AN ISO 9001 : 2015 CERTIFIED COMPANY

Herbal Soaps & Detergents Handbook

FREE SAMPLE: contents and introduction of the 536-page book
Price: Rs 1,275 | US$ 33.95

Order the full book >

AN ISO 9001 : 2015 CERTIFIED COMPANY

Author: H. Panda
Format: paperback
Code: NI53
Pages: 536
Price: Rs 1,275 | US$ 33.95
Publisher: NIIR PROJECT CONSULTANCY SERVICES
Shipping: 5 days

About the Book

The use of herbs for medicinal and cosmetic purpose goes back to the ancient times. The emphasis at the present hour has been laid on the spectacular growth of the herbal and ayurvedic products. The demand in past is found to have increased with increase in number of middle class population. People are now a days very much aware of the ingredients in cosmetic products, the benefits of plant products and the harmful effects of chemical ingredients. The presence of artificial and chemical ingredients in cosmetic products has made people to rethink about suitable alternatives to suit their personnel care regime. The herbal products have finally made their appearance in packaged form in the domestic markets, as cosmetics and personal care preparation such as soaps, shampoos, detergent bars, liquid soaps, liquid detergents, etc. These products play a vital role in our sense of well being and quality of life. The herbal soaps and detergents directly influence our emotions and can trigger moods. These creations not only protect the skin from harmful sun radiations but also leave behind a pleasant fragrance. Due to the increasing awareness and importance of cleanliness and healthiness, the use of herbal products is also increasing. Future demand for herbal products depends upon the per capita rate of consumption and segment of population using these products.
This handbook provides detailed information on the manufacturing process of herbal soaps and detergents. This book contains numerous formulae, manufacturing process of different type of soaps and detergents which are used in day to day life. The book is an unique compilation and will be very helpful to all its readers, new entrepreneurs, professionals, beauty care product manufacturers, existing units, technical institutions, etc.

Contents

CONTENT

Soaps and Detergents
Soaps
Synthetic Detergents
Physical Properties of Soap
Viscosity
Specific heat
Latent heat

Density of soap
66% Rule
Salt distribution between curd and lye
Glycerol distribution between curd and lye
Rate of drying of soap
Uses

Raw Materials
Classification of Fats/Oils
Fatty Oils are Further Classified as
Colour
Availability of oils for Soapmaking
Saponification Value
Iodine Value
Free fatty acids
Titre
Fatty acids containing—OH and —CO
groups, hydroxy and keto-stearic acids
Characteristics of individual Oils
Rice bran oil
Sal
Castor oil
Coconut oil
Linseed oil
Mowrah
Kusum oil
Neem oil
Acid oils
Karanja Oil
Palm Oil
Plam kernel oil
Tallow
Rosin
Other indigenous oils
Abbreviations of Fatty Acids
Fatty Acid Isomers
Pre-Treatment and Upgradation of oils and fats
Introduction
Techniques for Upgrading Oils
De-gumming
Earth bleaching
Air bleaching
Chemical bleaching
Hydrogen peroxide
Benzoyl peroxide
Chlorine
Sodium chlorite or chlorate
Hydrogenation
De-odorisation
Formulation of oil Blends for Soaps
Introduction

Choice of oils and fats
Iodine value, titre and fatty acid composition
Facilities for upgrading oils
Toilet Soaps
FA Composition of Toilet Soap
Typical Oils Blends for Toilet Soap (Compositions %)
Non Fatty Raw Materials for Soap
The Alkalis
Soap Builders
Filler
Stabilizers, Antioxidants
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
For a batch of 100 kg. soap colour required is
Full-boiled/Semi-boiled/cold-made Soaps
The oil soluble colours recommended are
Soap Bases and Liquid Soaps
Popular shades and the colours used to obtain them are
Washing/Laundry Soaps
Medicated Soaps
Perfumes
(Comprehensive Details)
Essential Oils
Isolates
Synthetic Chemicals
Fixatives (Listed in Table 4)
Important Essentials, Isolates, Synthetic Odourous
Chemicals and Fixatives
Isolates
Synthetic Odourous Chemicals
Fixatives

Raw Materials : Herbal Products
Acacia arabica
A. indica Benth
Parts Used : Bark, gum, leaves, seeds, pods.
Acalypha Indica
(N.O. - Euphorbiaceae)
ANDROPOGON MURICATUS. Retz. or A. Squarrosus
Angelica (Angelica archangelica)
Anise (Pimpinella anisum)
Associated Oil

