



# Technical Brochure

**JULY 2023**

**Plant-Ex Ingredient Ltd.**

**Authored by: Bibiana Rodriguez**

**Version: 4**

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**To our valued customer:**

**Due to the volume of electronic document requests we receive, and our interest in providing you documentation in the quickest manner possible; we have assembled the following Technical Brochure for our manufacturing site. We are confident that these documents will support your assessment of the regulatory and quality status of Plant-Ex products. These documents were created and written to provide food regulatory, facility, and food safety information for your reference and use.**

**Specific product information is contained within the Product Declaration.**

**If you still require further information, please contact your account manager in the first instance.**

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It is the policy of Plant-Ex Ingredients Ltd to ensure: -

**‘That the highest possible standards of food safety, quality and hygiene are achieved throughout all our processing activities.’**

The company has a legal, moral, and business imperative to ensure that Food Safety and food quality are effectively managed throughout the business. The company has a responsibility to its customers to ensure that products produced are safe, authentic, legal and that they satisfy customers specifications.

Food safety is achieved through effective implementation and management of the HACCP plan. Product quality is achieved through effective implementation of the Quality Management System. The Quality Management System is based on the BRC Global Standard for Food safety (Version 9).

The company is committed to continuously improve its food safety and quality culture.

It is the responsibility of Senior Management to communicate the above requirements to all members of staff.

**The realisation of the Quality Policy is achieved through: -**

- Implementation and management of the company’s Food Safety and Quality Management system to the BRC Global Standard for Food Safety.
- Ensuring all staff are aware of and understand the company’s Quality Policy and commitment to Quality & Safety.
- Providing the financial and human resources required to meet its obligations.
- This policy will be reviewed at least annually.

**Giles Drewett**

**Managing Director.**



**September 2022**

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# Company Address

Plant-Ex Ingredients Ltd,

Unit 7D, Access 18, Kings Weston Lane, Fourth Way,  
Avonmouth,  
Bristol BS11 8HT

Phone. 0044 (0) 1179828464

VAT No GB926334327

Company Registration No. 6444123

EC approval Number: GB BZ 055

## Senior Management Details

Name	Title
Giles Drewett	Managing Director
Thomas Drewett	Director
Raquel Peris	EU Commercial Director
Jennifer Donkin	Finance Director
Daniel Tomei	Technical Director

## Emergency Contact details

**Name:** Giles Drewett

**Emergency Telephone:** 0044 (0) 7702074825

**Email:** [giles.drewett@plant-ex.com](mailto:giles.drewett@plant-ex.com)

## Quality Contacts

**Name:** Les Chapman

**Title:** Quality Manager

**Telephone:** 01174622445

**Email:** les.chapman@plant-ex.com

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**Email:** technical@plant-ex.com  
**Email:** qa@plant-ex.com  
**Email:** tamsin.fox@plant-ex.com  
**Email:** georgia.watkins@plant-ex.com

**Purpose:** General laboratory enquiries.  
**Purpose:** Technical queries, questionnaires.  
**Purpose:** Product testing.  
**Purpose:** All aspects of customer care

## Certifications and Memberships

We are a **BRCGS** accredited Site Code: 8869725

We have **Halal** and **Kosher** certification on a large range of products

We are certified **Organic** by The Organic Food Federation GB-ORG-04

Certified **RSPO**: B M T - R S P O - 0 0 1 0 0 5

Members of **Sedex**. Site code: ZS1016119 Cert No. ZC1077665

**U.S. FDA** Registration No.: 18777812570

Copies of current certificates are available to download from our website:

<https://www.plant-ex.com/technical-downloads/>

## Supplier approval procedure

Plant-Ex Ingredients Ltd approves its suppliers and risk assesses them to ensure that food ingredients, packaging and other items affecting food safety, quality and legality are sourced reliably.

Plant-Ex Ingredients Ltd. Only purchases raw materials, compound ingredients, packaging, and process aids from approved suppliers. Approval is achieved by one or more of the following.

- Third party accreditation of the company's quality system (BRC (Grade B and above), or an equivalent GFSI recognised scheme. e.g., FSSC 22000, SQF.
- Audit

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- Supplier Approval questionnaire including evidence of one or more of the following ISO 22000, HACCP, SALSA, ISO 9001

Where evidence of accreditation is available the company may also ask for the completion of a questionnaire to obtain more information.

Where the supplier has been assessed as High Risk, a GFSI benchmarked accreditation (BRC or FSSC 22000) or Plant-Ex audit in person will be required.

