Handbook on Manufacture of Acetophenone, Alcohols, Alletrhin, Anthracene, Barium Potassium Chromate Pigment, Calcium Cyanamide, Carboxymethylcellulose, Carotene, Chlorophyll, Chemicals from Acetaldehyde, Fats, Milk, Oranges, Wood,......

Author: NIIR Board of Consultants & Engineers

Format: Paperback **ISBN**: 9788178331782

Code: NI309 Pages: 550

Price: Rs. 1,100.00 US\$ 29.73

Publisher: Asia Pacific Business Press Inc.

Usually ships within 5 days

Handbook on Manufacture of Acetophenone, Alcohols, Alletrhin, Anthracene, Barium Potassium Chromate Pigment, Calcium Cyanamide, Carboxymethylcellulose, Carotene, Chlorophyll, Chemicals from Acetaldehyde, Fats, Milk, Oranges, Wood, Manufacture of Dye Intermediates and Dyes, Fine Chemicals, Formaldehyde, Granulated Fertilizers, Granulated Triple Superphosphate and Hydroquinone (Also Known As Modern Technology of Industrial Chemicals)

Industrial chemicals are essential components of modern societies because they contribute in numerous ways to establish and/or preserve an elevated standard of living in countries at all stages of development. Chemicals play an important part in different fields such as healthcare, food production and telecommunications. Under certain conditions, the large scale production and use of certain chemicals may result in the degradation of our environment and adverse impact to human health and wildlife. Acetophenone is the simplest aromatic ketone organic compound and it has a sweet taste and smell that resembles that of oranges. It is used for various purposes in the industry. Acetophenone is a colorless liquid with a sweet pungent taste. Alcohols are one of the most important molecules in organic chemistry. They can be prepared from many different types of compounds, and they can be converted into many different types of compounds. The allethrins are a pair of related synthetic compounds used in insecticides. They are synthetic pyrethroids, a synthetic form of a chemical found naturally in the chrysanthemum flower. Acetaldehyde is a key raw material in the production of a wide range of chemical products such as paint binders in alkyd paints and as a plasticizer for plastics. Acetaldehyde is also used a base in the manufacture of acetic acid, another platform chemical with many applications. Acetaldehyde is also used as an aromatic agent and is found naturally in fruits and fruit juices.

Formaldehyde, also known as methanal, is a colorless and flammable gas that has a pungent smell and is soluble in water. Formaldehyde is used in Circuit Board Manufacture, Laboratory Chemicals, Paper Coatings, Photochemicals, Printed Circuit Board Manufacturing and Rubber Manufacture. Hydroquinone is a Melanin Synthesis Inhibitor. Hydroquinone is mainly used in photosensitive materials, rubber, dyes, pharmaceutical industry.

The Indian chemical industry is an integral component of Indian economy, contributing around 6.7 per cent of the Indian GDP. With Asia's growing contribution to the global chemical industry, India emerges as one of the focus destinations for chemical companies worldwide.

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. Acetophenone

Compound Is Used Extensively In The Preparation

Of Perfumes

Three Parts Of Molecule May Be Involved In

Chemical Reactions

Carbide's Acetophenone Is Intermediate In

Continuous Styrene Process

Oxidation Step Yields Mixture Of Acetophenone

And Phenylmethylcarbinol

Caustic Neutralizes About 98% Of Acid Formed During

Oxidation

Ethylbenzene Is Recycled; Acetophenone And Phenylmethylcarbinol Mixture Is Refined

Purification Includes Dehydrogenation And Further

Distillation

Freezing Point Determinations Are Important In Process

Control

Adequate Provision Are Made To Ensure Safety Of

Workers

2. Alcohols By Sodium Reduction

High Pressure Process

Sodium Reduction Process

Description Of Process

Chemical Control

Instrumentation And Control

Safety Provisions

Hot Oil-Circulating System

Materials Of Construction

3. Alletrhin

Efforts Made To Develop Synthetic Insecticide Having Same Desirable Properties In Pyrethrum

Allethrin, An Oily Liquid, Consists Of A Mixture Of Eight Optically Active Isomers

First Series Of Chemical Reactions Involves Synthesis Of Allethrolone

Atmospheric Distillation Employed In Purification Of Crude Allyl Acetone

Ethyl-3-Oxo-6-Heptenoate Is Saponified At Room Temperature With Potassium Hydroxide

