Thai Union Group Food Safety & Hygiene Requirements
Version 2.0 February 2018

INTRODUCTION

Thai Union Group(TU group) have been official announced Food Safety & Hygiene Requirements (TU-FSH) on May 2016 and then the amended version was in the detail of 6.2 section on August 2017. And this is the latest version is updated in some details to be clearly and it will be notified by February 2018.

OBJECTIVE

- TO ensure that all products produced under TU Group are consistent quality, safe and comply with relevant legal requirement through whole supply chain until customer.
- 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.

SECTION

1. Quality and Food Safety Management system
2. Site Standards
3. Food Safety Plan and HACCP
4. Product Control
5. Process Control
6. Environmental & Social responsibility

1. Quality and Food Safety Management system

1.1 Quality and food safety manual

- Quality and food safety 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 safe, quality products and legal and its responsibility to their customer.

1.2 Document and Record control

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

- The method for the identification correction and the date of issued documents.
- A list of all the updated version documents.
- Approval document and authorise person including documentation holder.
- The record of reason for any changes or amendments to documents.
- All record are indicated the name of record.
- Record shall remain genuine document and legible.
- All amended data must show in record, no erasing and the sign off with name and date should be indicated.

- Records are in good storage, protection and prevent deterioration.
- Records shall be retained at least shelf life of the Thai Union product or according the legal and/or as long as shelf life of the product (depend on which shelf life is longer)

1.3 Selection and monitoring of vendor's performance

1.3.1) The supplier shall undertake a documented vendor approval and assessment of vendor, raw material and included food packaging.- The updated vendor list (AVL) is indicated including any materials supplied via agent or broker with manufacturer.

- 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) 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 high potential, produced and delivered product constantly safety, self-audit questionnaires are permitted and must be covering in Good manufacturing practice (GMP), HACCP principles, traceability and product safety topic.

If using questionnaires, the company have to conduct traceability tests with vendors every 3 years, covering the raw materials and packaging delivered to TU Group

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

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

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

1.3.3) The supplier shall implement the Business Continuity Plan (BCP) and tested internally on these plan including floods, bushfires etc. The crisis management plan shall be communicated constantly to ensure the impact of these events is reduced and product supply can still continue to TU group.

In case of recall products occur, the supplier must be preparing the product supply 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
- Internal audit shall be carried out by appropriately trained competent auditors, who are Independent from the audited department.
- Internal audit report, conformity and non-comformity results, internal audit checklist and corrective action should be taken and retain documented.

- GMP audit shall be established to ensure to reduce cross-contaminated risk at least monthly.

1.5 Corrective and Prevent recurrence

The supplier shall provide documented procedure, necessary corrections and prevent recurrence.

- The activity required under this regulation.
- Determining the causes of nonconformities and evaluating the need for action to ensure that nonconformities do not recur
- The result of monitoring, correction and prevention of recurrence.
- 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 cut-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 relating to non-conforming products, hold and release products.
- 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 non-conforming products, hold and release products.

Permitted rework must be appropriately controlled in use, must not negatively affect to product quality, safety 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 to ensure fully traceability shall be identified from all raw materials to vendor and products deliver to TU group. There shall be documented procedures for managing traceability which include;

- Identification of raw materials, including packaging, process products and finished products or non-conforming products, rework product and delivered products to TU group shall be adequate to ensure traceability effectively.
- Traceability records and all relevant records keep in place.
- The company shall test the traceability system at least annually from raw material (included primary packaging) to finished product and also must be tested in backwards. Full traceability should be achievable within 4 hours.
- The traceability system should be tested cover every shift (It covers every shifts to produce to TUG products)
- The mass balance in acceptance criteria 95-105%.

1.8 Product Withdrawal and Recall

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

- The reason of product recalled or withdrawn with issues of quality, food safety, legality.
- An up-to-date list of key contacts, e.g. recall or withdrawal authorized team and TU team. It must be updated name and contact number of Key contact for both working and out-of-hours (24 Hrs).
- Impact assessment of others product under the same production line with these products withdrawn and recalled where it affects the safe and legal of TU group products. This information must be communicated to TU group immediately within 2 hours.
- The decision method to communication with external bodies, Government or enforcement agencies e.g. Fisheries, Livestock department regular and others etc.
- The product recall and withdrawal procedures shall be tested, at least annually with TU group product to ensure their effective operation and the recorded should be maintained.
- The recall test must be carried out as a minimum once time in out of working hours. (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 investigated and the results of investigation and root cause of the Issue recorded where sufficient information is provided and prevention of a re-occurrence.
- Complete records must be kept and the outcome of the investigation promptly reported to relevant personnel and departments
- The related corrective action plans must be carried, with prevention of a re-occurrence. Steps must be in place for corrective actions to be passed on to the relevant departments.