AZADIRACHTA INDICA
Basil (Ocimum basilicum)
BALSAMODENDRON MUKUL, HOOK. or B. agollocha
Parts Used - Gum
BALSAMODENDRON MYRRHA
(N.O. Burseraceae)
Parts Used : Gum from the bark of the tree
Bay (Laurus nobilis)
Associated Oils
Benzoin (Styrax benzoin)
Associated Oils
Bergamot (Citrus bergamia)
Birch (Betula lenta)
Associated Oils
Calendula (Calendula Officinalis)
Associated Oil
Caraway (Carum carvi)
Cardamom (Elettaria cardamomum)
CITRUS MEDICA, Linm
(N.O.—Rutaceae)
Carrot Seed (Daucus carota)
Caulophyllum Inophyllum
Cedarwood (Cedrus species)
Cinnamon (Cinnamomum zeylanicum)
Associated Oils
Clary Sage (Salvia sclarea)
Associated Oils
Celery (Apium graveolens)
Chamomile, German
(Matricaria recutita, formerly M. chamomilla)
Associated Oils
Coriander (Coriandrum sativum)
Curculigo orchioides Gaertn
(N.O.—Amaryllidaceae)
Ayurvedic Properties
CURCUMA LONGA, Linn
(N.O.—Scitaminaceae)
Associated Oil
Cypress (Cupressus sempervirens)
Eucalyptus (Eucalyptus globulus)
Associated Oils
Fennel (Foeniculum vulgare)
Associated Oil
Fir (Abies alba and other species)
Associated Oils
Associated Oils
FICUS RELIGIOSA LINN
(N.O. Moraceae)
Parts Used : Bark, Fruit, Root
Ayurvedic Properties
Galbanum (Ferula galbaniflua)

Associated Oils
Geranium (Pelargonium graveolens)
Associated Oil
Ginger (Zingiber officinale)
Associated Oil
Helichrysum (Helichrysum angustifolium)
Hyssop (Hyssopus officinalis)
Associated Oil
Inula, Sweet (Inula graveolens, or I. odorata)
Associated Oil
HEMIDESMUS INDICUS, R. BR.,
Asclepias pseudosarsa, var. latifolia
(N.O. Asclepiadaceae)
Jasmine
(Jasminum officinale and J. grandiflorum)
Associated Oil
Juniper (Juniperus communis)
Associated Oils
Labdanum (Cistus labdaniferus)
Associated Oils
Lavender (Lavandula angustifolia, previously L.
vera and L. Officinale)
Associated Oils
Lemon (Citrus limon)
Associated Oil
Associated Oils
Lemongrass Cochin (C. flexuosus)
Grown in India primarily for isolation of citral
Lovage (Levisticum officinale)
Marjoram
(Origanum marjorana or Marjorana hortensis)
Associated Oils
Melissa (Melissa Officinalis)
Associated Oil
Mimosa (Acacia decurrens var. dealbata)
Associated Oil
Myrrh (Commiphora myrrha)
Associated Oils
Myrtle (Myrtus communis)
Oakmoss (Evernia prunastri)
Associated Oil
Orange (Citrus sinensis)
Associated Oils
Orange Blossom (Neroli)
(Citrus aurantium var. amara)
Associated Oils
Patchouli (Pogostemon cablin)
Pepper, Black (Piper nigrum)
Associated Oils
Cubeb (Piper cubeba)—A litsea substitute
Peppermint (Mentha piperita)

Associated Oils
PSORALEA CORYLIFOLIA LINN.
(N.O. Papilionaceae, Fabaceae)
Parts Used : Roots, leaves, fruits, seeds
Ayurvedic Properties
Ravensare (Ravensara aromatica)
Rose (Rosa damascena, R. gallica, and others)
Associated Oils
Rosemary (Rosmarinus officinalis)
Associated Oils
Rosewood (Aniba rosaeodora)
Sage (Salvia officinalis)
Sandalwood (Santalum album)
Associated Oil
Spikenard (Nardostachys jatamansi)
Associated Oils
SMILAX CHINA
(N.O. - Liiiaceae)
TERMINALIA CHEBULA RETZ.
(N.O. Combretaceae)
Parts Used : Fruit
Ayurvedic Properties
TERMINALIA BELERICA ROXB
(N.O. Combretaceae)
Parts Used : Fruit (unripe and ripe)
Ayurvedic Properties
Healing Power and Curative Properties
Cough
Stomach Disorders
Sore Throat
Chronic Constipation
Intestinal Worms
Eye Disorders
Other Diseases
Tea Tree (Melaleuca alternifolia)
Associated Oils
Thyme (Thymus vulgaris)
Associated Oils
Thymus vulgaris has many chemotypes
Tuberose (Polianthes tuberosa)
Vanilla (Vanilla planifolia)
Vetiver (Vetiveria zizanoides)
Violet (Viola odorata)
Associated Oil
Yarrow (Achillea millefolium)
Ylang-Ylang (Canaga odorata)
Associated Oils

