) list of processing equipment and part changed
    b) frequency
    c) responsible person as site engineer
- In addition to any out planned maintenance programme, where there is a risk of product contamination by foreign bodies arising from equipment damage, the equipment shall be inspected at predetermined intervals, inspection results documented and appropriate action taken.
- The physical check and record for prior to re-commencement of manufacture.
- The break down record of equipment is kept in place.
- Cleaning must be carried out post-maintenance unless it can be demonstrated there is no risk to product.
    a) Maintenance work shall be followed by a documented hygiene clearance operations, which records that product contamination hazards have been removed from machinery and equipment.
    b) Suitable protective clothing and hand washing facilities must be provided for maintenance staff and checking record is in place.
    c) The food contact equipment shall be cleaned according to the cleaning program with the record in place.

- An effective maintenance process must be documented as physical count of all tools equipment and materials used are undertaken and all items are accounted for prior to re-commencement of manufacture. The correction and corrective action shall be provided if some part or tools are lost.
- Temporary (tape, wire) engineering repairs must be minimised. These must not affect product safety, quality or legality and the use of temporary fixes must be promptly documented and rectified with permanent solutions as soon as possible and within a defined time.

2.7 Cleaning

Housekeeping and cleaning systems must be in place to ensure that the necessary standards of hygiene are maintained at all times and the risk of product cross contamination is minimised.

- Cleaning and disinfection programmes should ensure that all parts of the establishment are appropriately clean, and should include the cleaning of cleaning equipment.
- Cleaning and disinfection programmes should be continually and effectively monitored for their suitability , effectiveness and documented . Where written cleaning programmes are used, they should specify:
    a) responsibility for particular tasks
    b) areas, items of equipment and utensils to be cleaned
    c) frequency of cleaning
    d) method of cleaning
    e) detergent and disinfectant used
    f) cleaning record and verification program

- Cleaning chemicals should be handled and used carefully and in accordance with supplier manufacturers' instructions and stored with locked, where necessary, separated from food, in clearly identified containers to avoid the risk of contaminating food. Not permit for use of strong odour detergent or disinfectant.
- All cleaning equipment must be identified and captive to the risk area where it is used.

2.8 Staff facilities

The supplier must provide following facility design aspects are required to be addressed based on product risk at least;

- Adequate locker/storage facilities for personal.
- Toilets shall be adequately segregated and shall not open directly into production, packing and storage areas. Toilets shall be provided with hand-washing facilities comprising.
- Hand wash stations must be located to facilitate hand washing before starting work and hand washing taps should be non-contact operation.
- Boot wash station should be provided with liquid soap.
- All hand washing station must have sufficient quantity of water, antibacterial liquid cleanser and complete hand drying e.g. single use towels or dryers.
- Advisory sign are promptly for hand washing at the hand wash station e.g. before entering production or toilet including the method of washing.

- Clean protective clothing, footwear and hair covering, mask, gloves should be available for use prior to entry to the facility where applicable to minimise the risk of product contamination.
- Jewellery shall not be worn at high care and high risk area. The supplier shall document and communicate to all employees, contractors or visitors the rules regarding the wearing of protective and good practice before entering production area.
- Designated smoking facilities must be provided as permitted by law and be located away from product handling or storage areas. Smoker's areas must be controlled to prevent contamination risk to product.
- The facilities for storage of personal food e.g. lunches shall be available. These must be maintained in a clean condition. The bins should be appropriate outside of production area.
- Catering facilities shall be managed such that the product is not contaminated e.g. the allergen and the food is safe for staff to consume.

The changing facilities in the ambient high care, high-care and high risk area shall be provided which include;

a) The instructions for to indicate the correct dress up / down and entry / exit procedures to the production area(s)
b) Outdoor shoes must be stored separately from work shoes within the changing area.
c) The hand-washing during the changing procedure shall be incorporated to prevent contamination of the clean protective clothing.

