

PACKAGING OF ICE CREAM



AATMANIRBHAR BHARAT

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

INTRODUCTION

As per Food Safety and Standards Regulations (FSSR), 2011 Ice- Cream, Kulfi, Chocolate Ice Cream or Softy Ice-Cream means the frozen milk product conforming to the composition specified, obtained by freezing a pasteurized mix prepared from milk or other products derived from milk, or both, with or without addition of nutritive sweeteners and other permitted non-dairy ingredients.

The said product may contain incorporated air and shall be frozen hard except in case of softy ice-cream where it can be frozen to a soft consistency.



INTRODUCTION

- Ice Cream is very popular in the northern and eastern regions of India and consumed directly or with other food items on festivals and happy occasions like marriages, birthday celebrations, etc
- Also consumed with other sweets items like:



Jalebi with Ice cream



Gajar ka Halwa
with Ice cream



Gulab Jamun
with Ice cream

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.

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.

FACTORS TO BE CONSIDERED IN SELECTION OF ICE CREAM CONTAINER

- The Cost
- Protection against moisture loss, temperature loss and contamination.
- Ease of handling and disposal (i.e. ease of opening and reclosure, if required)
- Effect upon the quality of ice cream
- Neatness of appearance
- Advertising that package may carry.
- Storage problem.
- Point of consumption in relation to the location of the factory.
- Size of unit desired.

PACKAGING MATERIAL FOR ICE CREAM

- Packaging of ice cream is mainly done to protect the ice cream from outside environment, especially after the completion of process so that ice cream can not melt easily and retain moisture, flavor, freshness for a longer period of time.



PACKAGING MATERIAL FOR ICE CREAM

1. LDPE :

- Low-density polyethylene is heat sealable, inert, odour free and shrinks when heated.
- It act as a barrier to moisture and has high gas permeability
- It is less expensive, therefore widely used.
- Has ability of fusion welded to itself to give good, tough, liquid-tight seals.



PACKAGING MATERIAL FOR ICE CREAM

2. CONE SLEEVES :

- ✓ Cone sleeves are aluminum covered paper and printed for brand promotion.
- ✓ May accommodate the waffle cone as per design and capacity



PACKAGING MATERIAL FOR ICE CREAM.

3. HDPE: High container has been also used for packaging of ice cream. The benefits of HDPE include:

- i. Weather-resistance
- ii. Malleability
- iii. Light-weight
- iv. Cost-effective
- v. Hygienic
- vi. Recyclable
- vii. FDA-approved



PACKAGING MATERIAL FOR ICE CREAM

4. Glass Bottles / jars:

- used for 100ml to 500ml.
- provide excellent protection to the product
- not in much use because of their fragility and high weight.
- **Higher cost is one of the drawback**

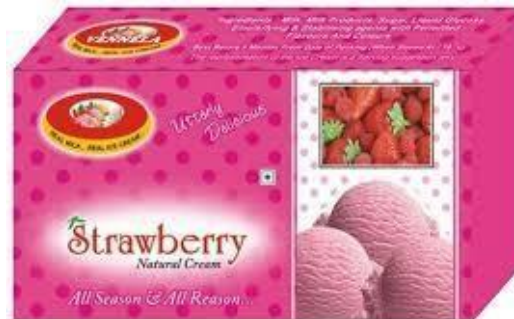


PACKAGING MATERIAL FOR ICE CREAM

5. CORRUGATED PAPER BOX :

Mostly used for ice cream brick packaging under refrigerated conditions.

- ✓ Recycled
- ✓ Economic
- ✓ Easy to print
- ✓ May take any shape
- ✓ Lightweight



PACKAGING MATERIAL FOR ICE CREAM

6. ICE CREAM IN WRAPPER:

Wrappers are typically made of multiple materials like:

- i. Mixture of plastic, aluminum and paper
 - ii. Polypropylene flim
 - iii. Cellophane
- ✓ Economic
 - ✓ Easy to print
 - ✓ May take any shape
 - ✓ Lightweight



PACKAGING MATERIAL FOR ICE CREAM

7. Steel / Tin Cans:

- used for bulk pack of 500 ml & 1000 ml can.
- properly lacquered tin cans are must be use
- must be sealed properly to prevent oxidation in the product
- **Higher cost is one of the drawback**



PACKAGING MACHINES



Ice cream cup filling and packaging line Source: Kunal International, Bengaluru

PACKAGING MACHINES



Ice cream lolly packaging line.

PACKAGING MACHINES



Ice cream packaging line (cups are putting in a carton)
Source: Delkor Systems Inc.

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 aluminium not conforming in chemical composition to IS:20 specification for Cast Aluminium & Aluminium Alloy for utensils or IS:21 specification for Wrought Aluminium and Aluminium 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.
- ✓ Declaration of added food additives.
- ✓ Name and address of manufacturer.

