

# PACKAGING OF FLAVORED MILK



**AATMANIRBHAR BHARAT**

**PM Formalisation of Micro Food Processing Enterprises Scheme (PM FME Scheme)**

# INTRODUCTION

As per Food Safety and Standards Regulations (FSSR), 2011 “Flavoured Milk” means the product prepared from milk or other products derived from milk, or both, and edible flavourings with or without addition of sugar, nutritive sweeteners, other non-dairy ingredients including, stabilisers and food colours. Flavoured milk shall be subjected to heat treatment as provided in sub-regulation 2.1.1 (General Standards for Milk and Milk Products).

## FACTORS INFLUENCING KEEPING QUALITY OF FLAVORED MILK

- a) Temperature of storage: must be stored at refrigerated temperature.
- b) Initial acidity must be less
- c) Exposure to metals: Metals like, iron and copper act as catalytic agents for oxidation.
- d) Exposure to light / sunlight causes oxidation of flavored milk.
- e) Method of packaging: Higher the air-content in the head-space resulted in the lower keeping quality.

# DESIRABLE CHARACTERISTICS OF PACKAGING MATERIAL FOR FLAVORED MILK

- a) must compile Food Safety and Standards (Packaging and Labelling) Regulations, 2011
- b) packaging material should not react with flavored milk
- c) available at low cost
- d) non toxic packaging material
- e) should not allow printing ink to penetrate into the product
- f) protect against tempering
- g) protects against spoilage causing agents
- h) withstand wear and tear during transportation
- i) convenience in use
- j) should be reuse or recyclable
- k) compatible with the packaging machine

# PACKAGING

- Packaging is an important part of food manufacturing process. It protect the food products from physical ,chemical, biological damages.
- Without packaging, materials handling would be a messy, inefficient and costly exercise and modern consumer marketing would be virtually impossible.
- Packaging Institute International defined packaging as the enclosure of products, items or packages in a wrapped pouch, bag, box, cup, tray, can, tube, bottle or other container form to perform one or more of the following functions: containment, protection, preservation, communication, utility and performance. If the device or container performed one or more of these functions, it was considered a package.

## NEED OF PACKAGING

- **CONTAINMENT** : protecting the environment from the myriad of products that are moved from one place to another.
- **PROTECTION** : to protect its contents from outside environmental influences such as water, water vapor, gases, odors, microorganisms, dust, shocks, vibrations and compressive forces.
- **CONVENIENCE** : Products designed to increase convenience include foods that are prepared and can be cooked or reheated in a very short time, preferably without removing them from their primary package.

## NEED OF PACKAGING

- **COMMUNICATION** : Packaging contains a lot of information such name of its manufacturer, product name, terms and uses, date of manufacturing, best before. nutritional information thus helping the consumer to be more informed.



## TYPES OF PACKAGING

- **PRIMARY PACKAGING** : Primary package are those package which directly came into contact with food products. It provides first or initial layer of protection to the food products. Examples of primary packaging includes parchment paper, greaseproof paper, paperboard cartons, and plastic pouches.
- **SECONDARY PACKAGE** : Secondary package are those package which surrounds or contains the primary package. Ex. Corrugated case, Boxes
- **TERTIARY PACKAGE** : It contains number of secondary package together. Mainly used for bulk handling of food products.



# PACKAGING MATERIAL FOR FLAVORED MILK

- Packaging of flavored milk is mainly done to protect the flavored milk from outside environment especially air and sunlight, so that flavored milk can retain aroma, freshness for a longer period of time.



# PACKAGING MATERIAL FOR FLAVORED MILK

## 1. Metal Cans:

- Long shelf life
  - Excellent protection to food products
  - Pilfer proof
  - Excellent printability, Recyclable, Eco-friendly
  - Rigidity and strength ensure protection of package and product in transit and storage
- Higher cost is one of the drawback



# PACKAGING MATERIAL FOR FLAVORED MILK

## 2. Glass Bottles / jars:

- used for 200 ml or 500ml consumer pack.
- provide excellent protection to the product
- not in much use because of their fragility and high weight.
- **Higher cost is one of the drawback**



# PACKAGING MATERIAL FOR FLAVORED MILK

## 3. LINED CARTON :

- Used for 500ml/200ml sizes
- Flexible pouch may be made from laminates or Aluminum along with box is widely used.
- Attractive and economical pack



# PACKAGING MATERIAL FOR FLAVORED MILK

## 4. HDPE:

- ✓ replacing tin plate containers
- ✓ Blow moulded HDPE is available in the form of bottles
- ✓ provide a moderately long shelf life
- ✓ lightweight, economical and transport friendly.