2.9 Personal hygiene

The procedures regarding personal hygiene must be developed, documented and implemented commensurate with the product risk in consideration with the following requirements:

- Jewellery shall not be worn in Rule or rule is appropriate controls for acceptable wearing of jewellery; which must be specified risk assessment to ensure so as to minimise the risk of product contamination.
- The staffs are being a carrier of a disease or illness likely to be transmitted through food or visibly infected skin lesions (boils, cuts, etc.) should not be allowed to enter any food handling area if there is a likelihood of their contaminating food. Any person so affected should immediately report illness or symptoms of illness to the management.
- Spitting, eating, smoking in production and relevant area must be prohibited.
- Rules for the control of personal medicines such as not permitted to bring to production line.
- The personal hygiene training program should provide annually.
- Regularly monitoring staffs who contact or risk to product safety compliance to the personal hygiene policy at before and during working.
- The medical check for employees shall be done annually regarding the FDA /national legislation.
- Where there may be a risk to product safety e.g. staffs/contractors who contact inner package or products shall be required to complete medical check in food poison item (stool culture or rectal swab)
- Where supplier produces livestock products and supply to TU group, the medical test should include Virus B checking.
- Procedures must be in place for managing any bodily fluid spillages e.g. vomiting, bleeding etc. within the production and storage areas.

2.10 Training

The Supplier must ensure all staff are trained and supervised in the activities which they carry out includes;

- The Supplier must define the training needs that coordinate with job specific skills. The training program may include the on-the-job training and any specific training required.
- The training program shall indicate;
  a) Training material e.g. VDO, media etc.
  b) The method and criteria of training evaluation
- Records of training of all employees in the relevant procedures to their duties must be documented and maintained.
- Training program shall be reviewed for efficiency.
- Activities which directly affect product safety, quality or legality must be identified. Staff performing these tasks must have job specific training or must otherwise demonstrate competency. The training programme is including but not limit;
  a) All staffs must be trained in the personal hygiene and food allergen management
  b) This includes the staffs who responsible for pest control program.
  c) The cleaning staffs or any responsible persons for cleaning program.
  d) The staffs who responsible for chemical control shall be trained the handling and preparation of chemical used includes safety.

2.11 Chemical and Physical product contamination control

2.11.1 Chemical Control

The supplier must place to manage the use, storage and handling of non-food chemicals to prevent chemical contamination which includes;

- An approved chemical list
- The identification label and Safety Data Sheets (SDS) available in chemical storage areas and other key locations.
- Segregated and secure storage with restricted access to authorised personnel for prevention of cross contamination from other food products
- Only food grade lubricants may be used on food handling/contact equipment. Information must be available to demonstrate food grade suitability for materials used and non-allergen composition.
- In case use chemical for RO process, this chemical should be grade for food industry and indicate to certificate.

2.11.2) Metal Control

There shall be a documented policy and procedure which includes;

- There shall be control of use of sharp includes knives, cutting blades on equipment, needles and wires.
- The checking record must in place and investigate when these materials are broken.
- The cutting blades, staples and paper clips shall not used in product area.
- Where staples or other items are present as packaging materials or closures shall be no permitted for TU group product to minimise the risk of product contamination.

2.11.3) Glass, brittle plastic, ceramic and similar material control

The Supplier shall carry out as a minimum a risk assessment of foreign material from glass, brittle plastic, ceramic and similar material as;

- All glass and brittle plastic, ceramic and similar material in production , storage areas and canteen must be listed on a register and layout, where they may pose a risk of product contamination including the glass of equipment from laboratory when intake in the production area.
- The record checks of condition of items, carried out at a specified frequency that is based on the level of risk to the product.
- The procedure must be in place for the management of Glass, Glass Like Materials & hard (Brittle) Plastic breakages e.g. stopping of production and Restriction of movement through the affected area, Quarantine of all food and packaging materials possibly contaminated. A record of product, codes, and quantities to be logged for reference. Completion of an incident log and sign off that production can restart, by a responsible/senior person and record of incident should keep in place.

