Entrepreneur India

106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, +91 9097075054
Mobile: +91-9097075054
Email: npcs.ei@gmail.com, info@entrepreneurindia.co
Website: www.entrepreneurIndia.co



Handbook on Natural and Flavoured Ice Cream Manufacturing (Flavours, Formulae and Machinery Details)

Code	NI372
Format	paperback
Indian Price	₹1575
US Price	$150
Pages	480

ISBN	9788195744770
Publisher	Asia Pacific Business Press Inc.

Description

Ice cream has long been a favorite treat, capturing the hearts and taste buds of many. Its rich, creamy texture paired with sweet flavors brings comfort and delight in every bite. Recently, there's been a noticeable shift toward appreciating both natural and flavored ice cream, offering choices for those who enjoy pure, straightforward tastes and those who prefer more adventurous, complex blends. Whether you're someone who loves the simplicity of natural ingredients or you seek out new and exciting flavor experiences, ice cream presents an endless array of possibilities to explore.

Natural ice cream celebrates the purity and simplicity of its ingredients. Often crafted from milk, cream, sugar, and natural flavorings, these ice creams emphasize the true essence of each component. This style is perfect for those who wish to indulge in a dessert without added preservatives or artificial flavors. The focus is on high-quality, natural ingredients that bring out the best in each scoop. You might find classic flavors like vanilla, chocolate, and strawberry in their most genuine forms, tasting exactly as nature intended.

On the other hand, flavored ice cream is all about creativity and bold flavor combinations. By incorporating unique ingredients into traditional ice cream bases, these varieties offer something new and exciting with every bite. The innovation in flavored ice cream allows for a broader spectrum of taste experiences from comforting classics with a twist to daring and exotic flavors. This type of ice cream can include a range of elements from spices and herbs to fruits and other gourmet ingredients, transforming the ordinary into the extraordinary.

The global ice cream market size was estimated at USD 113.40 billion and is expected to grow at a CAGR of 3.9%. Factors such as the rising demand for innovative flavors, types, and impulse ice creams such as cones, sandwiches and pops in developing countries are expected to drive market growth. The increasing health consciousness among consumers is also expected to fuel the demand for premium ice creams in the upcoming years.

Moreover, health-conscious consumers are driving the demand for healthier alternatives in the ice cream industry. This has prompted manufacturers to innovate and introduce products with reduced sugar, fat and calorie content as well as options that cater to specific dietary preferences such as dairy-free, gluten-free and vegan ice creams. With an increasing emphasis on wellness and mindful eating, consumers are

seeking guilt-free treats that align with their health goals without compromising on taste.

The book serves as a roadmap for setting up an ice cream manufacturing unit. It's a guide to transforming a passion for frozen desserts into a profitable venture. By combining technical expertise, creative inspiration and business strategies, it empowers readers to excel in the competitive world of ice cream manufacturing.

The **"Handbook on Natural and Flavoured Ice Cream Manufacturing** (Flavours, Formulae, and Machinery Details)**"** is a comprehensive guide designed for entrepreneurs, manufacturers and enthusiasts looking to venture into the ice cream industry. This book is an indispensable resource that covers aspect of ice cream production. With its easy-to-understand language and practical approach, this book is a valuable tool for mastering the art and science of natural and flavored ice cream manufacturing. It inspires readers to create premium products that cater to the evolving tastes and preferences of modern consumers. Start your journey to crafting exceptional ice creams with this essential guide!