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.

- Investigation of cause need to response to TU team within 7 days.
- Corrective and preventive actions system shall be follow up effectively
- Corrective and preventive actions must be informed to TU team

2. Site Standards

2.1 External and location standard

External and location sites shall be considering sizes, location, suitable establishments, where measures shall be taken to protect contamination and may have an adverse impact on safe and should be complied with this requirement.

- No unused materials, including no dust, smoke or smell disorders.
- No areas where wasted, sewage which may be prone to infestations of pests
- No livestock areas and animal shelter.
- No 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.

- Appropriate measures such as flood control or other activity may be affect to products must be put in place and reviewed to ensure to protect contamination.
- 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.
- Access area in restriction area such as pre-mix, water and ice supply, pasteurized area must be secure and responsibility persons included raw-material store and finished good area, laboratory area. These must be access control area.
- The procedure of security to ensure that only authorised personal have access production sites and others control area e.g. store, warehouse, premix, water supply and pasteurized area etc.
- Access to the site must be restricted to contractors and accompanied visitors.
  The training shall be provided and records keep 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.

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

- The sites structure e.g. Walls, floors and ceilings etc. must be design and construction with suitable materials. 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.
- Adequate lighting must be provided for clear working visibility.
- Good ventilation
- 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 dust or these aspects must be otherwise controlled.

2.5 Water, ice, air and other gases

- All water used as a raw material in the manufacture of processed food, 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 from Compressed air used directly in contact with the product shall be filtered. Air test must be verified annually at least or relevant the risk assessment of product.

2.6 Maintenance

Maintenance Procedures and methods used must ensure product safety or quality is not affected during maintenance tasks.
- Preventive maintenance must be applied.
- 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 program must be carried out post-maintenance unless it can be demonstrated there is no risk to product.
  a) Cleaning program document and record after maintenance.
  b) GMP practical document and record shall be 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 determine all parts of the equipment, Tools. Machine, building and places which relevant with quality and safety of product.
- 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 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. 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.
- Do not allow wearing cloth from home for the staffs who work in 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.
- All hand washing station must have sufficient quantity of water, antibacterial liquid cleanser and complete hand drying e.g. single use towels or dryers and must be in good condition.
- 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
b) Outdoor shoes must be stored separately from work shoes within the changing area.
c) The hand-washing station before access the production areas.

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 production area. If there is a likelihood of their contaminating food with practical e.g. spitting, eating, smoking in production and relevant area must be prohibited.
- Rules for the control of personal medicines to access production area.
- 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.
- Control measures shall 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 and evaluation must be documented and keep in place.
- 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 annually and also food allergen management.
b) The staffs who responsible for pest control program must be trained and including chemical control and property working method.
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;

- All of chemical used in sites must be documented list.
- The identification label and Safety Data Sheets (SDS) available in chemical storage areas
- Segregated and secure storage with restricted access to authorised personnel for prevention of cross contamination such as locked door and protect to use in wrong purpose.
- Only food grade lubricants may be used on food handling/contact equipment. Information document 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 shall be not used in product area.
- The staples and paper clips shall be not used in product area.
- Where staples or other items are present as packaging materials or closures shall be no Permitted to protect 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 equipment or material with glasses must be listed on a register and layout. These must be inspect in production, storage areas, warehouse and canteen, where they may pose a risk of product contamination including the glass of equipment from laboratory when intake in the production area.

- The procedure must be in place for the management of Glass, Glass Like Materials & hard (Brittle) Plastic breakages e.g. hold all products possibly contaminated in production area, cleaning program in the affected area, cleaning program of cloth staffs contaminated. These areas shall be verified by a responsible person and sign off that production can restart without broken glass residues.
- The record of broken glasses handling 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) $\leq$ 2.0 mm, Non-Ferrous (Non-Fe) $\leq$ 3.0 mm. and Stainless steel $\leq$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 procedure must be documented with waste disposal to prevent accumulation, risk of contamination and the attraction of pests. The supplier shall manage in accordance with legal requirements.