2.11.4) Wood Control

- The use of Wood in production and storage areas where possible must be eliminated. Where this is not possible the use must be minimised and suitably controlled to ensure it is in good condition and free from damage or splinters which could contaminate products.
- Wooden pallets and pallet debris must be controlled to prevent contamination risk of product.

2.12 Foreign body detection and removal equipment

2.12.1) Foreign body detection and removal equipment

- The supplier shall provide document assessment e.g. HACCP study and carried out on each production process to identify the potential use of equipment to detect or remove foreign body contamination such as filters, sieves, metal detector, magnets, optical sorting equipment, gravity separation, x-ray, colour sorter etc.
- The supplier shall indicate the work instruction of this equipment, the location of the equipment or any other factors influencing the sensitivity of the equipment shall be validated and justified to ensure effective use of equipment to remove or detect foreign bodies.
- The frequency of the testing of the foreign body detection and/or removal equipment is defined and takes into consideration as well as record shall be in place.
- In case of the equipment is fail, the supplier must identify, hold and prevent the release of any affected materials.

2.12.2) Filter and Sieves

Material retained or removed by the system shall be examined and recorded to identify contamination risks include the filters and sieves shall be monitored for damage.

2.12.3) Metal Detector

The supplier must establish and implement documented procedure for operation and testing of metal detector which includes,

- The test pieces shall be marked with the size and type of test material contained.
- The diameter of test piece shall be specified as Ferrous (Fe) ≤ 2.0 mm, Non-Ferrous (Non-Fe) ≤ 3.0 mm. and Stainless steel ≤3.0 mm.
- The metal detector testing have 2 objectives as challenge the effectiveness of the reject system so that it does not blanket reject and test packs used in the validation of the detector.
- There are 2 steps of test pieces testing should be test as use of test pieces without pack of products and test by passing successive test packs through the unit.
- The metal detector installation shall consider automatic rejection device and a secure unit accessible include with the responsible person.
- Procedures must be documented and implemented which specify corrective action in the event of machine failure (whether due to failure to detect a test piece or failure to reject product)e.g. the products are hold in the period of last test before failure detection.

2.12.4) Magnets/Optical sorting equipment

Documented and record shall be in place and maintained for the inspection, strength testing and integrity checks.

Where used the colour sorter, the supplier shall establish and implement documented procedure for operation accordance with the manufacturer's instructions.

## 2.13 Waste disposal

The supplier shall manage in accordance with legal requirements and to prevent accumulation, risk of contamination and the attraction of pests.

- Waste must be collected in containers, correctly disposed and must not pose a risk to the environmental.
- Waste container should be adequate, designed covered or doors kept closed as appropriate to prevent attraction of pets.
- Where the wasted are removed by contractors, the licensing is required for the disposal or categorised waste and records shall be maintained.
- If the supplier's packaging is used address, trademarks and any other indications of the TU group identity. Where surplus stock is donated to charitable organizations, the production site must ensure the product is adequately controlled by the organization and must not be reused or reprocessed, it shall be removed by licensed contractors and records of disposal shall be maintained.

## 2.14 Pest control

The whole site must be protected by an effective pest prevention program which reduces the risk of infestation;

- Identified the bait at the appropriate location and up-to-date plan of the full site.
- The frequency of inspection inside is every 2 weeks and outside is once a month.
- Where used, live catch systems must be inspected inside once a week and outside as once a month.

- All bait or monitoring stations must be secured to wall/floor/fixed structure to prevent removal and access by unauthorized staff.
- Label and Material Safety Data Sheets must be included for all chemicals used and approved by government.
- The pest control record should be included name of chemical used, concentration and location where used.
- The bait station should properly clean.
- Electronic fly killer (EFK) units shall be placed with tray to prevent contamination from any part of insect.
- A trained company employee and nominated deputy must be accountable for managing the pest control program.
- The inspection record shall be maintained includes correction and corrective action should be taken when pest control deviation.
- Pest control measure must be in place to prevent pest ingress and have adverse impact to product or the premise.
- When audit at site, shall not found the evidence of infestation as presenting a risk of contamination to products, raw materials or packaging.