Preparation and Properties of Surface Active Agents from Castor Oil
Manufacture of Turkey Red Oil
Preparation of Esters by Alcoholysis

Sulphation of Esters
Hexane Extraction of the Sulphated Product
Typical Experimental Details
Major raw materials
Method
Products

Cottonseed Oil for Soapstock
Genesis of Investigation
Novel Features and Method of Utilisation of the Process
Refining of three oils of different types
Refining of a highly colour-fixed sample of
solvent extracted cottonseed oil
Likely scope of its application
The stage to which the laboratory
investigations have been conducted
The scale and duration of pilot-plant working
Availability of Raw Materials
Estimates of the cost of utilisation of the method
Capital outlay required
Flow Sheet
Points requiring specific emphasis

Development and Application of New Herbal Functional Surfactants
Introduction
New Trend of Surfactants
Narrow distribution ethoxylate ('Peaked' ethoxylates)
and its derivatives
Biodegradable surfactants
Surfactants arising from natural materials
Reactive Surfactants
Effect of TREM LF-40 concentration (2.03 mM initiator)
on the particle size of poly (vinyl acetate) latex particles

Herbal based Soaps & Shampoos
Formulations for Herbal Washing Soaps
Hard Fats are
Soft Fats are
Some Suggested Formulations for Washing Soaps
Good Quality
Cheaper Quality
A Typical Batch for Herbal Based Toilet Soap
Oriental type
Perfume mixture as formulated below
Perfumes as formulated below
Perfume Mixtur
Formulation of fancy Soap Type
Perfume Mixture
Himalayan Boquet Type
Perfume Mixture
Rose Soap Type

Perfume Mixture
Transparent Soap – No. 1.
(glycerine soap of market)
A suggested formulation
Transparent Soap-No.2
(by special milling method)
Mottled Soap
Carboli Acid Soap
Suggested Formulation
Procedure
Medicated Soaps
Castile Soap
CASTILE SOAP BY BOILING PROCESS
Process Description
Some Suggested Formulations for Castile Soap
Translucent Coconut Oil Soap
Some Suggested Formulations for Disinfectant
Liquid Antiseptic Soap
Deodorant Soaps
Combination in Soap No. 1.
Combination in Soap No. 2
VARIOUS INDUSTRIAL SOAPS
Textile Soaps
Some of the uses are
Textile Bleaching-Washing Soap Powder
Laundry Soap Formulations
More Formulations
Laundry Washing Aids
More Laundry Wash Mixtures
(Soap and Sodium Metasilicate Solution)
A Fabric Cleaning Compound
Cotton Scouring Soap
Dry Cleaner's Soap
A sugested Formulation of Dry Cleaner's Soap
WATER SOFTNER
(Chemicals which may be used for prevention of soap curds)
JELLY SOAP/ SOFT SOAP
AUTOMOBILE SOAP
WIRE DRAWING SOAP
SCOURING SOAP
PREPARATION OF WASHING SOAP POWDER
Simplified Method
SHAVING SOAPS
Procedure
A Typical Charge
Shaving Cream
A Typical Charge
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
Some suggested Formulations
For Office use
For Workshop use
Soap Bubble Liquid
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 HERBAL SURFACTANTS
GENERAL FORMULATIONS
Liquid Cream Shampoos and Paste Cream
A General Formulation
Foamless oil Shampoos
A Formulation
Baby Shampoos
Medicated Dandruff Sampoos
Other miscellaneous shampoos
Aerosol Shampoos (Pressure Dispersed)
HERBAL TOILET SOAPS
To Prevent Pimples
To Fight Dandruff
To Kill Germs
To Present Prickly Heat
HERBAL SHAMPOOS
Lime Shampoo
Lavender Shampoo
Methi-Shikakai Shampoo
Sandalwood Shampoo
Neem Shampoo
Hair Rinses
Apple Hair Rinse