Vacuum Operation Minimizes The Thermal Breakdown Of Allethrolone

Preparation Of Chrysanthemum Acid Chloride Is Second Major Phase Of Allethrin Synthesis

Nickel Catalyst Aids Hydrogenation Of The 2,5-Dimethylhexyne-2,5-Diol

Ethyl Glycine Hydrochloride Is An Intermediate In The Preparation Of The Ethyl Diazoacetate

Aqueous Phase Extraction With Ether Recovers Ethyl Diazoacetate

Distillation Of Ethyl Chrysanthemumate Is Carried Out At 10-Mm Pressure

Reaction Of Chrysanthemum Acid Chloride And Allethrolone Produces The Final Product Either One Of Two Standard Methods May Be Used In Analysis Of Allethrin Future Market For Allethrin Depends On Developmental Programs Now In Progress

4. Amyl Compounds From Pentane

Sharples History

Fundamental Chemistry

Production Of Amyl Compounds

Corrosion

Safety

Control

Economics

Future Prospects

5. Anthracene

Introduction

Properties

Uses And Applications

Industrial Prospects

Process Of Manufacture

Apparatus

Thermometer

Procedure

6. Barium Potassium Chromate Pigment

Manufacturing Procedure

Proposed Production Plant

Field Performance

Future Of Chromate Pigments

7. Calcium Cyanamide

History Of Calcium Cyanamide Process

Chemistry Of Calcium Cyanamide

Coke

Lime

Fluorspar

Briquetting

Calcium Carbide Production

Calcium Cyanamide Production

Calcium Cyanamide Milling

Auxiliary Equipment

Chemical Control

Safety Precautions

Present Markets

Future

8. Calcium Magnesium Aconitate

Srrl Pioneered Initial Laboratory Studies

Usda Operated First Pilot Plant At New Orleans

Godchaux Plant Processes B Molasses And Blackstrap Molasses

Aconitate Precipitation Includes Dilution, Liming And Crystallization

Solids Separation Is Key Step Of Process

Aconitate Is Dried By Gas Heated Conveyor Belts

There Are Still Unknown Factors In Aconitate Production

Potential Raw Material Supplies Are Practically Unlimited

9. Carboxymethylcellulose

Cmc Is Valuable As Thickener, Stabilizer, And Detergency Improver

Solubility Of Cmc Depends On Degree Of Substitution Of Hydroxyl Units

Dry Sodium Monochloroacetate React With Alkali Cellulose In German Batch Process

Continuous Process Uses Monochloroacetic Acid

Other Producers Manufacture Special-Purpose Cmc

Wyandottee Produces Technical Grade Cmc From Bleached Solfite Pulp

Processing Is Continuous In A Three-Zone Rotary Reactor

Pneumatic Atomizers Disperse Monochloro-Acetic Acid In Reactor

Complete Reaction Requires About 3 Hours

Flash Drying Yields Desirable Products

Performance Tests Check Product Quality

Versatility Of Cmc Assures Its Future

10. Carotene And Chlorophyll: Commercial Chromatographic Production

Preparation

Adsorption

Finishing

Production

Future Prospects

11. Chemical Explosives & Rocket Propellants

Introduction

Definition

Chemistry Of Combustion

Fig 1. The Fire Safety Triangle

Historical Development

Classification Of Explosives

Explosives Manufacturing

Tnt (2,4,6-Trinitrotoluene)

Rdx And Hmx

Hns (2,2'4,4',6,6'-Hexanitrostilbene)

Tatb (1,3,5-Triamino-2,4,6-Trinitrobenzene)

Ddnp (2-Diazo-4,6-Dinitrophenol)

Petn (Pentaerythritol Tetranitrate)

Ng (Nitroglycerin Or Glyercol Trinitrate)

Dynamite

Slurry And Emulsion Explosives

Rocket Propellants

Principles Of Rocket Propulsion

Types Of Propellants

Solid Propellants

Single And Double-Base Propellants

Composite Propellants

Propellant Use Criteria

Composite Propellant Manufacture

Liquid Propellants

Physical Properties Liquid Oxidizers Liquid Fuels Monopropellants Gelled Propellants