In case of the Pest Control Provider (PCP) is contracted, the signed contract shall be in place including

- The license to operate the health hazard or any relevant documents.
- Identified the bait at the appropriate location and up-to-date plan of the full site
- The frequency of inspection inside is every 2 weeks and outside is once a month
- Label and Material Safety Data Sheets must be included for all chemicals used and approved by government.
- The pest control record should be included name of chemical used, concentration and location where used.
- Company employees engaged as PCPs must have proof of appropriate certified and licence as required by state or local regulations.
- Training to the supplier's pest staff can be conducted by PCP or other qualified experts.
- Trend analysis of pest control data must be evident where activity is measurable, acceptable limits should be established with action evident when levels fall outside specified limits.

The supplier must verify the PCPs work as required in this standard.

2.15 Storage and Transportation

The supplier managing its storage and transport providers and vehicles would ensure that all its products are protected during all stages of transport. This would reduce any risk or likelihood of occurrence of product contamination or damage to the product.

a) All equipment used for transportation / processing /storage of raw materials include packaging, work in progress and finished product to the customer, contract packer or further storage facilities, must be suitable for the purpose and maintained in good repair and in a clean and hygienic condition.
b) Identification must be maintained for tractability.
c) Storage management should be FIFO (First In First Out) or FEFO (First Expired First Out).

d) Refrigeration units for transporting and storage of chilled and frozen foods must be maintained in good condition include transport in the temperature controlled area.
e) Where temperature control is required, the storage shall be capable of maintaining products temperature with specification.
f) Segregation of products where necessary to avoid cross-contamination (physical, microbiological or allergens)
g) The raw material, packaging and products shall not be laid on floor directly and set the gab of area between wall and these materials or products.
h) Where some packages are opened wrap to use, the others one as remain packs shall be kept in good condition to prevent contaminate from environment and maintain identification for traceability.
I) Where non-complied packages shall be segregated and carry out the protected system of wrong used.
J) Where storage outside is necessary, items shall be protected from contamination and deterioration. These items shall be checked before used.
K) Good maintenance and hygiene conditions must be in maintained for all modes of transport used to carry work in progress or finished product include carry out by checking of preload to ensure product safety, legality and quality of materials is not affected or compromised in any way.

- If product or raw material need temperature controlled transportation, there must be documented procedures in place to ensure the temperature requirements are maintained.
- Maintenance systems and documented cleaning procedures shall be maintained for all vehicles and equipment used for loading/unloading.
- The supplier shall ensure product is held under secure conditions during transport, particularly when vehicles are parked and unattended.
- Documented shall be in place to ensure product safety and quality in the case of vehicle or refrigeration equipment breakdown.
- The transportation management shall ensure the legality such as the movement documents issued by DLD.

## 3 Food Safety Plan and HACCP

### 3.1 The HACCP Food Safety team –Codex Alimentarius step 1

The HACCP Team includes representation from all sections of the business who have Product and or Process knowledge & expertise, including but not limited to: Food Safety / QA; Production; Cleaning; Purchasing; Maintenance; Warehouse; and other relevant functions.

- The team leader shall have an in-depth knowledge of HACCP and be able to demonstrate competence and experience.
- The team leader shall be trained by government or the reliable organization.
- The team members shall have knowledge of HACCP principle, products, process and associated hazards.

In the event of the site not having appropriate in-house knowledge, external expertise may be used, but the day to day management of the food safety system must remain the responsibility of the company.

The supplier shall define a detailed scope for each HACCP plan, including the TU's products and processes covered.