Claro Vita NUTRITION Protein
Ice Cream
Crème Glacée
Protéinée

Vanille
Vanilla

125 ml - 500 ml - 1 L

Valeur Nutritive: Vanille Crème Glacée	
Nutritional Facts: Vanilla Ice Cream	
Par 125 ml per 125 ml	
Teneur	Valeur Quotidienne
Amount	% Daily Value
Calories / Calories	175
Lipides / Fat 6.5 g	10 %
- Saturé / Saturated 3 g	15 %
* Trans / Trans 0 g	
Cholestérol / Cholesterol 20 mg	7 %
Sodium / Sodium 80 mg	3 %
Potassium / Potassium 128 mg	4 %
Glucides / Carbohydrate 7 g	2 %
Fibers / Fibers 0 g	0 %
Sucre / Sugar 5 g	
Protéines/ Proteins 25 g	
Vitamine A / Vitamin A	8 %
Vitamine C / Vitamin C	0 %
Calcium / Calcium	15 %
Fer / Iron	0 %
Vitamine D / Vitamin D	5 %

INGREDIENTS: MÉLANGE DE PROTÉINES LACTIQUES, SUBSTITUTS LACTIQUES MODIFIÉS, SUCRE, GLUCOSE, MONO ET DIBI-CÉRIDES, GOMME DE GUAR, POLYSORBATE 80, CARBAGHÉINE, ARÔMES NATURELS ARTIFICIELS, CLARO-SYSTÈME DE ÉDULCORANT (SUCRALOSE, SUCRE).

INGREDIENTS: WHEY PROTEIN MIX, MODIFIED MILK INGREDIENTS, SUGAR, GLUCOSE MONO AND DI-BI-CYCERIDES, GUAR GUM, POLYSORBATE 80, CARBAGEENAN, NATURAL, ARTIFICIAL & NATURAL FLAVOURS, CLARO SWEETENING SYSTEM 1 (SUCRALOSE, SUGAR).

Emploi suggéré: Servir avec des fruits ou faire un mélange avec les ingrédients dénomés. Pour des résultats optimaux, consommer immédiatement après l'arrosage.

Suggested use: Serve it with fruits or make a smoothie with your desirable ingredients. For optimal results, consume immediately after a workout.

CREMEUX, SAVOUREUX & SAIN: CREAMY & HEALTHY

Teneur réduite en sucre*, excellente source de protéine, bonne source de calcium.

Reduced in Sugar*, excellent source of protein, good source of calcium.

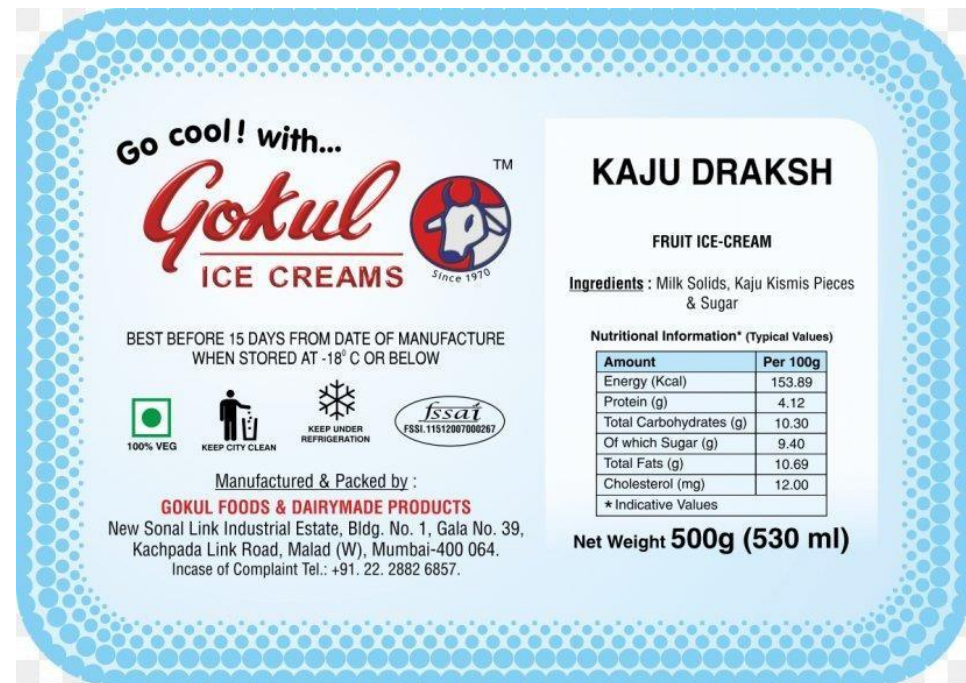
* 9 g de moins par portion ou 1/65 de moins de sucre qu'une crème glacée régulière.
* 9 g less or 1/65 less of sugar per portion than a portion of a regular ice cream.

CLARO-SYSTÈME DE ÉDULCORANT-1: Contient 5g sucres et moins de 10 mg/portion de sucralose pour remplacer 14 grammes de sucre.

CLARO-SWEETENING SYSTEM-1: Contains 5 g sugar and less than 10 mg/serving sucralose to replace 14 grams of sugar.

PACKAGING & LABELING LAWS - FSSAI

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



STORAGE OF ICE CREAM

- Ice cream should be kept cold with minimal temperature fluctuations throughout the cold chain, from factory cold store to retailer's cold store to store freezer, to prevent a decrease in product quality due to ice recrystallization and coarsening which gives the ice cream a grainy texture.

The proper storage requires following :

- **Refrigerated storage:** ice cream should be always stored in a refrigerated space under -18 Degree C till final consumption.
- **Airtight:** To avoid ice cream from absorbing moisture and unpleasant odour from air.

CONTACT DETAILS

National Institute of Food Technology Entrepreneurship and Management
Ministry of Food Processing Industries
Plot No.97, Sector-56, HSIIDC, Industrial Estate, Kundli, Sonipat, Haryana-
131028

Website: <http://www.niftem.ac.in>

Email: pmfmecell@niftem.ac.in

Call: 0130-2281089