The Quality Manager is responsible for the monitoring of supplier performance. All suppliers are monitored including quality, authenticity, financial, and logistical factors. A supplier review is carried out annually and new suppliers are assessed

## Product control

The risks presented by potential contaminants are assessed as part of our TACCP/VACCP process. The company sources only from reputable suppliers who have undergone our approval process. The Plant-Ex traceability system, policy and related procedures are in place to ensure product purity.

We are regularly screening for the following substances and contaminants.

- Illegal Dyes
- Mycotoxins
- Pesticides
- Heavy Metals
- Residual Solvents

These analyses are carried out by Campden BRI, UKAS 1079.

Microbiological analysis is contracted out to One Scientific UKAS 2048, based in Avonmouth. Samples are collected daily according to risk assessment.

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Every batch of product is tested to confirm it meets the relevant specification parameters and is positively released for dispatch.

Please refer to the Product Data sheets for the full range of analyses carried out. Certificates of Analyses accompany all deliveries but can also be emailed or sent by post with the invoice documents.

## Facilities

### Production facilities

The main production site is modern facility at Unit 7D Access 18 comprising approx. 800M<sup>2</sup>. This is where the spray drying, powder blending, liquid production, and packing is completed. There is a secondary production unit at The Polygon, Fourth Way this is made up of 3 connected units (units 3,4 & 5) which include a small amount of storage, the flavour room, and some bulk liquid blending.

These 3 units are in total, around 560 M<sup>2</sup>.

There are no externally opening windows within the production areas; there are internal viewing Perspex windows and skylights. All lights are covered and protected. Doors are in good condition and suitable for their purpose. Where doors are designed to be opened, e.g., for loading and unloading; then there are strip curtains in place and doors are kept closed when not in use. Suitable lighting is in place which provide adequate illumination for required practices. Extraction is in place where needed. There are no elevated walkways which are adjacent to or pass over production lines. Walls are constructed of clad white food grade panels in production areas and maintained in good condition. Floors are constructed of resin sealed concrete. Ceilings are appropriately maintained.

### Warehouse facilities

All our raw materials are stored in our warehouses at 7B and 7C Access 18. Storage conditions are such that the products are protected against physical, chemical, and microbial contamination as well as against deterioration of the ingredients and



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packaging. Ingredients requiring segregation for food safety or special dietary reasons are stored in their own racking areas and clearly labelled.

The finished product warehouse and dispatch at Unit 6B Access 18 is a newly built unit totaling approx. 1500M<sup>2</sup>.

Where ingredients and finished products are required to be stored chilled for quality or safety reasons the chillers are fitted with 24hr monitoring and alarm systems.

## Storage and Transport

### Stock management

Our stock management system operates on a **'first in first out'** basis.

All incoming products and packaging are checked and positively released to production for picking using our Chilli system.

Batches are numbered sequentially using the Chilli system; so oldest batches have lowest numbers. Any batches of raw materials with a Best Before Date of less than six months from the present date should not be used but referred to Technical for possible retesting and shelf-life extension.

The chillers are fitted with continuous temperature monitoring systems which will alert should the temperature move out of tolerance.

The alarm is triggered if the air temperature goes below 0°C or above 10°C for 60 minutes

### Transport

Transport services are sub-contracted from suppliers selected on their ability to respect our transport conditions which comprises of specific requirements for food protection. Vehicles are clean and checked prior to loading.

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# Traceability and Product Recall

Regulation 178/2002 laying down the general principles and requirements of food law, requires every food and feed business in Europe and those bringing food/feed into Europe to have a traceability and recall system in place.

## Traceability

The traceability test is conducted 6 monthly; both forward and backward traces are carried out on manufactured and traded items.

The average time needed for full traceability through the supply chain is 4 hours.

### Specific requirements

RSPO: The supply chain model considered by the procedure is Mass Balance (MB) only. Identity Preserved (IP) and Segregated (SG) deliveries will be downgraded to MB

All the usual principles of Traceability, Hygiene, Risk Assessment, HACCP, TACCP etc. apply equally to Organic, Halal, Kosher and RSPO products.

## Product Recall

Plant-Ex have never had to initiate a product recall; however, we regularly challenge our traceability and recall procedures for both manufactured and traded items

The last recall challenge exercise was carried out on: 24/04/2023

# Allergen

The site is declared a **Nut allergen and Peanut free** site.