The supplier shall collect all relevant information needed to conduct the hazard analysis, maintained, documented and updated. The company will ensure that the HACCP plan is based on comprehensive information sources, which is referenced and available on request and specify;

a) The latest scientific literature
b) Historical and known hazards associated with specific food products
c) Relevant Codex Codes of Practice
d) Food safety legislation
e) TU's requirement (if any)

3.2 Describe the product - Codex Alimentarius step 2

A full description for each product or group of products must be developed, which includes all relevant information on food safety. As a guide, this may include the following, although this is not an exhaustive list:

a) Composition (e.g. raw materials, ingredients, allergens, recipe)
b) Origin of ingredients
c) Physical or chemical properties that impact food safety (e.g. pH, aw)
d) Treatment and processing (e.g. cooking, cooling)
e) Type of food contact packaging
f) Packaging system (e.g. modified atmosphere, vacuum)
g) Storage and distribution conditions (e.g. chilled, ambient)
h) Target safe shelf life under prescribed storage and usage conditions

3.3 Identify intended use - Codex Alimentarius step 3

The intended use of the product by the customer, and any known alternative use, must be described, defining the consumer target groups, including the suitability of the product for vulnerable groups of the population (e.g. infants, intolerance, elderly, and allergy sufferer)

3.4 Construct a process flow diagram - Codex Alimentarius step 4

A flow diagram must be prepared to cover each product, product category or process. This must set out all aspects of the food process operation within the HACCP scope, from raw material receipt through to processing, storage and distribution. As a guide, this should include the following, although this is not an exhaustive list:

a) Plan of premises and equipment layout
b) Raw materials including introduction of utilities and contact materials (e.g. water, packaging)
c) Sequence and interaction of all process steps
d) Outsourced processes and subcontracted work
e) Process parameter
f) Potential for process delay
g) Reworking and recycling
h) Low-risk/high-risk/high-care area segregation
i) Finished products, intermediate/semi-processed products, by-products and waste

3.5 Verify flow diagram - Codex Alimentarius step 5

The HACCP food safety team shall verify the accuracy of the flow diagrams by on-site audit daily and seasonal variations must be considered and evaluated. Records of verified flow diagrams must be maintained.

3.6 List all potential hazards associated with each process step, conduct a hazard analysis and consider any measures to control identified hazards - Codex Alimentarius step 6, principle 1

The HACCP food safety team must identify and record all potential hazards that are reasonably expected to occur at each step in relation to product, process and facilities. This shall include hazards present in raw materials, those introduced during the process or surviving the process steps, and allergen risks. It must also take account of the preceding and following steps in the process chain.

The HACCP food safety team must conduct a hazard analysis to identify hazards which need to be prevented, eliminated or reduced to acceptable levels. Consideration must be given to the following:

a) Likely occurrence of hazard
b) Severity of the effects on consumer safety
c) Vulnerability of those exposed
d) Survival and multiplication of microorganisms of specific concern to the product
e) Presence or production of toxins, chemicals or foreign bodies
f) Contamination of raw materials, intermediate/semi processed product, or finished product.
g) Where elimination of the hazard is not practical, justification for acceptable levels of the hazard in the finished product shall be determined and documented to carry out;
   - The control measure or eliminate or reduce the hazard to acceptable level.
   - The pre-requisite programs are maintained and validation.
   - Consideration may be given to using more than one control measure.

3.7 Determine the critical control points (CCP) - Codex Alimentarius step 7, principle 2

- For each hazard that requires control, control points shall be reviewed to identify those that are critical. This requires a logical approach and may be facilitated by use of a decision tree.
- Critical control points (CCPs) must be those control points which are required in order to prevent or eliminate a food safety hazard or reduce it to an acceptable level.
- If a hazard is identified at a step where control is necessary for safety but the control does not exist, the product or process shall be modified at that step, or at an earlier step, to provide a control measure.

3.8 Establish critical limits for each CCP- Codex Alimentarius step 8, principle 3

For each CCP, the appropriate critical limits must be defined in order to identify clearly whether the process is in or out of control. Critical limits must be:

- Measurable wherever possible (e.g. time, temperature, pH)
- Supported by clear guidance or examples where measures are subjective (e.g. photographs).