# PACKAGING MATERIAL FOR FLAVORED MILK

## 5. PET or PP:

- ✓ Mostly used for flavored milk packaging because of excellent odour free and gas barrier properties.
- ✓ Blow moulded bottles made up of PET or PVC is used
- ✓ Recyclable



# PACKAGING MATERIAL FOR FLAVORED MILK

## 6. Flexible films/pouches/laminates:

- ✓ made from laminates or multi layer films.
- ✓ may be in the form of pillow pouch or as self-standing pouches.
- ✓ cheapest than any other packaging system.
- ✓ selection of laminate or a multi layer film is governed primarily by the compatibility of the contact layer, heat-sealing ability and heat-seal strength and shelf life required.



## PACKAGING MACHINES



- PP bottles placed in a turn table and allowed to move on the conveyor belt (Picture source: FILLPACK TECHNOLOGY.)

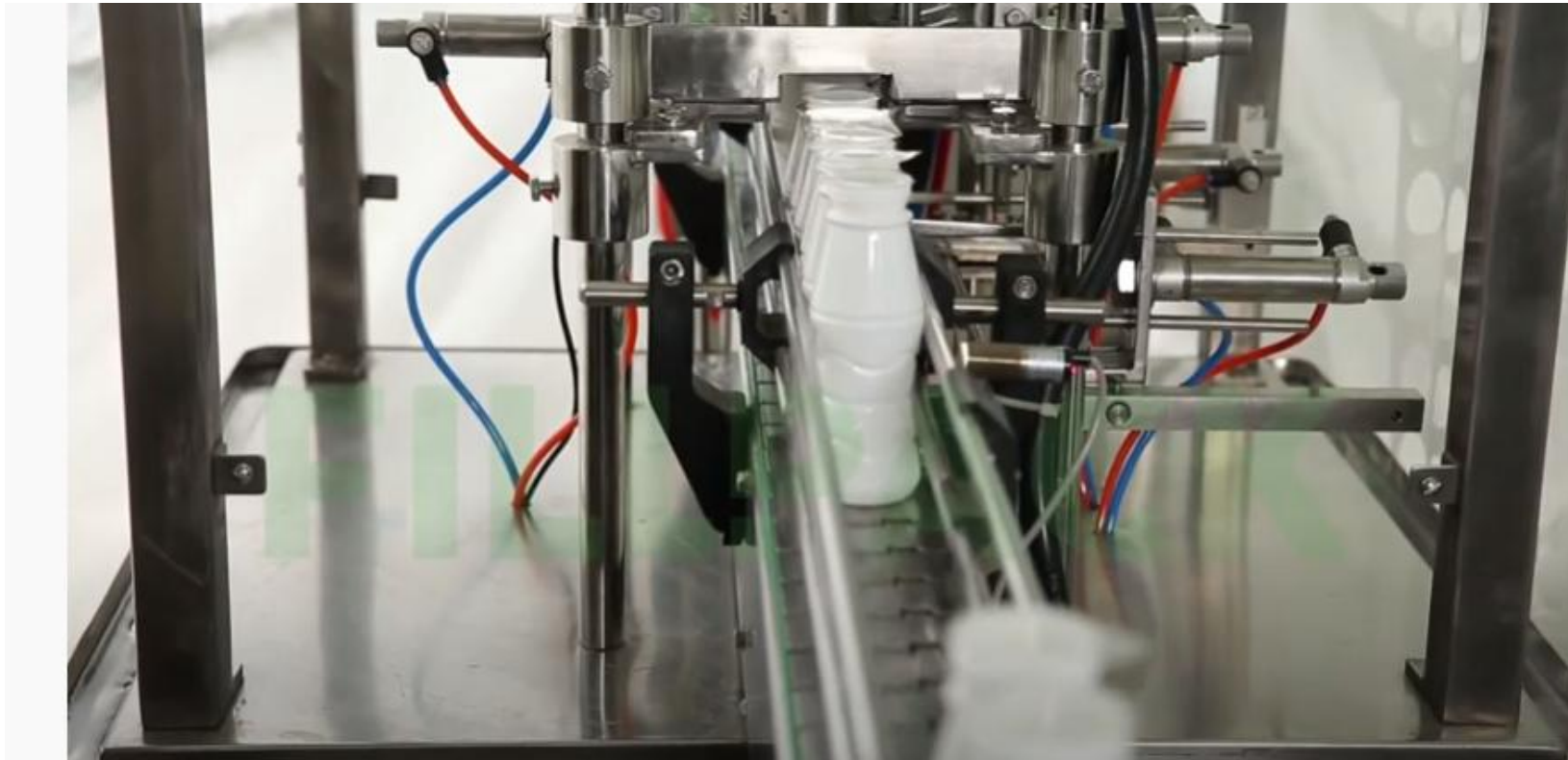


## PACKAGING MACHINES



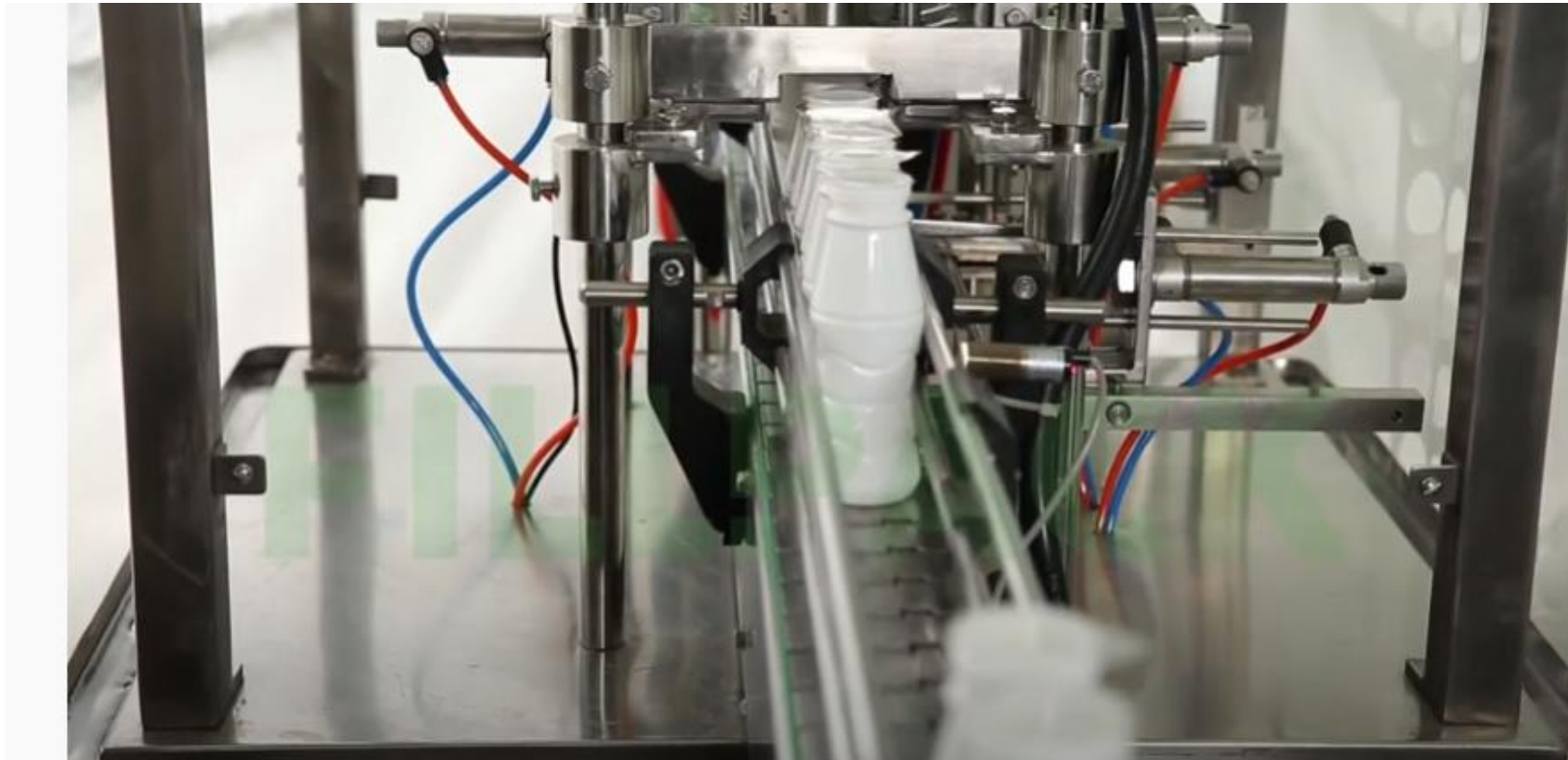
- PP bottles cleaning and filling (06 bottles at a time) on the conveyor belt (Picture source: FILLPACK TECHNOLOGY.)