12. Chemicals From Acetaldehyde

Steps In Development Of Acetaldehyde Process

The Hoechst Plant

Outlook

Acetaldehyde To Acetic Acid

Acetic Acid Process

Acetaldehyde To Ethyl Acetate

Butyl Acetate

Methoxybutylacetate

13. Chemicals From Fats

Chemical Nature Of Fats And Fatty Acids

Chemistry Of Fat And Fatty Acid Processing

Developments By Armour

Processing Of Fatty Acids

Auxiliary Installations

Chemical Control

Products And Their Uses

14. Chemicals From Milk

Raw Material

Processing

Casein

Milk Protein Powder

Caseinates

Whey Proteins

Milk Sugar

Casein Hydrolyzates

Tyrosin Production

Packaging

Materials Of Construction

15. Chemicals From Oranges

Juice Products Require Top Grade Fruit

Three Types Of Extractors Remove The Juice

Frozen Concentrate Represents An Increasing Outlet For Orange Growers

Oil-Bearing Liquors Pressed From Orange Peel Yield Orange Oil

Meal And Molasses Are Produced From Peel Not Used In Pectin Production After Oil Extraction

Several Types Of Pectin May Be Hydrolyzed From Orange Peel 306

Citrus Peel Is Source Of Bioflavonoids Or "Vitamin P" Material 308

Proper Design Of Processing Plant And Equipment Limits Juice Spoilage And Product Contamination

Plant Waste Waters Operate Disposal Farm

Seasonal Nature Of Operations Is Important Factor In Citrus Processing

16. Chemicals From Wood

History Of Marathon Process

Chemistry Of Marathon's Lignosulfonates

Spent Liquor From 50,000 Tons Of Pulp

Fate Of Calcium Lignosulfonate (Organic Precipitate)

Vanillin Process Effluent

Vanillin Effluent A

Vanillin Effluent B

Salts Of Organic Acids

Operating Technology

17. Chloroquine Manufacture

Process Development

Plant Process

Product Handling

Control

18. Dye Application, Manufacture Of Dye Intermediates & Dye

Introduction

Textile Fibers

Natural Fibers

Regenerated Fibers

Synthetic Fibres

Dye Classification

Acid Dyes

Basic Or Cationic Dyes

Direct Dyes

Disperse Dyes

Reactive Dyes

Sulfur Dyes

Vat Dyes

Combinations

The Application Of Dyes

Fiber Preparation

Dye-Bath Preparation

Finishing

Dyeing Methods/Batch

Printing

Pigment Dyeing And Printing

Nontextile Uses Of Dyes

Dye Intermediates

Nitration

Reduction

The Manufacture Of Dyes

Nitro Dyes

Azo Dyes

Manufacturing Processes For Azo Dyes

Triphenylmethane Dyes

Xanthene Dyes

Anthraquinone And Related Dyes

Sulfur Dyes

Phthalocyanines

New Development In Dyes

19. Fine Chemicals From Coal

Chattanooga Plant Of Tennessee Products And Chemical Corporation

Benzoic Acid And Sodium Benzoate

Benzene Hexachloride

Toluene-Acid Recovery System

Utilities And Instrumentation

Future Prospects

20. Formaldehyde From Methanol

Manufacturing Processes

Commercial Processes Using Methanol

Other Processes

Methanol

Air Supply

Reaction

Catalyst

Absorption

Distillation

Start-Up

Instrumentation

Analytical Control

21. Granulated Fertilizers By Continuous Ammoniation

Chemistry Enters The Field

From Batch To Continuous Operation

Many Variables Affect Granulation

The Ball Starts Rolling

Gravimetric Feeders Control Solids

Ammoniation And Granulation In One Step

Design Changes Have Been Recommended

Technology Is Changing

22. Granulated Triple Superphosphate

Large Deposits Of Phosphate Rock In Florida

Chemistry Of The Process

Phosphoric Acid And Rock React

Waste Disposal

Phosphate Rock Reacts With Sulfuric Acid.

Utilities

Fume And Dust Control

Analytical And Quality Control

Maintenance And Repair

Materials And Labor Required

Typical Analyses Of Rock

Typical Product Analyses

Corrosion

23. Hydroquinone Manufacture

Preparation Of Quinone

Quinone Separation

Reduction To Hydroquinone
Purification Of Hydroquinone
Safety Precautions
Laboratory Tests
Uses Of Hydroquinone
Hydroquinone Derivatives And The Future

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

Sun, 24 Sep 2023 09:59:45 +0530