The Complete Technology Book on Soaps (2nd Revised Edition)

Author: - NIIR Board of Consultants &

Engineers

Format: hardcover

Code: NI110 Pages: 496

Price: Rs.1425US\$ 150

Publisher: NIIR PROJECT CONSULTANCY

SERVICES

Usually ships within 5 days

Soap is the traditional washing compound made from oil fats and caustic alkali. It is an item of daily necessity as cleaning agent. There are few specialty soaps like the washing soaps, castile soaps, sandal soap, specially flavored soaps, medicated soaps, toilet soaps and baby soaps. Population growth, especially households with children has a proportional impact on the growth of the manufacturing sector of the industry. The soap industry is vivacious, varied, creative and tricky, and has the prospective to provide a gratifying career. With increasing popularity there has been increase in potential competitors but it still has the opportunity of further exploitation.

Today with increase in disposable incomes all around the world, demand for these products expected to increase because consumers are moving up towards premium products. With increasing awareness of hygienic standards, the market for the Soap is growing at a rate higher than 8% annually. People have become more creative in trying to find new ways in which they can make soap either for domestic use or commercial purposes. This book will provide all the basic facts and information you need to get started. You will be able to slowly build your way up to completely master the art of soap making.

The book contains processes formulae, Photographs of Plant & Machinery with Supplier's Contact Details, Addresses of Raw Material Suppliers and providing information regarding manufacturing method of different washing and toilet soaps. Some of the fundamentals of the book are raw material oil and fats, fatty acids, manufacture of soap products, technology of soap manufacturing, various formulations of soaps, soap perfumery, management of soap factories, analytical methods.

This book will be a mile stone for its readers who are new to this sector, will also find useful for professionals, entrepreneurs, those studying and researching in this important area.

Introduction
Definition
Uses
Cleansing Mechanism
Characteristics of Soap
Saponification of Fats - The Basic Chemical
Reaction Making Soap

2. Raw Materials Oil and Fats

(The Main Raw Materials for Soaps)

Classification of Fats/Oils

Some of the Most Useful Fats and Oils

Tallow

Coconut Oil

Palm Oil

Palm Kernel Oil

Cottonseed Oil

Castor Oil

Chinese Vegetable Tallow

Corn Oil

Rice Bran Oil

Linseed Oil

Olive Oil

Groundnut Oil

Tall Oil

Mahua Oil

Babassu Oil

Neat's-Foot Oil

Lard

Greases

Fish Oil

Hydrogenated Oils

Purification of Soap Fats

Acid Washing

Alkali Refining

Bleaching

Absorbent Bleaching

Bleaching By Using Oxidizing Agents

Testing Of Soap Fats

Properties

Non Fatty Raw Materials For Soap

The Alkalis

Soap Builders

Filler

Stabilizers, Anti-oxidants

Other Additives (Foam Producers)

Foaming Agents Used in Soap

Solvents

Medicaments/Deodorants/Bacteriostatic Agents

Clarifiers

Colouring Matters

Preparation of Colours

Water Soluble

Oil Soluble

Alcohol Soluble

Milled Soaps

Full-boiled/Semi-boiled/cold-made Soaps

Soap Bases and Liquid Soaps

Washing/Laundry Soaps

Medicated Soaps

Perfumes

Comprehensive Details

Essential Oils

Isolates

Synthetic Chemicals

3. Fatty Acids

Types of fatty acids and their physical

properties

Physical properties of fatty acids

Melting point

Boiling point

Viscosity

Density

Solubilities

Refractive Index

Heat of crystallisation

Polymorphism

Fatty acids of oils and fats

Raw materials of fatty acids

Animal fats

Tall oil

Vegetable oils and soap stocks

Manufacture of fatty acids

Pretreatment of feed stock

Fat splitting

High pressure catalytic splitting

High pressure steam splitting

Continuous fat splitting

Refining of crude fatty acids

Distillation of fatty acids

Mazzoni fat splitting and distillation process

Distillation of crude fatty acid

Splitting

Distillation

Splitting plant using thermic fluid instead

of steams

Fractional distillation of fatty acids

Development trends in fatty acid distillation

Panning & pressing process

Solvent crystallisation process

Lurgi Wetting Method

Recovery of glycerine

Pre-treatment and evaporation of spent-lye

Pre-treatment and evaporation of sweet water

Distillation of crude glycerine

Synthesis of fatty acids

4. Manufacture of Soap Products

Health and safety Factors

Classification of Soap Products

Methods of Manufacture

Various Finishing Methods

Production

Full Boiling Process (Description)