Fourteen Major Food Allergens are defined in Regulation (EU) 1169/2011. Plant-Ex have a requirement to use some of these Allergens contained in Annex II of the regulation

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## PERMITTED ALLERGENS

SULPHUR DIOXIDE and sulphites at concentrations of more than 10 mg/kg or 10 mg/litre expressed as SO<sub>2</sub>.’ (Contained in Grapeskin Extracts and also in Caramels with alkaline sulphite)

CEREALS containing gluten and products thereof. (Contained in Malt Extracts and wheat flour)

MUSTARD\* (contained in Mustard flavour, oil, and oleoresin)

SOYABEANS and products thereof

CELERY\* (Celery Oleoresin)

MILK and products thereof (including lactose)

BITTER ALMOND OIL\*\* which is non allergenic and has been verified as such by analysis.

\* Only Mustard or Celery Oils or Oleoresins are used on site. Raw materials containing mustard or celery, seeds, grains, or flour are not permitted. No products containing mustard or celery are produced on the Spray dryers

\*\* Bitter almond oil is believed by the manufacturers and Plant-Ex, not to contain any allergens; we have sent several samples from different batches and origins for Elisa testing and have always received results below the limit of detection. However, as the product is derived from a tree nut, we do classify, treat, and label as an allergen. Products containing Almond oil are only produced and packed in unit 4 of the polygon.

## EXCLUDED ALLERGENS

EGGS and products thereof

NUTS i. e. Almond (*Amygdalus communis* L.), Hazelnut (*Corylus avellana*), Walnut (*Juglans regia*), Cashew (*Anacardium occidentale*), Pecan nut (*Carya illinoensis* (Wangenh.) K. Koch), Brazil nut (*Bertholletia excelsa*), Pistachio nut (*Pistacia vera*), Macadamia nut and Queensland nut (*Macadamia ternifolia*) and products thereof

PEANUTS and products thereof

FISH and products thereof

CRUSTACEA and products thereof

MOLLUSCS and products thereof (Scallops, Squid, Octopus, Cuttlefish).

SESAME seeds and products thereof

LUPINS seeds and products thereof

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Raw materials containing allergens are stored in segregated locations within the warehouse and are clearly labelled and colour coded as such.

Allergen handling and spillage procedures are in place and trained to all relevant staff. Regular refresher training is also carried out.

## **HACCP (Based on Codex Alimentarius Principles)**

### **Scope of HACCP**

The production and distribution of food colours, flavours, and ingredients and the trading of food colours, flavours and ingredients (Traded Goods). Products may be either liquid or powder.

The production of products includes Contract blending and packing. The supplier and customer are in this case the same.

Traded goods are bought from the supplier and sold on to the customer without changing the packaging. Labels will however be changed from those of the supplier to Plant-Ex labels.

The hazards considered are Physical, Chemical/Radiological, Microbiological, Allergenic, Fraud and Malicious Contamination. The study considers spray drying both at sub-contractor and on site at Plant-Ex. The study considers the use and possible abuse of the product by customers

### **Review**

The review is conducted a minimum of annually, and consists of Validation of the HACCP Plan by means of audit and verification which is the process of ensuring that it is operating properly

Review of the HACCP system can also be triggered by any known change to the process, equipment, ingredients, working practices, people, or external factors. Any significant increase in customer complaints can trigger a HACCP review.

The HACCP system is also audited as part of the internal audit schedule.