Barley Hair Rinse
Chamomile Hair Rinse
Rosemary-Chamomile Hair Rinse
Rosemary Hair Rinse
Hair Setting Preparations for all Hair Types
Bay-Rum Hair Setting Preparation
Clove Hair Setting Preparation
Gum Tragacanth Hair Setting Preparation
Lime Hair Setting Preparation
HAIR CONDITIONERS FOR ALL HAIR TYPES
Avocado Hair Conditioner
Sunflower Hair Conditioner
Wheat Hair Conditioner
Shampooing
ANTI-DANDRUFF PREPARATIONS FOR ALL HAIR TYPES
Anti Dandruff Lemon Preparation
Anti-Dandruff Egg Preparation
Anti-Dandruff Vinegar Preparation
Anti-Dandruff Sesame Preparation
Anti-Dandruff Sesame Preparation
Anti-Dandruff Rosemary Preparation

Technology of Manufacturing Herbal Synthetic Detergents
Performance Criteria
Washing habits
Quality of water
Soiling
White vs. coloured clothes
Manufacturing facilities
Safety and pleasant 'in-use' qualities
Colour, odour and flow characteristics
Shelf life
Pricing
Formulation Requirements
Alkalinity
Good building and active matter
Approach to Product Formulation
Non Soapy Detergent Powder Formulations
Production Procedure
FORMULATIONS OF SYNTHETIC DETERGENT POWDERS
A TYPICAL BATCH OF FINISHED PRODUCT
(A good quality household detergent granules)
For 1000 kg. yield
Surfactants
Builders
Additives
A TYPICAL BATCH USING ACID SLURRY OF
UNSEPARATED SPENT ACID
For 1000 kg. of finished detergent
Surfactant
Builders

Additives
Detergent Powder Prepared Without
Using Spray Dryer (High Bulk Density)
A TYPICAL FORMULATION OF HOUSEHOLD
DETERGENT POWDER
For 1000 kg. finished product
Procedure
Foam Regulation
Typical Suds Regulated Surfactant Compounds
General Formulations for Industrial Detergent Powder
Woollen Piece Goods Scouring Preparation
Formulation with anionic and soap as active surfactants
Light Duty
Machine Dish Washing Powder
Scouring Powders Including Kitchen Cleaners
Abrasives
Surfactants
Other Chemicals
Soap Powder
Manufacturing Process
Floor Washing Compound
Heavy-duty Household Washing Powder
White Household Heavy-duty washing Powder
Spray-dried Heavy-duty Household Hand-washing Powder
Household Spray-dried Powder
General-purpose Spray-dried Powder
General Purpose Powder
High-foam Food/Dairy Detergent Cleaner
Heavy-duty Detergent Powder
Light-duty Detergent Powder
General Formula for Detergent Powders
Spray-dried Enzyme Detergent
Medium-foam Detergent Powder
Glass Rinsing Sanitizer
Industrial Sanitary Cleaner
General Cleaning Compound
Dishwashing Compound
Heavy-duty Detergent
Household Laundry Bleach
Low Sudsing Detergent Powder
Hand Laundering Powder
Plastic-ware Destaining Compounds
Magic Dip Bleach
Purex Bleach
All-purpose Metal Cleaning Compound
Standards
Scheme for the Manufacture of Detergent
powder on small scale
Land and Building
Projecting Cost
Plant and Machinery

Labour & Staff
Monthly Requirements of Raw Materials,
Utilities and Factory Overheads
Working Capital (3 months basis)
Total Capital Investment
Own Capital Requirements
Factory cost of Production (Monthly Basis)
Profitability

Detergent Bars
Introduction
Requirements of a Detergent Bar
NSD Bar Vs. Soap
Components of Detergent Bars
Active detergent
Sodium tripolyphosphate
Talc
Starch
China clay
Calcite
Soda ash
Sodium sulphate
Sodium silicate
Coconut mono ethanolamide
Soapstock
Dicalcium phosphate
Rosin
Titanium dioxide
Colour
Fluorescer
Perfume
Water
Processing of NSD Bars
Handling of Raw Materials
Processing
Process Control
Some Typical Formulations of Detergent Bar
Formulations for detergent bar manufacture
Plant & Machinery for Small Scale Detergent
Cake Manufacture
Kneader
Milling Machine
Plodder
Bar Cutter or Billet Cutter
Embossing or Stamping Machine
Pulverizer
Formulations of Detergent Cakes
Soap-Surfactant Combination
Detergent Bar
Low-soap Syndet Bar
Soap-Synthetic All-purpose Bar