The Process

First Stage

Second Stage

Third Stage

Fourth Stage

Fifth Stage

Washing Bar/Cake Soap From Neat Soap

Jet Saponification Process

Glycerine Recovery

Semi-Boiling Process and Cold-Made Process

General Description

Production of Washing Bar/Cake Soap

by Semi-Boiling/Cold-Made Process

Equipments

Process Operations

Examination of Cold-Made Products

Formulations for Washing Soaps

Washing Soap Using Soap Stock as Main

Fatty Raw Material

A Typical Batch

Toilet Soap

Milling Process

Floating Toilet Soap Cake

Manufacture of Toilet Soap by Semi-Boiled/

Cold-Made Process

Procedure

Alkali

Milled Finished Soap

A Typical Batch For Toilet Soap

Mottled Soap

Carbolic Acid Soap

Suggested Formulation

Procedure

Medicated Soaps

Castile Soap

Castile Soap by Boiling Process

Some Suggested Formulations for Castile Soap

Deodorant Soaps

Various Industrial Soaps

Textile Soaps

Laundry Washing Alds

A Fabric Cleaning Compound

Cotton Scouring Soap

Dry Cleaner's Soap

Water Softener

Jelly Soap/Soft Soap

Automobile Soap

Wire Drawing Soap

Scouring Soap

Preparation of Washing Soap Powder

Simplified Method

Powdered By Pulverising Method

Washing Powder by Spray-Crystallization

Soap Beads or Granules by Spray-Drying

Soap Flakes

Shaving Soaps

Procedure

Shaving Cream

Other Formulation

Brushless/Latherless Shaving Cream

Liquid Shaving Cream

Basic Combination

Thicker Cream

Aerosol Package

Liquid Soaps/Shampoos

Process of Manufacture

Equipments

Liquid Toilet Soap Concentrates

Liquid Washing Soap Concentrate

Shampoos

Classification

Physical States

Characteristics

Various Additives of Shampoos Imparting

Special Properties

Solubilizer

Opacifiers

Thickeners for Body or Viscosity

Foam Stabilizers

Conditioning Agents

Agents for Resistance of Hard-Water

Germicidal Agents

Preservatives

Soap Shampoos

Older Methods

Modern Methods

Some Typical Formulations

Shampoos Based on Synthetic Surfactants

General Formulations

Liquid Cream Shampoos and Paste Cream

Foamless Oil Shampoos

Baby Shampoos

Medicated Dandruff Shampoos

Other Miscellaneous Shampoos

Aerosol Shampoos (Pressure Dispersed)

Method of Continuous Saponification of Fats

by Alkali Solution

Method of Continuous Splitting of fats into

fatty Acids and Glycerol with Simultaneous

Neutralization of free fatty Acids with Alkali

Yielding Soap

Continuous Neutralization Process

Description of A Process

Advantages

Disadvantages

Continuous Neutralization Process using Fatty

Acids Instead of fats

Batch Methods of Splitting fats into fatty

Acids and Glycerol

Purification of Fatty Acids

5 Technology of Soap Manufacturing

Manufacturing Soap

Techniques

Saponification Equipments used by the

Small-scale sector

Equipment for batch soapmaking

Improved methods of saponification

Lye Absorption

Saponification Loop

Saponification of Distilled Fatty Acids

Alfa Laval Continuous Saponification

Washing of saponified soap

Staight washes

Counter current washes using a set of pans

Counter current washes in a single

divided pan

Rotating disc contactor (RDC)