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## Information and Alerts

UK Food Standards Agency (FSA) Email alerts

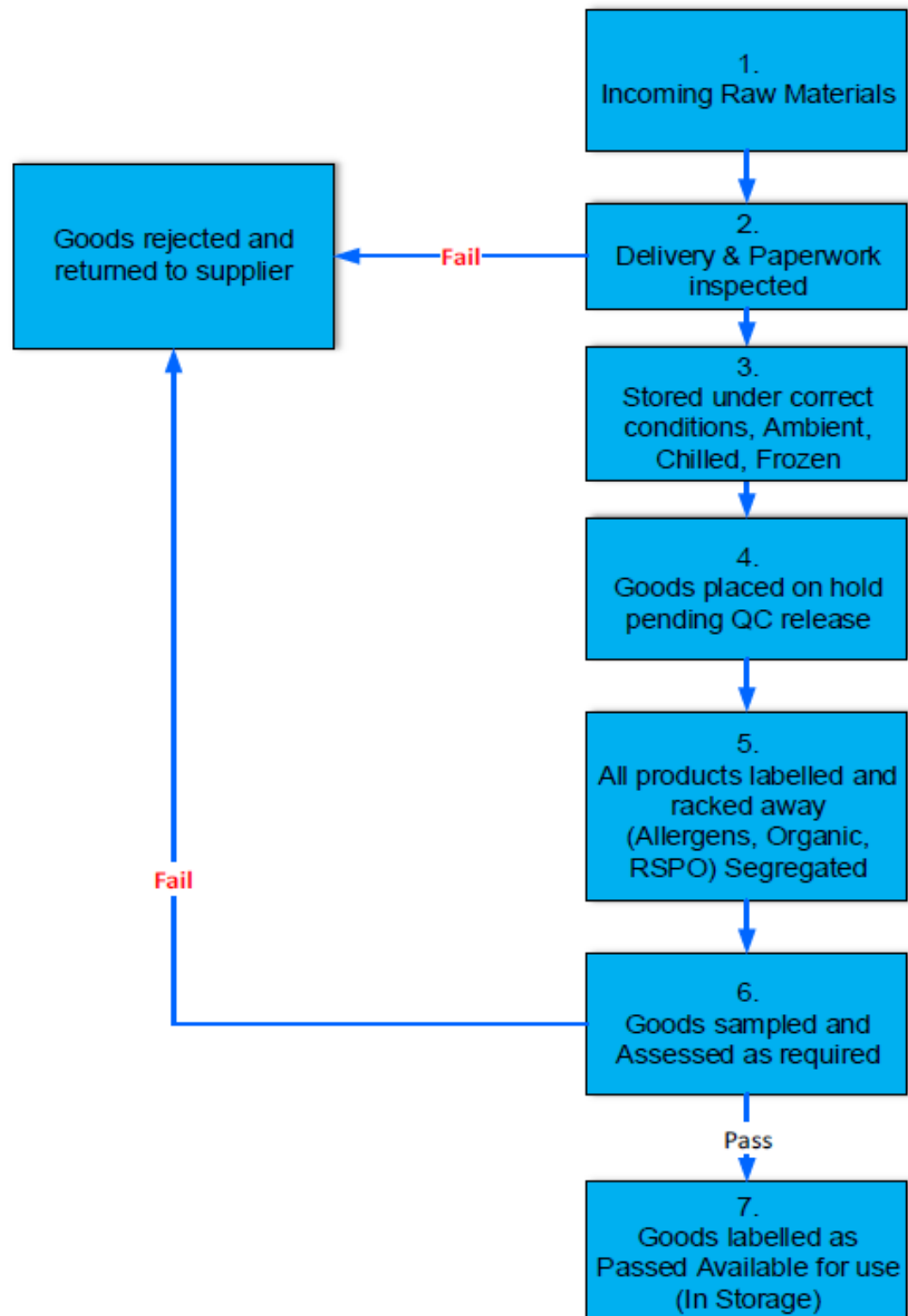
US Food and Drugs Administration (FDA) Email alerts

Food Additives and Ingredients Association (FAIA) Email updates, meeting minutes and Alerts