All Syndet Bar
Alkyl-Sulfate Syndet Bar
Proctor & Gamble's Soap Syndet Formulation
Proctor and Gabmle's Syndet Laundry Bar
SCHEME FOR THE MANUFACTURE OF
DETERGENT CAKES ON SMALL SCALE
Capacity : 1 tonne per day per shift basis
Land and Building
Projecting Cost
Plant and Machinery
Monthly requirements of Raw Materials, Utilities and Factory
Overheads
Labour and Staff
Working Capital requirements (3 months basis)
Total Capital Investment
Own Capital Requirements
Cost of Production (Monthly Basis)
Profitability

Herbal Liquid and Paste Detergents
Requisites of surfactants for formulating liquid detergents
Surfactants most commonly used
Consumption of Surfactants in Detergents (in kilotons)*
Builders
Viscosity Controlers
Other Ingredients
HOUSEHOLD LIQUID DETERGENTS FOR LAUNDERING
Heavy Duty
Manufacture of Paste Detergents
FORMULATIONS OF LIQUID AND PASTE DETERGENTS
Heavy Duty liquid Detergents
A few formulations are listed in Table 2
Light Duty Detergents
Liquid Shampoo
Liquid Shampoo Formulation
TYPICAL FORMULATIONS
Opaque viscous solution
Procedure
Light Duty : (for silk, wool etc.)
TYPICAL FORMULATIONS
Procedure
Shampoos
Rug Cleaning Liquid Detergent Formulations
A Recommended Formulation
Heavy-duty Liquid Detergents
Heavy-duty Liquid Detergent with 'Controlled
Opaque Lotion-type Light-duty Liquid Detergent
Light-duty Household Liquid Detergent
40% Detergent Paste
20 % Detergent Paste
Metal Degreasing Liquid Detergent

General-purpose Solvent-based Detergent
Textile Scouring Paste
Textile Degumming Detergent Paste
Low Foaming Liquid Detergents
Other Formulations of Synthetic Liquid Detergents
Light-duty Liquid Detergent
Light-duty Liquid Detergent for Dishwashing
Household Liquid Detergent Cleaner
Light-duty Clear Detergent Liquids
Light-duty Liquid Detergent Lotion
Heavy-duty Liquid Detergent
Scheme for the Manufacture of Liquid
Detergents on Small Scale
Land and Building
Projecting Cost
Plant and Machinery
Labour and Staff
Monthly Requirements of Raw Materials,
Utilities & Factory Overheads
Working Capital Requirements (3 months basis)
Total Capital Investment
Own Capital Requirements
Cost of Production (Monthly basis)
Profitability

Determination of Physical, Surface Active and Performance Characteristics of Surfactants
Physical Characteristics
Density of Powdered Detergents
Apparent Bulk Density
Apparent density, g/ml = 40/V
Cup Density
Particle Size of Powdered Detergents
Hand Sieving
Machine Sieving
pH and Alkalinity
Free Alkalinity
Cloud Point of Non-ionic Detergents
Viscosity
Surface-Active Properties
Ring Method
Experimental Procedure
Determination of Surface Tension
Determination of Interfacial Tension
Calculation of Surface Tension
Calculation of Interfacial Tension
Correction Factor 'F' for the Ring Method Factor 'F' for
PERFORMANCE CHARACTERISTICS
Dishwashing Tests
Laundry Evaluation
Split Item Tests
Bundle Test

Foam Tests
Dynamic Foam Test
Pour Foam Test
Wetting Test
Canvas Disc Test
Skein Test

Analysis of Surfactants
Separation of Surfactants
IDENTIFICATION OF COMPONENTS
Anionics
Cationics
Non-ionics
DETERMINATION OF SURFACTANTS
Total Organic Active Ingredient
Procedure
Correction for Sodium Chloride Content
ANIONIC SURFACTANTS
Preliminary Estimate of Mol. Wt.
Titration with Cationic Surfactants
Preparation and Standardization of Titrant
Titration of Sample
Amine Complexation Method
Determination of Alkylaryl Sulfonates
Determination of Alkylaryl Sulfonates in the
Presence of Short Alkyl Chain Sulfonates
Determination of Fatty Alcohol Sulfates
CATIONIC SURFACTANTS
Determination of Amine Oxides
Non-Ionic Surfactants
Column Techniques
Batch Technique