Fitting of Soap

Method of Expressing Free Alkali, Chloride

and TFM

Plant for Total Soapmaking Operation

Construction Materials for Soapmaking Plants

Earth bleaching of oils

Chemical bleaching

Fatty acids

Lye treatment

Storage of raw lye

Output of Soap and Glycerine

Analysis of oils

Ester value of oils

Glycerine Recovery

Introduction

Glycerine Recovery Procedure

Purpose of Lye Treatment

Method of Lye Treatment

Treatment of Sweet Water

First treatment

Second treatment

Evaporation

Continuous Finisher

Refining of Crude Glycerine

Production of Laundry and Toilet Soaps

Introduction

Frame Cooling of Soap

Production of Filled Soaps on the Mazzoni

Billeting

Technology of Toilet Soaps

Introduction

Oil blend

Production of toilet soap

Mixing of soap

Preservatives

Perfumes

Colours

Opacifiers

Optical brightners

Super-fatting agent

Structurants

Bactericides and germicides

Miscellaneous additives

Design of mixers

Refiners vs. Mills

Plodding

Stamping

Wrapping

Packing

Carbolic Soap

Transparent Soaps

Introduction

Manufacturing methods

Manufacturing method

Translucent Soaps

Oil blend

Floating Soap

Marbled Soap

Process Control

Introduction

Pre-treatment of Raw Materials

Soapmaking

Fat charge control

Colour of soap base

Free alkali and chloride

Unsaponified fat

Glycerol in soap

Process Controls Beyond Pan Room:

Domestic Soap

Toilet Soap

Other Soaps

Soap Chips

Soap Noodles

Soap Flakes

Soap Powder for Laundries

Shaving Cream

Soft Soap

Medicated Soap

Shaving Soap

Toilet Soap of Inferior Quality Process Toilet Soap of Lux Type Process

Khas Soap

Amla Soap

Rose Soap

Sandal Soap

Musk Soap

Almond Soap

Transparent Soaps

Process

Medicated Soaps

Stock Soap

Formulae and Process Description for

Various Medicated Soaps

Process

Carbolic Soap

Process

Procedure

Neem Soap

Process

Camphor Soap

Procedure

Chaulmogra Soap

Procedure

Shaving Soaps and Creams

Shaving Soaps

Solid Shaving Preparation

Lather Shaving Cream

Liquid Soaps and Shampoos

Process of Manufacture

Liquid Shampoos

Egg Shampoos

Herbal Shampoos

Washing Soap (Various Types)

Precautions regarding Manufacture of Soap

Nerol Washing Soap

Process

Soap Removal Procedure

Formulae for Nerol Soap

7 Soap perfumery

Soap compounds

Brown Windsor

Carnation

Chypre

Cologne

Cyclamen

Fougere

Heliotrope

Hyacinth

Jasmin

Lavender Lilac

Lily

8 Management of Soap factories

Technical Efficiency

Introduction

Yield

Fatty acid yield

Glycerol yield

Active detergent yield

Over/under usage of materials

Packing loss/gain

Oil usage pattern

Scrap and downgrading losses

Productivity

Steam, water, electricity

Financial Summary

Pollution Control

Introduction

Source of Pollution

Oil spills

Chemical spills

Bleaching

Chemical treatment

Soap-making

Glycerine Recovery

Laundry Soaps

Toilet Soap

Synthetic Detergents

Sulphonation

Detergent powder manufacture

Boiler House

Coal spillages

Water treatment Section

Boiler Blow Down

Chimney exhaust

Boiler ash

Effluent Treatment

Space and location

Effluent characteristics

The requirements of treated effluent

Effluent treatment methodology

Treatment of Gaseous Effluents

Chemical bleaching

Saponification of oils

Toilet soap mixer

Refrigeration system

Oleum handling in the sulphonation plant

Oleum still furnace

Exhaust from spray drying tower and air lift

NSD bar mixer exhaust

Boiler exhaust

Analytical Support

Introduction

Oils

Chemicals

Packaging Materials

In-process Materials

Finished Products

Microbiological Controls

Analytical Equipments

General Comments

Quality Control

Introduction

Organisation

Facilities

Specifications

Chemicals

Packaging materials

Finished Product

Manufacturing Method

Fat Charge

Chemicals for soap-making

Sampling

Sampling of Raw Materials

Packing materials

Finished Products

Vendor education and rating

Process audit

Reporting

Micro-biological Controls

Bureau of Indian Standards Specifications

Quality Assurance

Introduction

Conventional Approach to Quality

Recommended Approach to Quality

Implementation of Quality Assurance

Quality Control

Quality Audit

Summary

Total Quality Management (TQM)