Content

Table of Content:

1. Ice Cream-History and Development

1.1 Historical Background

2. Composition of Ice Cream Mixes

2.1 Composition

2.2 The Role of the Constituents

2.2.1 Milk Fat

2.2.2 Milk Solid Not Fat (MSNF)

2.2.3 Sweetener Solids

2.2.4 Egg Yolk Solids

2.2.5 Stabilizers

2.2.6 Emulsifiers

2.2.7 Total Solids

2.2.8 Water and Air

2.2.9 Flavour

2.3 Importance of Flavour

2.4 Colour

2.5 Optional Ingredients

2.6 The Balanced Mix

2.6.1 Conditions that Limit the Balancing of a Mix

2.6.2 Mix Properties

2.6.3 Mix Stability

3. Diet-Science and Classification of Ice Cream

3.1 Nutritional Value

3.1.1 Energy Value and Nutrients

3.1.2 Energy Content of Food

3.2 Caloric Content of Ice Cream and Related Products

3.2.1 Energy Content of Ice Cream and Related Products

3.3 Protein Content of Ice Cream

3.3.1 Milk Fat Content of Ice Cream

3.4 Milk Fat Content

3.5 Carbohydrates

3.5.1 Carbohydrates in Ice Cream

3.5.2 Minerals

3.6 Minerals in Ice Cream

3.7 Vitamins

3.7.1 Vitamins in Ice Cream

3.8 Palatability and Digestibility of Ice Cream

3.9 Classification of Ice Cream and Related Products

3.10 Commercial Grouping of Ice Cream and Related Products

3.10.1 Plain Ice Cream

3.10.2 Chocolate

3.10.3 Fruit

3.10.4 Nut

3.10.5 Frozen Custard

3.10.6 Confection

3.10.7 Bisque

3.10.8 Puddings

3.10.9 Mousse

3.10.10 Variegated Ice Cream

3.10.11 Neapolitan

3.10.12 Ice Milk

3.10.13 Fruit Sherbet

3.10.14 Ice

3.10.15 Novelties

3.10.16 Frappe

3.10.17 Granite

3.10.18 Souffle

3.10.19 Frozen Yoghurt

3.10.20 Lacto

3.10.21 Fruit Salad

3.10.22 Fancy Moulded Ice Cream

3.10.23 Mellorine-type Products

3.10.24 Artificially Sweetened Frozen Dairy Foods

3.10.25 Non Dairy Frozen Dessert

3.10.26 Labelling Requirement Grouping

3.10.27 Regulatory Type Classification

4. Ingredients of Ice Cream–Roles and Properties

4.1 Sources of Milk Solids Not Fat

4.1.1 Milk

4.1.2 Milk Products Used in Ice Cream Sources of Fat

4.1.3 Skim Milk

4.1.4 Butter Milk

4.1.5 Concentrated Skim Milk

4.1.6 Sweetened Condensed Milk

4.1.7 Skimmed Milk Powder

4.1.8 Special Commercial Products

4.1.9 Whey Protein Concentrate

4.1.10 Mineral Salts

4.1.11 Unsalted Butter

4.1.12 Sweeteners

4.2 Sources of Sugars

4.2.1 Effect of Sweetener on Freezing Point

4.2.2 Sucrose

4.2.3 Corn Sweeteners and Related Ingredients

4.2.4 Dextrose

4.2.5 Corn Syrup

4.2.6 Dried Corn Syrup

4.2.7 Invert Sugar

4.2.8 Honey

4.2.9 Other Sweeteners

4.2.10 Nonnutritive Sweeteners

4.3 Egg and Egg Products

4.3.1 Fat Replacers

4.3.2 Sugar Alcohols

4.3.3 Syrups

4.4 Stabilizers and Emulsifiers

4.4.1 Function of Stabilizers

4.4.2 Influence on Ice Crystal Size and Texture

4.4.3 Shape and Body Characteristics

4.4.4 Retention of Air

4.4.5 Role in Fat Destabilization

4.4.6 Control of Sandiness

4.5 Stabilizers

4.5.1 Casein

4.5.2 Sodium Alginate

4.5.3 Carrageenan

4.5.4 Guar Gum

4.5.5 Locust Bean Gum

4.5.6 Sodium Carboxy Methyl Cellulose (CMC)

4.5.7 Pectin

4.5.8 Agar-Agar

4.5.9 Xanthan Gum