- Waste area must be corrected in suitable areas and adequate. collected in containers, correctly disposed
- Waste container should be covered as appropriate to prevent attraction of pets and shall be on suitable areas and adequate.
- Where the wasted are removed by contractors, the licensing is required for the disposal or categorised waste and records shall be maintained. This shall be required disposal documentation to ensure waste disposal effectively.

If the supplier's raw material or food packaging is used address, trademarks and any other indications of the TU group identity. Where surplus stock is donated to charitable organizations, including waste product must ensure the product is disposal according with legal. This must not be reused or reprocessed 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 lay out 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.
- Pest control equipment must be identified.
- All bait or monitoring stations must be secured to fixed structure to prevent unsafe chemical use.
- 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 lay out 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 record of 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, Pest control analysis should be recorded with corrective action.

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 bemaintained 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 keep 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 raw material, packaging, in-processed product, finished goods which keep storage outside 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.
- Evaluated document 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 Competent 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 of 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, frozen)
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, seasonal variations shift production must be considered. 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 safe
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 by HACCP team;
   - 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)
- Supported by clear guidance or examples where measures are subjective (e.g. photographs).

The HACCP food safety team must validate each CCP.

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 verify the HACCP plan, including record in verification activities:

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 relevant person.

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 accept/reject indicated in the specification and make decision by authorized person.

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 specific regulation

and related legal. It should be documented with information of keeping condition and preparation.

The information on the label e.g. allergen must be accurate and complies with the requirements for inspection.

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. Fully validation record should be kept and retained.

4.3 Management of allergens

The company must have a procedure system for the management of allergens;

- The supplier shall have a written allergen risk assessment which includes details of all processes, products, packaging to protect all of 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.
- The cleaning procedure shall be designed to remove or reduce to acceptable levels any potential cross contamination by allergen and provide verification program continually.
- 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 (If have) and traceability document of raw material usage.

- Where the supplier claim products and agreement with TU Group regarding 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 (e.g. product tray, temporary product) 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 documented training.
c) 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.
d) Laboratories shall participate in proficiency test or comparing with inter lab constantly to verified the effectiveness of testing.

For external laboratory, Accreditation to ISO/IEC 17025, or similar recognized national standard with equivalent requirement must be require. If the laboratory is not accredited, the proficiency test should be conducted or verified with inter lab.

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) Mixing equipment, speed and 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 inspector staff have a properly knowledge, suitable experience and shall be trained in necessary relevant.

5.2 Labelling and pack control

The supplier must control of product packaging, labeling 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 production must be verified, as being the correct item, quantity supplied, printing and application in each item before 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 labeling 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) identified Weight, volume and quantity (no. of pieces)
d) Barcode
e) Manufacture by (country or original country if no produce in Thailand)

Where the inspector equipment is used, 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, responsible person, correction and corrective action shall be recorded in plan.
- 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 product 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 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 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.

AUDIT PROTOCOL

1. SCOPE OF AUDIT

- 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 in quality and safety 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.

2. 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.

3. AUDIT PROCESS AND NON–CONFORMANCE REPORT (NCR)

- 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 and grade 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
Accept (A)	All practical are complied with this food safety requirement.
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 prevent a potential product quality failure and a practical are not complied with this food safety requirement.
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.

4. Criteria for scoring and grading

1. Criteria for scoring;

Level	Score
Critical (C)	0
Major (M)	1
Minor (N)	3
Observation (O)	8

2. The auditor from third party audit conducts the audit according to this requirement. If their products or processes could not applied. It will be indicated an not-applicable (N/A). The non-applicable requirement will not be accounted for scoring and grading of the audit.

SCORING CRITERIA AND FREQUENCY OF AUDIT

Grade	% scoring	Frequency of audit
A	95-100	Every 2 years
B	75-94.99	Every a year
C	60-74.99	Every a year (Re-visit by TUG or CB, TUG will be assigned.)
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.

Remark : Frequencies and conditions of quality audit depend on risk assessment and problems encountered during purchasing in each year and/or If major NCR occurs, it will be re-visit within 3 months and critical NCR will be re-visit within a month or re-audit for revising grade however, depend on supplier/ customer request.