## PACKAGING MACHINES



- PP bottles sealing and moving on the conveyor belt (Picture source: FILLPACK TECHNOLOGY.)

## PACKAGING MACHINES



- PP bottles cap placing and sealing on the conveyor belt (Picture source: FILLPACK TECHNOLOGY.)

# PACKAGING MACHINES



- PP bottles sleeving on the conveyor belt (Picture source: FILLPACK TECHNOLOGY.)



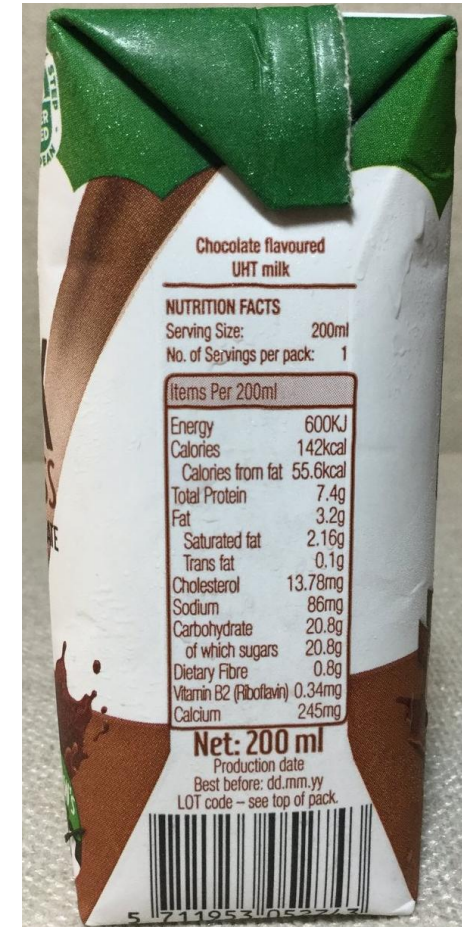
# SOME RECENT TRENDS IN PACKAGING

## ASEPTIC PACKAGING :

- Aseptic packaging is the filling of sterile containers with a commercially sterile product under aseptic conditions, and then sealing the containers so that re-infection is prevented; that is, so that they are hermetically sealed.
- **Aseptic packaging are used for :**
  - ✓ To take advantage of high temperature.
  - ✓ Increase shelf life of food products at normal temperature.
  - ✓ In package sterilization.

# LABELING

- ✓ Labeling is a means of performing the communication function of packaging, informing the consumer about nutritional content, net weight, product use and so on.
- ✓ Labeling acts as a silent salesman of a company
- ✓ Shape and design of the container attracts the customers.



# PACKAGING & LABELING LAWS - FSSAI

## General requirement for packaging:

- A utensil or container made of the following materials or metals, when used in the preparation, packaging and storing of food shall be deemed to render it unfit for human consumption:—
  - (a) containers which are rusty;
  - (b) enameled containers which have become chipped and rusty;
  - (c) copper or brass containers which are not properly tinned
  - (d) containers made of aluminum not conforming in chemical composition to IS:20 specification for Cast Aluminum & Aluminum Alloy for utensils or IS:21 specification for Wrought Aluminum and Aluminum Alloy for utensils.

## PACKAGING & LABELING LAWS - FSSAI

- **Labeling should contain following information:**
  - ✓ Name of the food product., List of ingredients, Nutritional information.
  - ✓ Declaration of VEG and NON VEG., AGMARK, BIS
  - ✓ Declaration of added food additives, Recycled, Promotions.
  - ✓ Name and address of manufacturer.





## PACKAGING & LABELING LAWS - FSSAI

- ✓ Net quantity
- ✓ Code number
- ✓ Lot number/ Batch number.
- ✓ Date of manufacturing.
- ✓ Best before date
- ✓ Country of origin.
- ✓ Bar Code
- ✓ Brand Name etc



# STORAGE OF FLAVORED MILK

- ❖ The shelf life of the flavoured milk depends on the type of packaging and process conditions.
- ❖ The pasteurized flavoured milk has a shelf life of 5–7 days under refrigerated storage while the sterilized product has a shelf life of about 90–180 days at room temperature.



For More details Contact:

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