The HACCP food safety team must validate each CCP. Documented evidence must show that the control measures selected and critical limits identified are capable of consistently controlling the hazard to the specified acceptable level.

3.9 Establish a monitoring system for each CCP - Codex Alimentarius step 9, principle 4

A monitoring procedure must be established for each CCP to ensure compliance with critical limits.

3.10 Establish a corrective action plan - Codex Alimentarius step 10, principle 5

The HACCP food safety team must specify and document the corrective action to be taken when monitored results indicate a failure to meet a control limit, or when monitored results indicate a trend towards loss of control.

3.11 Establish verification procedure – Codex Alimentarius step 11, principle 6

The supplier shall establish to confirm that the HACCP plan, including controls managed by prerequisite programs, continues to be effective. Examples of verification activities include:

a) Internal audits
b) Review of records where acceptable limits have been exceeded
c) Review of complaints by enforcement authorities or customers
d) Review of incidents of product withdrawal or recall

Results of verification shall be recorded and communicated to the HACCP food system team.

3.12 HACCP documentation and record keeping – Codex Alimentarius step 12,principle 7

Documentation and record keeping must be sufficient to enable the site to verify that the HACCP controls, including controls managed by prerequisite programs, are in place and maintained.

3.13 Review the HACCP plan

The HACCP food safety team must review the HACCP plan and prerequisite program at least annually and prior to any changes which may affect product safety. As a guide, these may include the following, although this list is not exhaustive:

a) Change in raw materials or supplier of raw materials
b) Change in ingredients/recipe
c) Change in processing conditions, process flow or equipment
d) Change in packaging, storage or distribution conditions
e) Change in consumer use
f) Emergence of a new risk (e.g. known adulteration of an ingredient)
g) Following a recall
h) New developments in scientific information associated with ingredients, process or product
i) Change the pre-requisite program or HACCP plan

## 4. Product Control

### 4.1 Raw material control

The supplier should apply HACCP principles, assessment biological, chemical and physical hazard including allergen, radiological agents (HARPC USA) in order to provide the specification of raw materials, ingredients and packaging contacted food.

All raw materials and packaging intake shall be risk assessed and based on risk of adulteration analyzed and checked to ensure no adulterated material is received. The packaging is contacted food shall be tested the migration before used. The acceptable criteria shall be indicated in the specification.

### 4.2 Product labelling

All label information applied to a product must be accurate and indicate the requirements detailed in the product specification which is comply with the legislation and allergen. It should be documented with information of keeping condition and preparation.

Where the documented indicate that the labelling detail is comply with the specification or the FDA approve documents e.g. FDA code, list ingredient. Review the label should be in place if any change such as formula, raw material and vendor or source of raw material and legal. Validation record should be kept and retained.

### 4.3 Management of allergens

4.3.1 The company must have a system for the management of allergens which minimises the risk of allergen contamination or products and meets the requirements;

- The supplier shall have a written allergen risk assessment which includes details of all processes, products and allergen used on site referring the list of allergen of country's origin and country's intended use.
- The supplier shall provide allergen list of raw material, ingredients include the processing aids, intermediate product, finished product, when change formula and new products.
- The documented of risk assessment and documented procedure, policy to control cross contaminate which include,
  - a) Consideration of the physical state of the allergic material, i.e. powder, liquid, particulate
  - b) Identification of potential points of cross contamination through the process flow.
  - c) Assessment of the risk of allergen cross contamination at each process step.
  - d) Identification of suitable controls to reduce or eliminate the risk of cross contamination.
- Where rework is used, shall be control and implemented to ensure rework containing allergens is not cross contamination and used in products that do not already contain the allergen.
- Where the nature of the production process is such that cross contamination from an allergen cannot be prevented, a warning shall be on the label or notice to TU group.

4.3.2 The cleaning procedure shall be designed to remove or reduce to acceptable levels any potential cross contamination by allergen and provide verification program.