4.5.10 Hydroxypropyl Methyl Cellulose

4.5.11 Other Gums

4.5.12 Starch

4.5.13 Stabilizer Blends

4.6 Emulsifiers

4.7 Type of Emulsifiers

4.7.1 Glycerides

4.7.2 Distilled Monoglyceride

4.7.3 Polysorbates

4.7.4 Polyglycerol Esters

4.7.5 Fruit Acid Esters

4.7.6 Ethoxylated Mono and Diglycerides

4.7.7 Egg Yolk Solids

4.7.8 Function of Emulsifiers

4.7.9 Whipping Ability and Overrun Control

4.7.10 Stiffness and Dryness

4.7.11 Secondary Effect of Emulsifiers

4.7.12 Selection of Stabilizer and Emulsifier

4.7.13 Processing the Cocoa Beans

5. Flavours and Colours–Materials and Preparation

5.1 Flavours for Frozen Desserts

5.2 Vanilla

5.2.1 Imitation Vanilla Flavourings

5.2.2 Consistency in Vanilla Quality

5.2.3 Vanilla Ice Cream

5.3 Chocolate and Cocoa

5.3.1 Chocolate Ice Cream

5.3.2 Freezing Characteristics

5.3.3 Chocolate Confections

5.4 Fruits in Frozen Desserts

5.4.1 Fresh Fruit

5.4.2 Candied and Glaced Fruits

5.4.3 Dried Fruits

5.5 Procedures and Recipes

5.5.1 Strawberry Ice Cream

5.5.2 Raspberry Ice Cream

5.5.3 Peach Ice Cream

5.5.4 Cherry Ice Cream

5.5.5 Ice Cream with Complex Flavours

5.5.6 Sugar Free

5.6 Nuts

5.7 Spices and Salt

5.8 Colour in Frozen Desserts

5.9 Flavouring Lowfat and Nonfat Ice Cream

6. Ice Cream Mixer–Preparation Processing and Mix Calculations

6.1 Preparation of the Mix

6.1.1 Combining the Ingredients

6.2 Pasteurization of the Mix

6.2.1 Pasteurization Renders the Mix

6.2.2 Homogenizing the Mix

6.2.3 Physical Effect of Homogenization

6.2.4 Homogenizing Temperature

6.2.5 Location of Homogenizer

6.2.6 Pressure for Homogenization

6.2.7 Care of the Homogenizer

6.2.8 Cooling the Mix

6.2.9 Ageing the Mix

6.2.10 Making the Mix in a Vaccum Pan

6.2.11 Forewarming

6.2.12 Concentrating the Dairy Products

6.2.13 Weighing the Concentrated Dairy Products

6.2.14 Adding Sugar and Stabilizer and Pasteurizing

6.3 Flavouring Mixes

6.3.1 Cooling, Standardizing and Ageing

6.4 Packaging Mixes for Sale

6.5 Calculation of Ice Cream Mixes

6.5.1 The Importance of Calculations

6.6 Mathematical Processes Most Frequently Used

6.7 Methods of Calculating Mixes

6.7.1 Pearson Square Method

6.7.2 Arithmetical Method

6.8 Calculating Mixes with the Serum Point Method

6.9 Mix Decisions

6.10 Simple Mixes

6.11 Complex Mixes

7. The Freezing Process

7.1 The Freezing Point of Solutions

7.2 The Freezing Point of Ice Cream Mixes

7.3 Prefreezing Tests

7.4 Freezing Operations

7.5 Changes that take Place during the Freezing Process

7.6 Refrigeration Needed to Freeze Ice Cream

7.7 Types of Freezers

7.7.1 The Continuous Freezer

7.7.2 The Refrigeration System

7.7.3 Operating the Continuous Freezer

7.7.4 Batch Freezer

7.7.5 Freezing Procedure for Batch Freezers

8. Ice Cream Handling (Packaging, Labelling, Hardening and Shipping)

8.1 Considering the Package

8.2 Requirements for Packaging

8.2.1 Paper

8.2.2 Substance of Paper

8.2.3 Stiffness

8.2.4 Ink

8.2.5 Wax

8.2.6 Adhesive

8.2.7 Wax Content

8.2.8 Odour and Taint

8.2.9 Toxicity

