## **Fertilizers Manufacturing Handbook**

Author:- P. K. Chattopadhyay Format: paperback Code: NI336 Pages: 456 Price: Rs.2795US\$ 200 Publisher: NIIR PROJECT CONSULTANCY SERVICES Usually ships within 5 days

Fertilizers Manufacturing Handbook

(Ammonium Sulfate, Diammonium Phosphate (DAP), Urea - Ammonium Nitrate, Neem Coated Urea, N.P.K. Complex Fertilizers, Single Superphosphate (SSP), Triple Superphosphate, Zinc Sulfate Monohydrate, Magnesium Sulfate with Manufacturing Process, Machinery Equipment Details & Factory Layout)

India's economy is heavily reliant on agriculture. One of the greatest contributors to the Gross Domestic Product is agriculture, along with forestry, fishing, and other related industries (GDP). It goes without saying that the fertiliser industry is one that the Indian economy cannot do without given how significant the agricultural sector is.

The success of the agricultural sector in India is largely dependent on the fertilizer industry. The benchmark that the food industry in India has set is mainly due to the many technically competent fertilizer producing companies in the country. The combined output of Nitrogenous (N) and Phosphatic (P) Chemical fertilizers has increased from a modest level.

Fertilizer Market Size will grow at a CAGR of 2.6%. Fertilizers have played a key role in the success of India's green revolution and subsequent self-reliance in food-grain production. The increase in fertilizer consumption has contributed significantly to sustainable production of food grains in the country.

The NPK fertilizers market (feed-grade) is estimated at a CAGR of 4.1% these feed-grade fertilizers help animals attain faster growth and increase their weight by providing added nutrition to their meals.

The global diammonium hydrogen phosphate (DAP) driven by the product's rising usage in fertilizers to increase the crop yield. The compound has a high nutrient content which is required for crop nurture.

The global single superphosphate (SSP) market is expected to post a CAGR of close to 3%. Key factor driving the growth of the global single superphosphate (SSP) market is the increasing demand for phosphate fertilizers.

Triple Superphosphate Market is growing at a CAGR of 5.5%. Triple superphosphate typically contains 44–46% of diphosphorus pentoxide (P2O5) and are produced by reacting phosphoric acid with phosphate rocks.

The zinc sulfate market is expected to witness market growth at a rate of 7.50%. The global nitrogenous fertilizer market size growth rate (CAGR). The growth is attributed to the increasing popularity of agriculture on a commercial level across the world.

The global potash fertilizer market growth rate (CAGR) of 4.66%.

The Global Ammonium Phosphate Market is expected to grow at a CAGR of 3.56% mainly due

to robust demands from animal feed and fertilizers industries. The market has witnessed a significant boost from the enabling policy framework regarding yield enhancement of agriproduce.

Successful business ideas in fertilizers manufacturing is profitable and very viable. Thus, it is a good idea to venture into it by starting your own business. Read this book on for more information about fertilizers industry in detail. It will help you understand how to get started with your own fertilizers manufacturing business. Fertilizers manufacturing is a great way to make money because of its high demand in today's market place.

The book contains detailed information about fertilizers manufacturing in which all aspects are covered. The book is of immense use to professionals in Fertilizers Manufacturing Handbook for quick revision as well as in day-to-day life where people would like to know about fertilizers. This book also serves as an excellent guide for those who want to venture into fertilizers manufacturing industry or have been associated with it.

A complete guide to the Fertilizers Manufacturing : Ammonium Sulfate, Diammonium Phosphate (DAP), Urea - Ammonium Nitrate, Neem Coated Urea, N.P.K. Complex Fertilizers, Single Superphosphate (SSP), Triple Superphosphate, Zinc Sulfate Monohydrate, Magnesium Sulfate. It's a veritable feast of how-to information, from concept through equipment acquisition.