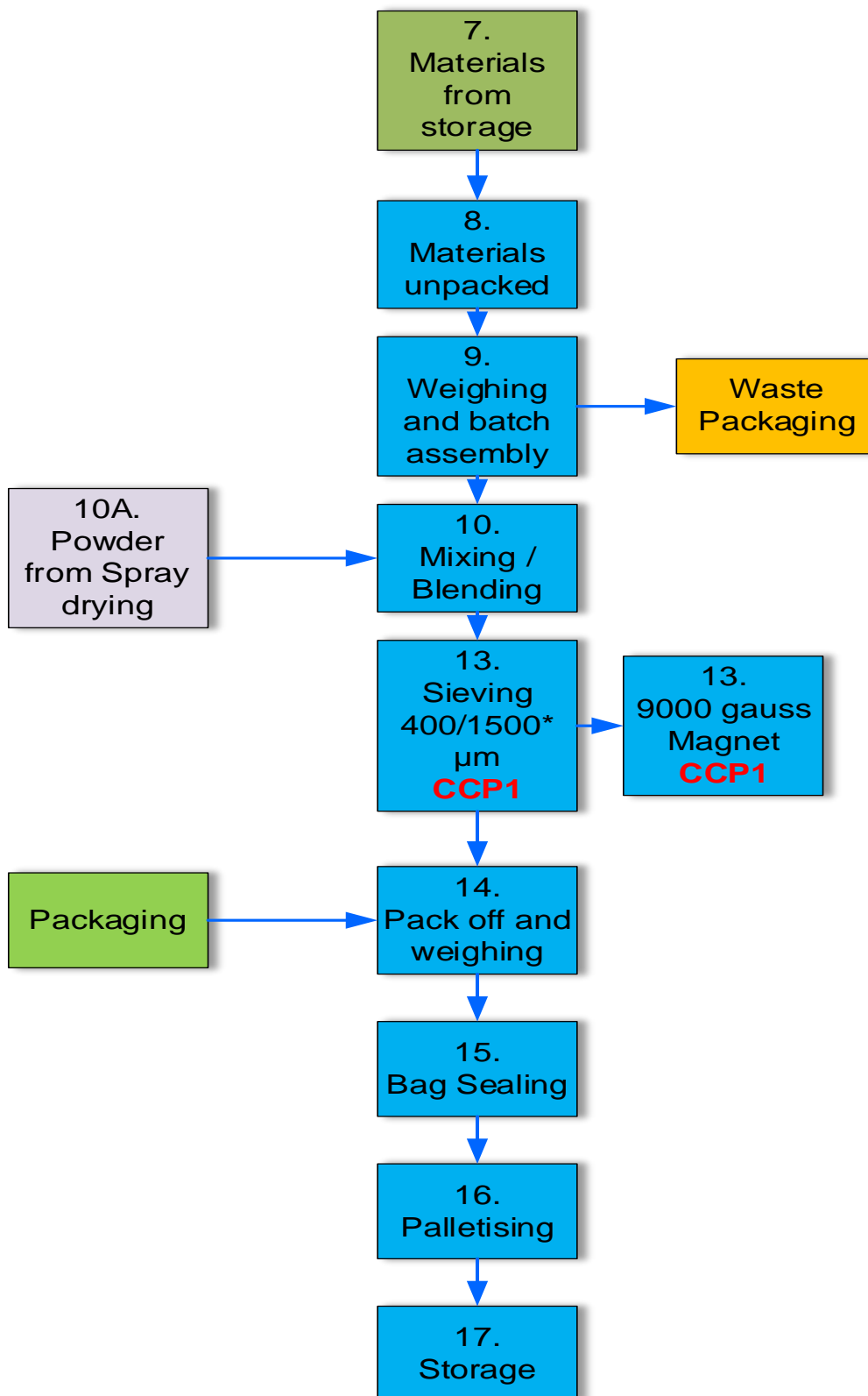
Food and Feed Safety Alerts (RASFF) monitoring of website