8.2.10 Resistance to Deep Freezing

8.2.11 Leak Proofness

8.2.12 Paper Board

8.2.13 Thickness

8.2.14 Wax Content

8.2.15 Stiffness

8.2.16 Ink

8.2.17 Wax Quality

8.2.18 Varnish and Lacquer

8.2.19 Adhesive

8.2.20 Odour and Taint

8.2.21 Manufacturer's Joint

8.3 The Packaging Operation

8.3.1 Bulk Packaging

8.3.2 Packaging for Direct Sale to Consumers

8.3.3 Economy in Packaging Operations

8.4 The Hardening Process

8.4.1 Factors Affecting Hardening Time

8.4.2 Types of Hardening Facilities

8.4.3 Rapid Hardening Systems

8.4.4 Precautions to Observe in the Operation of Hardening and Storage Rooms

8.5 Handling, Storing and Shipping

8.5.1 Shipping with Dry Ice

8.6 Quality is the Goal

9. Cleaning and Sanitation

9.1 Principles of Cleaning

9.2 Cleaning

9.2.1 Rinsing

9.2.2 Removal of Sediment

9.2.3 Removal of Fat

9.2.4 Removal of Proteins

9.2.5 Removal of Mineral Deposits

9.2.6 After Rinsing with Clean Water

9.2.7 Cleaning Agents

9.2.8 Alkalis

9.2.9 Acids

9.2.10 Water Chelating Agent

9.2.11 Emulsifiers and Wetting Agents

9.2.12 Protective Substances

9.2.13 Composite Cleaning Agents

9.2.14 Alkaline Composites

9.3 Sanitization of Equipment

9.4 Sanitary Environment

9.5 Hygienic Personnel

9.6 Test of the Finished Product

9.6.1 Hazard Analysis and Critical Control Points (HACCP)

9.6.2 HACCP Principles

9.7 Summary

10. Defects and Grading of Ice Cream

10.1 Flavour Defects

10.1.1 Flavouring System

10.2 Sweetener System

10.3 Body and Texture Defects

10.3.1 Defects of Body

10.3.2 Defects of Texture

10.4 Colour

10.5 Package

10.6 Melting Quality

10.6.1 Defects of Melting Quality

10.6.2 Defects in Ice Cream, their Causes and Prevention

10.7 Evaluating Frozen Desserts

10.8 Scoring Methods

10.9 Ice Cream Clinics

11. How to Start Flavoured Ice Cream Manufacturing Business

11.1 Business Planning and Setup

11.2 Equipment and Facility Setup

11.3 Ingredient Sourcing and Recipe Development

11.4 Production Process

11.5 Quality Control and Food Safety

11.6 Marketing and Distribution

12. Varieties, Novelties and Specials

12.1 Plain Ice Cream

12.1.1 Formula

12.1.2 Variations

12.2 Candy Ice Cream

12.2.1 Variations

12.3 Chocolate Ice Cream

12.3.1 Chocolate Malt

12.3.2 Chocolate Malt and Nuts

12.3.3 Chocolate Toffee

12.3.4 Chocolate Cool

12.4 Fruit Ice Cream

12.4.1 Variations

12.5 Nut Ice Cream

12.5.1 Variations

12.6 Variegated or Rippled Ice Cream

12.6.1 Probiotic Ice-Cream

12.6.2 Manufacture of Probiotic Ice-Cream

12.7 Labelling of Probiotic Foods

12.8 Diet Science for Ice Cream

12.9 Sorbet and Ice Cream

12.10.1 Manufacturing Procedure

12.10 Kulfi

12.10.1 Product Description

12.10.2 Technology

12.10.3 Innovations

12.10.4 Formulation of Kulfi

12.10.5 Sweet Fresh Cream and Fresh Milk

12.10.6 Frozen Cream

12.10.7 Fluid Whole and Skim Milk

12.10.8 Plain Condensed Skim Milk

12.10.9 Plain Condensed Whole Milk

12.10.10 Sweetened Condensed Whole or Skim Milk

12.10.11 Packaging

12.10.12 Physico-Chemical Aspects

12.10.13 Shelf Life