ISO 9000 Series Standards

Common Quality Problems of Soaps

Introduction

Laundry Soaps

Lather

Cracking

Detergency

Toilet Soaps

Base odour

Rancidity

Discoloration of soap

Cracking

Blisters

Sandiness

Mushiness

Wear

Hardness

Lather

Efflorescence

Storage and Product Assessment Tests

Storage

Product Assessment

Assessment in laundry soaps

Detergency

Lather

Perfume Impact

Wear

Cracking

Assessment of toilet soaps

Feel of soap in use

Mush

Common Quality Problems of Detergents

Detergent Powder

Solubility

Skin irritation

Poor lather/detergency

Detergent Cake

Sogginess

Roughness

Whitish deposit

Poor colour

Poor lather and detergency

Stain Removal

Introduction

Type of stains

Removal of Stains

Lime soap

Protein stains

Iron compounds

Stains due to dyes

Mildew stains

Physical methods of stain removal

Assessment of stain removal

9 Analytical Methods

Determination of Soap Composition

For Nature of Fatty acids in soap

For Anhydrous soap and total alkali content

Procedure

Isolation of Fatty Acids and Rosin Acid

From Soap

Acid Value

Sponification Value

The Saponification

lodine Value

Wijs Solution (Iodine monochloride solution)

Determination

Titer Test

Procedure

Rosin Value

Procedure

Determination of Total Anhydrous Soap and

Combined Alkali Content

Procedure

Unsaponified and Unsaponifiable Matter

Determination

Testing of Fatty Oils used for Soap

Moisture and Volatile Matter

Insoluble Impurities

Soluble Mineral Matter

Determination of Total Fatty Acids of soap

stock and acidulated soap stock

Acid value

Ester value

Determination of rancidity

Rosin Test

Colour Test

Bleach Test

Smoke Point

Flash Point

Turbidity Point

Cloud Point

10 Plant and Machinery

Four Blades Chipping Machine

Other Chipping Machines

Packing Machine

Spray Drier for making Detergent Powder

Portal Stirrer (Mechanical Agitator)

High Speed Dissolver

Planetry Mixer

Centrifuae

Emulsifier

Edge Runners

Ball and Pebble Mills

Automatic Liquid Filling and Weighing Machine

Automatic Paste Filling and Crimping Machine

Automatic Power Filling Machine

Marking and Printing Machine

Marking and Printing Machine

Bottle Washing Machine

Ribbon Blender

Batch Mixer

Plodders

Cutters

Soap Press

- 11 Addresses of Raw Material Suppliers
- 12 Photographs of Plant & Machinery with Supplier's Contact Details

About NIIR

NIIR PROJECT CONSULTANCY SERVICES (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

Our various services are: Detailed Project Report, Business Plan for Manufacturing Plant, Start-up Ideas, Business Ideas for Entrepreneurs, Start up Business Opportunities, entrepreneurship projects, Successful Business Plan, Industry Trends, Market Research, Manufacturing Process, Machinery, Raw Materials, project report, Cost and Revenue, Pre-feasibility study for Profitable Manufacturing Business, Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Business Opportunities, Investment Opportunities for Most Profitable Business in India, Manufacturing Business Ideas, Preparation of Project Profile, Pre-Investment and Pre-Feasibility Study, Market Research Study, Preparation of Techno-Economic Feasibility Report, Identification and Section of Plant, Process, Equipment, General Guidance, Startup Help, Technical and Commercial Counseling for setting up new industrial project and Most Profitable Small Scale Business.

NPCS also publishes varies process technology, technical, reference, self employment and startup books, directory, business and industry database, bankable detailed project report, market research report on various industries, small scale industry and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by professionals including project engineers, information services bureau, consultants and project consultancy firms as one of the input in their research.

Our Detailed Project report aims at providing all the critical data required by any entrepreneur vying to venture into Project. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line.

NIIR PROJECT CONSULTANCY SERVICES, 106-E, Kamla Nagar, New Delhi-110007, India.

Email: npcs.india@gmail.com Website: NIIR.org

Sat, 17 May 2025 07:27:21 +0000