Table of Contents

- 1. INTRODUCTION
- 1.1 Types of Fertilizers
- 1.1.1 Inorganic Fertilizers
- 1.1.2 Organic Fertilizers
- 1.2 Advantages
- 1.3 Uses
- 1.4 Importance
- 2. HOW TO START A FERTILIZER MANUFACTURING BUSINESS?
- 2.1 Conduct Research
- 2.2 Create a Business Plan
- 2.3 Legal Process
- 2.4 Company Naming & License
- 2.5 Find a Suitable Location
- 2.6 Raw Material Supply for Fertilizers
- 2.7 Packaging & Distribution
- 2.8 Promotion of the Fertilizers
- 3. FERTILIZER TECHNOLOGY
- 4. MARKET OUTLOOK
- 4.1 Increase in Demand for Food Grain Production to Drive the Market Growth
- 4.2 Uncontrolled Use of Fertilizers that Leads to Pollution is predicted to Restrain Market Growth
- 4.3 Increase in Adoption of Organic Fertilizers to Generate Enormous Opportunities
- 4.4 Global Fertilizer Market, by Type
- 4.5 Global Fertilizer Market, by Form
- 5. CHEMICAL FERTILIZERS
- 5.1 Introduction
- 5.2 Classification of Fertilizers
- 5.2.1 Straight Fertilizers
- 5.2.2 Complex or Compound Fertilizers
- 5.3 Characteristics of Nitrogenous Fertilizers
- 5.4 Fertilizers Containing Water-Soluble Phosphorus Characteristics

- 5.5 Fertilizers Containing Citrate-Soluble Phosphorus Characteristics
- 5.6 Fertilizers Containing Insoluble Phosphorus Characteristics
- 5.7 Potassic Fertilizers
- 5.8 Sulphur Containing Fertilizers
- 5.9 Micronutrients Fertilizer
- 5.10 Sulphate (Salts)
- 5.11 Chelate
- 5.12 Nutrient Content of Chemical Fertilizers
- 6. FERTILIZER MATERIAL
- 6.1 Commercial Fertilizer Sources
- 6.1.1 Nitrogen Fertilizers
- 6.1.2 Phosphate
- 6.1.3 Potassium
- 6.1.4 Calcium
- 6.1.5 Magnesium
- 6.1.6 Sulfur
- 6.1.7 Micronutrient
- 7. AMMONIUM CHLORIDE (NH4CL)
- 7.1 Uses
- 7.2 Used as a Fertilizer
- 7.2.1 Chloride and Nitrogen
- 7.2.2 Medium-Strength Fertilizer
- 7.2.3 Crop Increase
- 7.2.4 Disease Prevention
- 7.3 Safely
- 7.4 Storage & Disposal
- 7.5 Properties
- 7.6 Preparation
- 7.7 Production
- 7.8 Production Method
- 7.9 Reaction
- 7.10 Applications
- 7.10.1 Metalwork
- 7.10.2 Medicine
- 7.10.3 Food
- 7.10.4 In the Laboratory
- 7.10.5 Flotation
- 7.10.6 Batteries
- 7.11 Other Applications
- 8. AMMONIUM CHLORIDE PREPARATION
- 8.1 Formula and Structure
- 8.2 Occurrence
- 8.3 Preparation
- 8.4 Physical Properties
- 8.5 Chemical Properties
- 9. AMMONIUM PHOSPHATE ((NH4)3PO4)
- 9.1 Types
- 9.2 Uses
- 9.3 How are Ammonium Phosphates Made?
- 9.4 Improve Soil Fertility
- 9.5 Improve Plant Nutrition
- 9.6 Process Description
- 9.7 Emission Factors