Analysis of Fats and Fatty Oils
Methods of Analysis
DETERMINATION OF PROPERTIES
Physical Characteristics
Procedure
Procedure
Chemical Characteristics
Procedures
COMPOSITION ANALYSIS
Gas Chromatography
Procedures
Spectroscopic Methods
Procedure
OTHER TESTS
Procedure

Analysis of Detergents
Methods of Analysis

Sampling
Separation
Procedure
IDENTIFICATION OF COMPONENTS
Procedures
Infrared Absorption Bands of Typical Commercial Detergents
Typical Analysis of a Linear Alkylate Sample
Procedure
DETERMINATION OF SURFACTANTS
Total Organic Active Ingredients
Procedure
Anionic Detergents
Procedure
Procedure
Cationic Detergents
Procedure
Nonionic Detergents
Procedure
DETERMINATION OF COMPONENTS
OTHER THAN SURFACTANTS
Abrasives
Procedure
Ammonia
Procedure
Carbonates
Procedure
Carboxymethylecellulose
Chlorides and Available Chlorine
Procedures
Enzymes
Procedure
Ethanol and Isopropyl Alcohol
Specific Gravity of Ethanol-Water Solutions at
Varying Concentrations
Specifie Gravity of Isopropyl Alcoho-Water
Solutions at Varying Concentrations
Procedure
Fatty Acids
Procedure
Glycerine
Hydrotropes
Procedure
Metallic Impurities
Procedure
Neutral Oil (Free Oil) and Free Fatty Alcohol
Procedure
Perborates
Procedure
Phosphates
Procedure
Silicates

Procedure
Solids
Procedure
Steam-Distillable Matter
Procedure
Sulfates
Procedure
Water
Procedure
Performance Tests
Procedure
Analysis of Soaps
Methods of Analysis
SAMPLING
Procedures
SEPARATION
Procedures
IDENTIFICATION
Procedures
DETERMINATION OF SOAP COMPOSITION
Procedures
DETERMINATION OF INORGANIC FILLERS AND
SOAP BUILDERS
Procedures
DETERMINATION OF OTHER ADDITIVES
Procedure
Munson and Walker Sugar Equivalents
Procedure
DETERMINATION OF IMPURITIES
Procedure
OTHER QUALITY CONTROL TESTS
ANALYSIS OF SOAPS CONTAINING SYNTHETIC DETERGENTS
ANALYSIS OF METALLIC SOAPS
Procedure

Beauty with Fruits and Vegetables
Apple
Apricot (Khubani)
Banana
Barley
Carrot
Castor Oil
Clove
Cucumber
Dhania
Egg
Honey
Lavender
Lemon
Orange
Palak

Peach
Potato
Pudina
Rose
Sage
Salt
Saunf
Tea
Thyme
Tomato
Yoghurt

Sulfonated Oils
Historical Background
Chemistry of Sulfation and Sulfonation
Applications of Sulfonated Oils
MANUFACTURE OF SULFONATED OILS
Sulfation
Sulfonation
SULFATION OF INDIVIDUAL OILS
Characteristics and Analysis of Sulfonated/Sulfated Oils

Get the full book

This sample shows only the contents and introduction. The full book has every chapter.
Price: Rs 1,275 | US$ 33.95
Delivery: Shipped within 5 working days of payment
Order online: niir.org/books/herbal-soaps-detergents-handbook/ **WhatsApp:** +91 9097-075-054

Planning a unit? NPCS project reports:

- Rice Bran Oil project report
- Water Treatment Chemicals project report
- Benzoyl Peroxide project report
- Bleaching Earth project report

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, Market Research, Manufacturing Process, Machinery, Raw Materials, Project Feasibility, Investment Opportunities, Technical Consultancy and Startup Help.

NPCS also publishes process technology books, technical books, startup books, directory, business database, detailed project reports and market research reports.

Our Detailed Project Report aims at providing all the critical data required by entrepreneurs for starting new business ventures.

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

Email: npcs.india@gmail.com **Website:** https://www.niir.org/

AN ISO 9001 : 2015 CERTIFIED COMPANY



Scan to order the full book on niir.org