12.11 Decoration

13. Ice Cream Microbiology

13.1 Ice Cream as a Carrier Disease

13.2 The Bacterial Count of Ice Cream

13.2.1 Mix Ingredients as a Source of Bacteria

13.2.2 Dairy Products as a Source of Bacteria

13.2.3 Sugar as a Source of Bacteria

13.2.4 Stabilizers as a Source of Bacteria

13.2.5 Flavouring Materials as a Source of Bacteria

13.2.6 Strawberries, Raspberries or Black Berries

13.2.7 Peaches

13.2.8 Oranges and Lemons

13.2.9 Bananas and Mangoes

13.2.10 Dried Fruits

13.2.11 Fruit Juices

13.2.12 Nuts

13.2.13 Colours as a Source of Bacteria

13.2.14 Eggs as a Source of Bacteria

13.2.15 Destruction of Bacteria by Pasteurization

13.2.16 Recontamination of the Mix after Pasteurization

13.2.17 The Effect of Ageing on the Bacterial Count

13.3 Bacteriological Standards for Ice Cream

13.4 Milk and Milk Products

13.4.1 Ice Cream Defined

13.4.2 Classification of Ice Creams and Related Frozen Foods

13.4.3 Composition of Commercial Ice Cream

13.4.4 The Ingredients used in the Manufacture of Ice Cream

13.4.5 Quality of Dairy Products for Ice Cream

13.4.6 Sweeteners for Ice Cream

13.4.7 Ice-Cream Stabilizers

13.4.8 Flavouring Materials

13.4.9 Preparation of the Ice-Cream Mix

13.4.10 Technical Skill Necessary

13.4.11 Procedure in Calculating a Mix

13.4.12 Homogenizing the Mix

13.4.13 Ageing the Mix

13.4.14 Quality of Ice Cream

13.4.15 Ice-Cream Defects

13.4.16 Body and Texture Defects

13.4.17 Colour Defects

13.4.18 Distribution of Ice Cream

13.4.19 Ice-Cream Making in the Home

14. Methods of Laboratory Tests

14.1 Judging Flavour and Aroma

14.2 Gerber Test for Fat in Milk and Cream

14.3 SNF and Total Solids in Milk by Lactometer

14.4 Analysis of Fat in Ice Cream

14.5 Ether Extraction Test

14.6 Preparation of Sample

14.7 Procedure

14.7.1 Using the Fat Extraction Tube or the Rose Gottlieb Method

14.7.2 Using the Mojonnier Fat Extraction Flask

14.8 Gerber Test

14.9 Apparatus and Reagents

14.10 Preparation of Sample

14.10.1 Procedure

14.10.2 Determination of Total Solids

14.10.3 Determination of Acidity in Plain Ice Cream Mix

14.10.4 Determination of Protein in Ice Cream

14.10.5 Assessing Protein Stability in Ice Cream Mix

14.10.6 Specific Gravity of Ice Cream Mix

14.10.7 Determination of Free Fat in Ice Cream (Free Fat Estimate or FFE Value)

14.10.8 Apparatus and Reagents

14.10.9 Procedure

14.10.10 Chromatographic Analysis

14.10.11 Stability to Heat Shock

14.10.12 Meltdown Test and Shape Retention

14.10.13 Farrall Homogenization Index

14.11 Measurement of Viscosity

14.11.1 Pipette Method

14.11.2 Borden Flow Meter Method

14.11.3 Brookfield Viscometer

14.11.4 Miscroscopic Examination of Ice Cream Texture

14.11.5 Test for Ammonia Leaks

14.11.6 Surface Tension

15. Ice Cream Novelty/Impulse Products

15.1 Molded Novelties

15.2 Extruded Novelties

16. Ice Cream Shelf-Life

16.1 Temperature Fluctuations and Ice Recrystallization

16.2 The Role of Stabilizers

16.3 Maintaining Shelf-Life

17. Ice Cream Ingredients