- 9.7.1 Emissions and Controls
- 9.8 Average Controlled Emission Factors for the Production Factor Rating
- 10. AMMONIUM SULFATE ((NH4)2SO4)
- 10.1 Ammonium Sulfate Structure (NH4)2SO4
- 10.2 Properties of Ammonium Sulfate (NH4)2SO4
- 10.3 (NH4)2SO4 Uses Ammonium Sulfate
- 10.4 Uses
- 10.5 Production
- 10.6 Agricultural Use
- 10.7 Management Practices
- 10.8 Non-Agricultural Uses
- 10.9 Preparation
- 10.10 Reactions
- 10.11 Benefits
- 10.12 Applications
- 10.13 Avoiding Exposure
- 10.14 Emissions and Controls
- 11. AMMONIUM SULFATE MANUFACTURING
- 11.1 Crystallizer (DP Crystallizer / Oslo Crystallizer)
- 11.1.1 Structure and Principle
- 11.2 Features
- 11.2.1 Large Circulation Volume
- 11.2.2 Sharp Distribution of Grain Sizes
- 11.2.3 Certainly Scale-Up
- 11.3 Applications
- 11.3.1 Inorganic Chemical
- 11.3.2 Organic Chemical
- 11.4 Oslo Crystallizer
- 11.4.1 Structure and Principle
- 11.5 Features
- 11.6 Applications
- 11.7 Features
- 11.7.1 Wide Range of Application
- 11.7.2 High Dehydration Performance
- 11.7.3 High Solid Throughput
- 11.7.4 High Cake Washing Performance
- 11.7.5 Gas Tight Construction
- 11.7.6 Can be Connected Directly to a Clean Flash Dryer
- 11.8 Applications
- 11.8.1 Inorganic Chemicals
- 11.8.2 Organic Chemicals
- 11.8.3 Polymers
- 11.9 Fluidized Bed Dryer Drying
- 11.9.1 Structure and Principle
- 11.10 Features
- 11.10.1 Uniformity of Product Quality
- 11.10.2 Easy Adjustment of Retention Time
- 11.10.3 Easy Maintenance
- 11.10.4 High Thermal Efficiency
- 11.11 Applications
- 12. DIAMMONIUM PHOSPHATE (DAP) ((NH4)2HPO4)
- 12.1 Production
- 12.2 Chemical Properties

- 12.3 Agricultural Use
- 12.4 Management Practices
- 12.5 Non-Agricultural Uses
- 12.6 Uses
- 12.7 Efficient Use
- 12.8 Properties
- 12.9 Advantages
- 12.10 Application
- 12.11 Specifications
- 12.12 Composition
- 13. DI-AMMONIUM PHOSPHATE (DAP) PREPARATION
- 13.1 Formulation
- 13.2 Application
- 13.3 Specifications
- 14. DAP FERTILIZER MANUFACTURING
- 14.1 Production Process
- 14.1.1 Compound Fertilizer Granulator
- 14.2 Solid DAP Fertilizer Crush Machine
- 14.3 DAP Fertilizer Mixing Machine
- 14.4 Fertilizer Drying Machine for Dap Fertilizer Production Process
- 14.4.1 Fertilizer Crusher
- 14.5 Feature
- 14.5.1 Crush Machine: Dedicated for Compound Fertilizer Materials
- 14.5.2 Fertilizer Mixing Equipment for Fertilizer Production
- 14.6 Granular Fertilizer Mixing Equipment: BB Fertilizer

Mixer

- 14.7 Advantages of Rotary Fertilizer Drying Machine
- 14.8 Fertilizer Drying Machine Effectively Remove Moisture
- 14.9 Burner
- 14.10 Hot Blast Furnace
- 15. UREA AMMONIUM NITRATE
- 15.1 Production
- 15.2 Agricultural Use
- 15.3 Management Practices
- 16. NEEM COATED UREA
- 16.1 Benefits
- 16.2 Reaping Benefits
- 16.2.1 Reduction in Wastage
- 16.2.2 Greater Yield, Lower Costs, and Improved Soil

Health

- 16.3 Advantage
- 16.4 Value Addition
- 16.5 Importance

## 17. UREA FERTILIZER PROCESS SELECTION AND ECONOMIC

## ASPECTS

- 17.1 Plant Components
- 17.2 Stripper
- 17.3 Carbamate Condensers
- 17.4 CO2 Compressors
- 17.5 HP Ammonia Pumps and Carbomate Pumps Piping
- 17.6 HP Control Valves
- 17.7 Process Selection
- 17.8 Conventional Processes