Campden BRI food Law updates

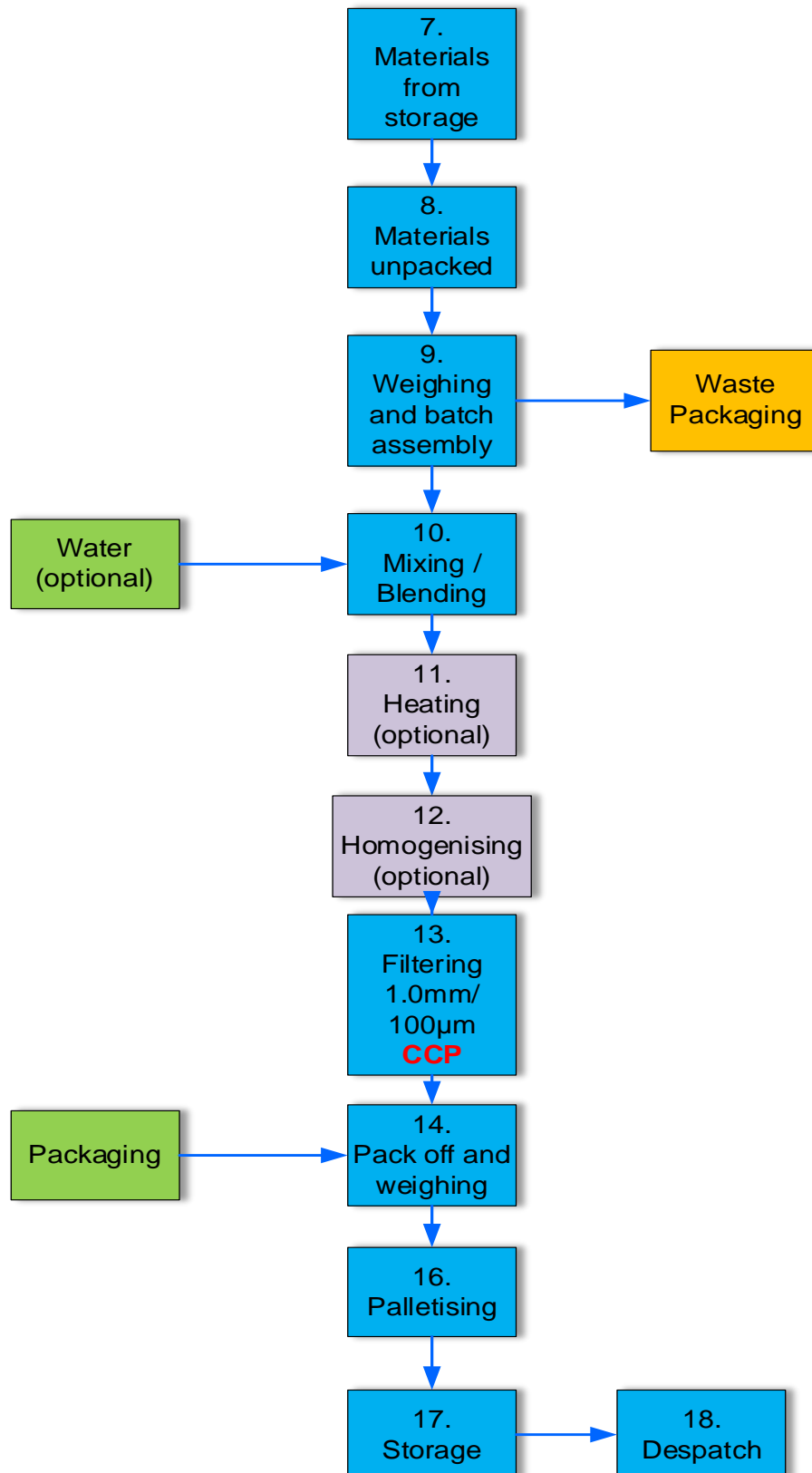
## Flow Diagram-Intake to storage



## Flow Diagram – Dry Blending

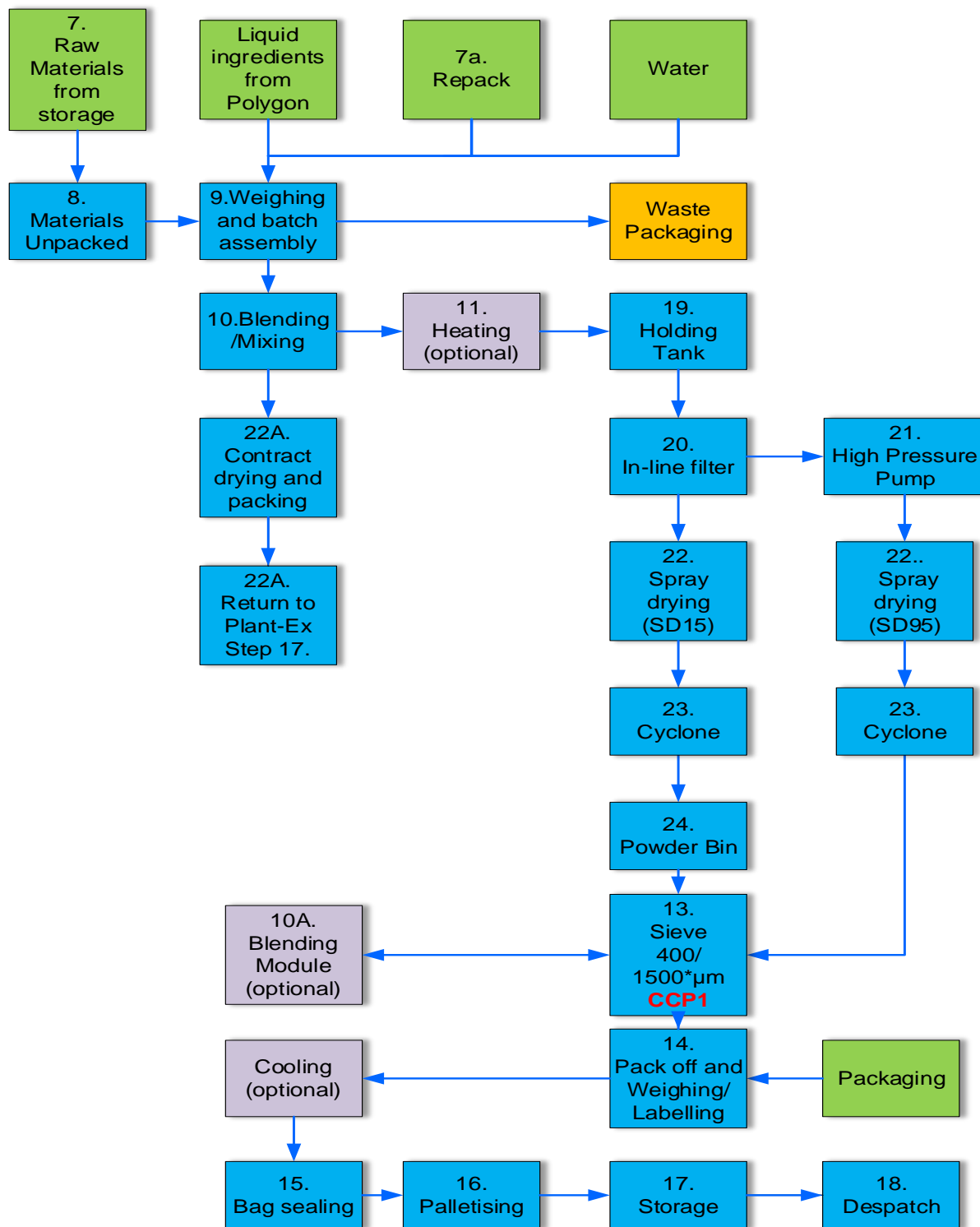


## Flow Diagram – Liquids/Flavours





## Flow diagram - Spray Drying



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# Training

Plant-Ex Ingredients Ltd ensures that all personnel can competently carry out their duties and provides training where required. This covers all work that affects product safety, legality and quality and specifically includes tasks related to Critical Control points.

The company maintains a training matrix to be able to determine training requirements for individuals. Training may be in-house or external. Training will cover Health and Safety, Food Safety, Personal Hygiene and Security. Also, all aspects of company operations from intake to dispatch and including requirements for Halal, Kosher, Organic and RSPO.

## Personnel and Cleanroom Hygiene

The site personal hygiene rules are communicated to staff by means of induction training and noticeboards. GMP audits are used to monitor compliance with requirements. All staff are required to wash their hands when entering the factory and after using the toilets. Hands are cleaned at an appropriate frequency in production areas and random hand swabs are taken from staff. Smoking is only permitted in the designated area. Eating and drinking is only permitted in the canteen or non-production-based offices. Cuts and grazes on exposed skin are covered by detectable blue metal strip plasters that are issued and monitored.

Protective clothing provided for staff includes a coat, wellingtons or shoes and disposable mop caps. Visitors / contractors are provided with coat and disposable mop caps.

Beard snoods are provided. Blue disposable gloves, suitable for food use, are available. Employees must notify management of any of the following:

- Any sickness, nausea, or diarrhoea (In the last 48hrs or current).
- Any exposure to persons suffering the above symptoms, e.g., nursing family members.
- Any visit to a non-European country.
- Any case of Hepatitis, Salmonella, Typhoid, Botulism, or any other type of food poisoning.

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- Any heavy cold, coughs, or flu symptoms.
  - Any skin infections or cuts.
  - The loss of, or damage to spectacles or contact lenses