- Establish the validation of cleaning to ensure the efficiency of cleaning.
- Cleaning equipment used to clean allergic materials shall either be identifiable and specific for allergen use, single use, or effectively cleaned after use.

4.4 Product authenticity, claims and chain of custody

- The supplier must have processes in place to access information on historical and developing threats to the supply chain which may present a risk of adulteration or substitution of raw materials and establish the control measure.
- Where the supply chain or raw material ingredients may risk of food fraud, the supplier shall test of that item or testing processes shall be in place to reduce the risk.
- Where products are labelled or claims are made on packs following;
  a) Provenance or origin
  b) Breed/varietal claims
  c) Assured status schemes e.g. GLOBAL G.A.P., ACC, GAA BAP, ASC, MSC
  d) Non-GMOs
  e) Identity preserved materials e.g. vegetarian food

  The supplier shall retain documentation, traceability of raw material usage to substantiate claims.

- Where the supplier claim products such as religion, halal, kosher, or the organic. The supplier shall maintain this status.

4.5 Product packaging

- The supplier shall consider using for the specifying food contact packaging. The packaging materials shall be made aware of any particular characteristics of the food e.g. high fat content, pH or usage conditions.
- The supplier shall test the product contact liner to confirm it conforms to relevant food safety legislation.
- The shelf life study of packaging shall test with the product.

4.6 Product inspection and laboratory testing

4.6.1) Product inspection and testing

- The area of microbiology laboratory must separate from the production line and storage area to prevent the contamination.
- The supplier shall provide scheduled programme of testing covering products and the processing which include,
  a) Environment test e.g. air test or swab test
  b) Microbiological, chemical, physical and organoleptic testing which according to the risk include methods and frequency test.
  c) The record shall be maintained and review.

The shelf life study shall carry out the organoleptic, microbiological, and chemical testing e.g. pH, Aw and record shall be kept in place.

4.6.2) Laboratory testing

If an on-site laboratory is used , the supplier shall concern ;

a) Control the environment of laboratory e.g. temperature, light, R.H and ventilation are appropriate the testing condition.
b) The laboratory staff shall have competency and properly training. Laboratory methodologies must refer to the international with traceable and documented for all analyses carried out on site, the validation testing shall be undertaken for applicable method.
c) Laboratories shall participate in proficiency / correlation testing to verified the efficiency and effectiveness of testing.

External laboratory shall be accredited ISO/IEC 17025 relevant the scope of testing. If the laboratory is not accredited, the proficiency test should be conducted or verified with interlab.

4.7 Product release

The product release procedure must ensure all system requirements relating to specification is sign agreement with TU group. The finish products are approved by QC/QA before release.

**5. Process Control**

5.1 Control of operations

The supplier must provide the process specification and work instructions to control and monitoring relevant to product safety, legality and quality which concern;

a) Formula include the allergen list
b) Equipment or machine of mixing to control time
c) Setting condition of equipment
d) Time and temperature of cooking
e) Time and temperature of cooling
f) Labelling
g) Coding and expiry date
h) CCP plan

The item and criteria are indicated in process specification shall be complied with the finished product specification.

Process monitoring, such as temperature, time, pressure and chemical properties, shall be implemented, adequately controlled and recorded to ensure that product is produced within the required process specification.

When variation in processing condition that are critical to the safety or quality of products or the processing characteristics, the supplier shall validate and verify at a frequency based on risk and performance of equipment e.g. heat distribution in retorts, ovens and processing vessels.

Where process parameters are necessary to controlled by in-line monitoring devices, the suitable alarm system should be placed; for example the retort and the maintenance should be required.

The staff shall be trained properly and relevant this job description.

5.2 Labelling and pack control

The supplier must control of product packaging, labelling and coding to ensure the correct product or components are packed.

All packaging materials supply to the production line must be controlled and checked to ensure it is correct and for the right product.

Where code and label are off-line, each item of packaging and quantity supplied to every production line must be verified as being the correct item before packing commences.

At any product changeovers and at the end of production runs, the visual check of the packing equipment and all relevant parts of the line must be carried out to ensure that all relevant packaging has been removed.

