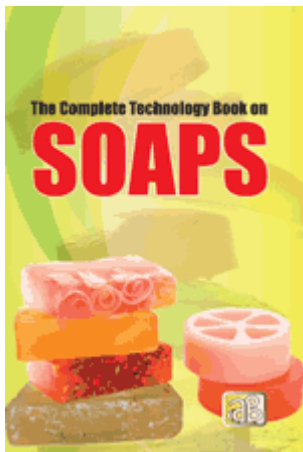


The Complete Technology Book on Soaps (2nd Revised Edition)



Author: NIIR Board of Consultants & Engineers

Format: Paperback

ISBN: 9788178331676

Code: NI110

Pages: 496

Price: Rs. 1,425.00 **US\$** 150.00

Publisher: Asia Pacific Business Press Inc.

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.

Contents

1. 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 Aids

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 brighteners
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

6 Various Formulations of Soaps

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
Saponification Value
The Saponification
Iodine 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
Planetary Mixer
Centrifuge
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 various 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.

NIIR PROJECT CONSULTANCY SERVICES , 106-E, Kamla Nagar, New Delhi-110007, India. **Email:** npcs.india@gmail.com **Website:** NIIR.org

Thu, 21 Sep 2017 14:52:24 +0530