## **Water Quality and Cleaning Management**

### **Water Quality**

All water used at Plant-Ex Ingredients Ltd, whether for cleaning or as a food ingredient is of potable quality and sourced from the mains supply from Bristol Water, a copy of the annual water quality report is held on file.

All wastewater is disposed of via the drains and processed by Wessex Water. Both incoming and wastewater quality is monitored regularly.

A water sampling plan is followed by the lab to collect and test incoming water. This is screened for micro and chemical standard. A water map detailing sample points is held on the system.

Wastewater and washings from the dryers are monitored, collected, tested, and adjusted as required before sending to drain.

### **Cleaning**

All cleaning staff receive suitable training in the site's cleaning procedures. The effectiveness of cleaning is assessed visually immediately following cleaning and during the pre-production start-up checks and areas requiring corrective action are re-cleaned. ATP swabs are also used to monitor cleaning efficiency.

## **Foreign Bodies**

The glass and brittle materials policy define the controls in place to minimise glass entry on to site or glass/plastic incidents which cannot be avoided. The site has produced a register of all glass, brittle plastic, and similar materials. The register includes details of

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location, number, and type of fitting; this register also defined the risk assessment and frequency of integrity inspections. The glass / plastic breakage procedure requires all breakages to be recorded on the iAuditor system and safe disposal of any damaged items and contaminated product.

A formal wood control procedure has been established which includes pallet guidelines and incident reporting. Wooden pallets are allowed only for ingredients and finished product cases.

Potential foreign bodies have been identified in the HACCP Plans. The company has appropriate foreign body detection equipment in place – sieves, filters and magnets (CCP), which are in place in appropriate stages in the process. The CCP is filtration/sieving, and all products pass through filtration/sieving, size is according to product type. Where foreign material is detected or removed by the equipment, the source of any material is investigated.