The supplier must have a labelling and coding procedure in place to ensure that package with code and label are correct, the frequency of verification check included with;

a) Start up production
b) packing or filling time
c) change the batch/lot of products
d) end of packing or filling

The items checking are specified;

a) Date (Production and best before or expiry date)
b) Batch
c) Weight, volume, quantity (no.of pieces)
d) Barcode
e) Manufacture by

Where the camera inspector used is apply, the supplier should verified this equipment to ensure that correct working and auto reject if founded any incorrect label or code.

When supplier use brand TU group on package, the supplier must carry out control include stock of packaging is left over, remain from packing and delivery, incorrect or damage package and rework as well as outsource who permitted to transfer waste to disposal shall be record to ensure that no reused brand packaging.

5.3 Quantity - Weight, volume and number control

The supplier must have a clear documented policy and procedure for the management of weight, volume and count which include;

- The Sampling Plan, criteria, frequency and responsible person checking.
- The correction and corrective action shall be recorded in place when deviation.

- The frequency and methodology of quantity checking shall meet the specification and legal requirements.
- When the quantity of the product is not governed by legislative requirements, the products shall conform to TU requirements and records shall be maintained.

5.4 Calibration and control of measuring and monitoring device

The supplier must carry out all calibration and verification of measuring and monitoring equipment. This reduces the likelihood of occurrence of the production of defective, unsafe or illegal products following;

- The measuring device is checked and very critical to the legality, quality and food safety shall be calibrated annually or relevant the legal.
- After calibration or verification, the measuring device shall be evaluated before used.
- The identified measuring devices are include,
  a) tag no.
  b) calibration date
  c) calibration due date
  d) prevention from adjustment by unauthorised staff
- Reference measuring equipment shall be calibrated and traceable to a recognised national or international standard.
- The calibration record shall be maintained and kept in place.
- When equipment is operating outside of specified limits, it must be taken out of service and replaced or repaired by a qualified person. Documented corrective action must be evident where inaccurate measuring or monitoring equipment has been used and all product must be re-checked or inspected using accurate equipment prior to supplying into TU group to ensure at risk product is not offering.

**6 .Environmental & Social responsibility**

6.1 The supplier must specific Environmental documented must be in place, detailing responsibility to meet in the local legislative requirements, minimizing overall environmental impact and how this is measured.

- Where the hazardous waste shall be control if transfer outside record shall be in place such as Uniforms Hazardous Waste Manifest .
- The waste treatment shall meet the local legislative requirements
  (BOD < 20 mg/l, COD < 120 mg/l, Oil & Grease < 5 mg/l, pH 5.5 – 9.0, TDS < 3000 mg/l, TSS < 50 mg/l )
- Where the supplier's site places in the industrial estate, shall carry out relevant to the estate and local legislative requirement.
- Separate and identified the wastes include the hazardous waste and must be kept in good condition place.

6.2 The supplier must management to employ the employee meet in legislative requirement and have knowledge of the Ethical Trading Initiative (ETI) included with,

- The minimum age of employee is meet in the national legislation e.g. Thai Labour Protection Act is specified stated that not less than 15 years old of employee.
- The employee shall be given properly the wages and relevant this Act.

- The working hours are meet in the legislation, total working time is not over 48 hours per week or relevant national legislation.
- The overtime and working on day off or holiday shall not over 36 hours per week. If working time is 5 hours, the supplier (employer) shall provide breaking every an hour. In case of the overtime is more than 2 hours, the breaking time is provided for 20 minutes. In addition, the day off should be established at least a day per week and in the period 6 workdays as maximum (or relevant the national legislation).

Remark : Thai Labour Protection Act is stated the exemption of employee age following;

- Where the employee is less than 18 years old, the employer shall apply to meet in section 45,46,47,48,49,50,51 and 52
- The employee who is less than 18 years (but over 15 years old) could work except seafood processing and poultry slaughters.