17.1 Milkfat (or “Butterfat”) / Fat

17.2 Milk Solids-Not-Fat

17.3 Lactose Crystallization

17.4 Sweeteners

17.5 Stabilizers

17.6 The Stabilizers in use Today Include

17.6.1 Locust Bean Gum

17.6.2 Guar Gum

17.6.3 Carboxymethyl Cellulose (CMC)

17.6.4 Xanthan Gum

17.6.5 Sodium Alginate

17.6.6 Carrageenan

17.7 Emulsifiers

17.7.1 Mono- and Di-Glycerides

17.7.2 Polysorbate 80

18. Mix Calculations for Ice Cream and Frozen Dairy Desserts

18.1 Problem 1

18.2 Solution

18.3 Problem 2

18.4 Solution

18.5 Problem 3

18.6 Problem 4

18.7 Problem 5

18.8 Problem 6

18.9 Problem 7 (Using Liquid Sweeteners)

19. Structure of Ice Cream

19.1 Colloidal Aspects of Structure

19.2 Ice Cream Meltdown

19.3 Structure from the Ice Crystals

20. Theoretical Aspects of the Freezing Process

20.1 The Process of Crystallization

20.2 Importance of Crystallization Rate

20.3 Importance of Temperature Fluctuations and Re-Crystallization

20.3.1 Mechanisms of Ice Recrystallization

20.4 Formation of the Glassy Phase in Frozen Foods

20.5 Formation of a Dilute Glass

21. Ice Cream Manufacture

21.1 Blending

21.2 Pasteurization

21.3 Homogenization

21.4 Ageing

21.5 Freezing and Hardening

21.6 Hardening

22. Ice Cream Flavours

22.1 Introduction

22.2 Vanilla

22.2.1 Concentrated Extract

22.3 Chocolate and Cocoa

22.3.1 Imitation Chocolate

22.3.2 White Chocolate

22.4 Fruit Ice Cream

22.5 Nuts in Ice Cream

22.5.1 Quality Control of Nutmeats for Ice Cream

22.6 Colour in Ice Cream

23. Homemade Ice Cream

23.1 Ingredients Used

23.2 Preparation of the Ice Cream Mix

23.3 Aging the Mix

23.4 Freezing the Mix

23.5 Regular Vanilla Ice Cream

23.6 Low Calorie Vanilla Ice Cream

23.7 Milk Substitute Vanilla Ice Cream

23.8 Hints for Making Good Ice Cream

24. Ice Cream Formulations

24.1 Ice Cream Mix General Composition

24.2 Formulation Considerations

24.2.1 Economy Brands

24.2.2 Standard Brands

24.2.3 Premium Brands

24.2.4 Super-Premium Brands

24.3 Suggested Mixes

25. Automatic Ice Cream Baking Machine Agc-Series

25.1 Features

25.2 ACG Series

25.2.1 Workers

25.2.2 Area

25.3 Features

25.3.1 Gas Burners

25.3.2 Scraping Device

25.3.3 Cone Ejector

25.3.4 Stacking Device

25.4 Technical Data

25.5 Output Details

25.6 Baking Process

25.7 Exchange Moulds For Cones & Cups

26. New Processing Technology of Flavored Ice Cream

26.1 Advanced Flavor Infusion Techniques

26.2 Enhanced Texture with Cryogenic Freezing

26.3 Dairy and Non-Dairy Innovations

26.4 Automation and Smart Production

26.5 Eco-Friendly Packaging and Production

26.6 Customizable Ice Cream Bases

26.7 Market Benefits

26.8 Incorporating Functional Ingredients

26.9 Unique Flavor Profiles

26.10 Improved Freezing and Storage

26.11 Allergen-Free Processing

26.12 Faster Production with Modular Systems

26.13 Enhanced Consumer Experience

26.14 Targeting Niche Markets

26.15 Future Trends in Ice Cream Technology

26.16 Conclusion

27. Sample Ice Cream Cone Drawing

27.1 Design for Cone Diameter 30-40mm