## **Pest Control**

The company has an effective preventative pest management program in place contracted to a reputable pest management contractor. The Contractor must be certified as belonging to at least one of the following organisations BPCA, CEPA, NPTA. There are adequate resources available to rapidly respond to any issues which occur to prevent risk to products.

Pest Management at our site is carried out under contract by:

**Valley Pest Control Ltd**

Post Cross Business Park,  
Kentisbeare,  
Cullompton,  
Devon.  
EX15 2BB

BPCA membership number: M15/558

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Every individual is expected to report any observed pests and to use only designated doors in and out of the factory and to ensure no doors are ever left open longer than necessary.

- The contract with the pest management organization is clearly defined and available in the service specification section of the file
- Full documentation is maintained
- Nontoxic baits are used throughout production and storage areas of the factory, all bait boxes are of robust and secure construction. All bait boxes are secured.
- A moth pot and fly killing machines are deployed to prevent risk of contamination and are of such design that dead or dying insects will not be ejected to cause a foreign body hazard. The units are serviced quarterly by the pest management contractor and the tubes changed annually
- Immediate action will be taken to eliminate any hazard caused by an infestation and any potentially affected product will be subject to the non-conforming product procedure.
- Any recommendations by the pest management contractor are carried through by the company.
- There are 6 routine inspections and 4 Field Biologist inspections per annum
- Trending of results is carried out on an annual basis
- An annual review meeting will be held with the pest management contractor, to discuss any issues and confirm the contracts efficacy.

## Customer Complaints

All complaints are recorded, investigated and the results of the investigation of the issue recorded where sufficient information is provided. Actions appropriate to the seriousness and frequency of the problems identified shall be carried out promptly and effectively by appropriately trained staff.

Complaint data shall be analysed for significant trends. Where there has been a significant increase in a complaint or a serious complaint, root cause analysis shall be used to implement ongoing improvements to product safety, legality, and quality, and to avoid recurrence.

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The complaint will be promptly investigated, including assessing retained samples (where applicable) by a responsible trained member of staff, this investigation may include any, or all the Technical or Management teams. Depending on further information, outside analysis, or the return of products or FBs this should normally be completed within 48 hours.

Once the nature and cause of the complaint has been investigated and understood, the resolution should be agreed and signed off between technical, production and development departments within 72 hours.

A response to the customer should be completed within 96 hours

Commercial and operational resolutions should be actioned and completed within 120 hours.

## Internal Audits

Internal audits are an important part of ensuring that the company can maintain the Safety, Quality, Authenticity, and Legality of its products.

Each element/section of the Food Safety and Quality system is audited at least once annually according to BRC standards, with more frequent audits where the history of conformance indicates the need.

When an internal audit is planned, importance, previous history, and status of the area being audited is considered.

The Objective of each audit performed is to promote improvement of the Quality and Food Safety System.

The Quality Manager has responsibility for ensuring that audits are completed.

The Quality Manager produces a routine report detailing most common failures and overdue or late closures. Any trends in non-conformances or recurrent non-conformances are identified and subjected to Root Cause Analysis so that Actions to Prevent Occurrence can be formulated.

It is the responsibility of the Operations Director to ensure that non conformances are addressed.

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# Ethical code

Plant-Ex Ingredients Ltd (The Company) conducts its business ethically with respect to its dealings with Customers, Suppliers, Employees and Regulatory Authorities

The Company encourages all its suppliers to formulate and implement their own Ethical policy which incorporates the main features outlined in this document.

- Plant-Ex Ingredients Ltd carries out its business in accordance with all relevant legislation on business conduct
- The Company will not offer or accept bribes or operate other corrupt practices
- The Company is aware of the provisions of the Modern Slavery Act 2015 as it relates to its larger customers and the requirements for information this may generate and will cooperate fully with any requests
- The Company espouses the provisions of the Ethical Trading Initiative (ETI) which are:
  - Employment is freely chosen
  - Freedom of association and the right to collective bargaining are respected
  - Working conditions are safe and hygienic
  - Child Labour shall not be used
  - Living wages are paid
  - Working hours are not excessive
  - No discrimination is practised
  - Regular employment is provided
  - No harsh or inhumane treatment is allowed
- The Company maintains membership of Sedex and will carry out Self Audits and Third-Party (SMETA) audits of its operations when necessary, as determined by risk assessment
- Adoption of ethical trading practices and adherence to the provisions of the Ethical Trading Initiative Base Code are a condition of supply to Plant-Ex Ingredients Ltd.