27.2 Design for Cone Diameter 40-50mm

27.3 Design for Cone Diameter 50-56mm

27.4 Design for Sugar Cones

27.5 Design for Cups

28. Molded Cones & Cups

28.1 Process & Machines

29. Ice Cream Cone Making

29.1 Product & Its Application

29.2 Market

29.3 Raw Material Requirements

29.4 Manufacturing Process

29.5 Wafer Cone Machine

29.5.1 Technical Parameter

29.5.2 Spare Parts

29.6 Wafer Cone/Cup Pictures for Reference, Other Size & Shape can be Customized

30. Success Story of Natural Ice Cream

30.1 About Natural Ice Cream

30.2 Four PS of Naturals Ice Cream

30.2.1 Product

30.2.2 Price

30.2.3 Place

30.2.4 Promotion

30.2.5 Success and the Future

31. Specifications of Ice Cream Plant

31.1 Equipments and Machinery for Ice Cream Plant (200 LPH)

31.2 Technical Specification

31.3 Output

31.4 Machine Having Following Operations

31.5 Advantage of Plc

31.6 Technical Data

31.7 Refrigeration System

31.8 Electrical Specification

32. Ice Cream Production using Natural Ingredients (Manufacturing, Formulation, Process)

32.1 Ingredient Sourcing and Preparation

32.1.1 Ingredient Sourcing

32.1.2 Ingredient Preparation

32.2 Ice Cream Preparation Process

32.2.1 Ingredient Preparation

32.2.2 Mixing

32.2.3 Pasteurization

32.2.4 Homogenization

32.2.5 Cooling and Aging

32.2.6 Flavoring (if not added earlier)

32.2.7 Freezing

32.2.8 Packaging

32.2.9 Hardening

32.3 Basic Formula for Ice Cream using Natural Ingredients

32.4 Machinery and Equipment used in Manufacturing of Ice Cream using Natural Ingredients

32.4.1 Mixing Equipment

32.4.2 Freezing Equipment

32.4.3 Mixing and Flavoring Equipment

32.4.4 Packaging Equipment

32.4.5 Storage and Hardening Equipment

32.4.6 Cleaning and Maintenance Equipment

32.4.7 Quality Control Equipment

32.4.8 Refrigeration Systems

32.4.9 Other Equipment

33. BIS Standards

34. ISO Standard

35. Plant Layout Description of Flavoured Ice Cream

35.1 Main Production Areas

35.1.1 Receiving and Storage Area

35.1.2 Processing Area

35.1.3 Freezing and Packaging Area

35.1.4 Hardening Room

35.1.5 Cold Storage

35.2 Layout Considerations

35.2.1 Product Flow

35.2.2 Temperature Zones

35.2.3 Expansion Potential

35.2.4 Hygiene and Safety

35.2.5 Utility Access

36. Plant Layout and Process Flow Chart & Diagram

37. Photographs of Plant and Machinery with Suppliers Contact Details

- Ice-Cream Plant
- Ice Cream Processing Line
- Ice-Cream Filling Machines
- Pasteurizing

- Ice Cream Freezer – Continuous
- Pasteurizing Machine
- Fruit Feeder
- Ice Cream Packaging Machine
- Ageing Vat
- Softy Ice Cream Machine
- Ripple Machine
- Plate Heat Exchanger
- Ice Cream Homogenizer
- Ice Candy Production line

About Niir

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and/or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes various technology books, directories, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists, and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureaus, consultants and consultancy firms as one of the inputs in their research.