- 17.8.1 Once through Process 17.8.2 Conventional Recycle Process 17.9 Stamicarbon CO2 – Stripping Process 17.10 Snamprogetti Ammonia and Self-Stripping Processes 17.11 Isobaric Double Recycle Process 17.12 ACES Process 17.13 Basic Concept of Process **17.14 Features of Process** 17.14.1 Utility System **18. NEEM SEED OIL MILL PLANT** 18.1 Machines & Equipment Required to Start Neem Oil Mill Plant 18.1.1 Neem Seed Decorticator 18.1.2 Seed Cleaner 18.1.3 Oil Expeller 18.1.4 Filter Press Pump 18.1.5 Steam Boiler 18.1.6 Bucket Elevator 18.1.7 Screw Conveyor 18.1.8 Motor Control **19. N.P.K. COMPLEX FERTILIZERS** 19.1 Uses **19.2 Benefits 19.3** Properties **19.4 Production** 20. NPK FERTILIZER PRODUCTION LINE 20.1 Methods 20.1.1 NPK Fertilizer Granulation Production Line 20.1.2 NPK Fertilizer Pellets Blending Production Line 20.2 Roller Press NPK Fertilizer Granulation 20.3 Specification 20.4 Manufacturing Process 20.5 Mixing Line before the Granulation for Preparation 20.5.1 Fertilizer Batching Equipment 20.5.2 Fertilizer Mixer for Blending Plant 20.5.3 Fertilizer Crusher 20.6 Mixed NPK Materials Pelleting 20.7 Drum Type Wet Granulation Machine for Sale 20.8 Processes After Granulating
  - 20.8.1 Fertilizer Dryer
  - 20.8.2 Fertilizer Packing Machine
  - 20.8.3 Fertilizer Screener
  - 20.9 3 Types of NPK Fertilizer Granulation Machines can
  - Apply for Fertilizer Production Line
  - 20.10 High Output NPK Fertilizer Wet Granulation
  - Equipment
  - 20.11 New NPK Fertilizer Dry Granulator
  - 20.12 Economic Pan Type Fertilizer Granulator for NPK
  - Fertilizer Making
  - 20.13 Disc Pelletizer
  - 20.14 Rotary Granulator
  - 20.15 Double Roller Granulator

- 20.15.1 Pan Granulator for Sale
- 20.16 How to Mix NPK Fertilizers Properly?
- 20.17 Powder Mixing Technology for Granulation Process
- 20.18 Granular Fertilizer Blending Technology
- 20.19 For NPK Cooling, What Cooling Method does a Cooler Employ?
- 20.20 What are the Requirements for Setting up an NPK
- Complex Fertilizers Plant?
- 20.21 Effects of NPK Fertilizer Manufacturing Process on
- Plants and Yield Production
- 21. POTASSIUM CHLORIDE
- 21.1 Production
- 21.2 Agricultural Use
- 21.3 Management Practices
- 21.4 Non-Agricultural Use
- 21.5 Preparation of Potassium Chloride
- 21.6 Properties of Potassium Chloride
- 21.7 Physical Properties
- 21.8 Chemical Properties
- 21.9 Uses of Potassium Chloride
- 21.10 Chemical Properties
- 21.11 Manufacture
- 21.12 Potassium in Plants
- 21.13 Potassium in Soils
- 21.14 Fertilizing Soils with Potassium
- 21.15 Right Source
- 21.16 Right Rate
- 21.17 Right Time
- 21.18 Right Place
- 21.19 Potassium Deficiency Symptoms
- 21.20 Crop Response to Potassium
- 22. SINGLE SUPERPHOSPHATE (SSP)
- 22.1 Production
- 22.2 Chemical Properties
- 22.3 Efficient Uses
- 22.4 Agricultural Use
- 22.5 Management Practices
- 22.6 Non-Agricultural Uses
- 22.7 Raw Materials Needed for the Production of SSP
- 22.8 Advantages of SSP Fertilizer
- 22.9 Agronomic Importance
- 22.10 Materials and Methods
- 22.10.1 Milling of SSP Fertilizer
- 22.11 Characterizations
- 22.12 Solubilization Tests
- 22.13 Fertilizer Composition and Uses
- 22.14 Properties
- 22.15 Manufacturing
- 22.15.1 Blending and Grinding of Rock Phosphate
- 22.15.2 Superphosphate Production
- 22.15.3 Granulation
- 22.16 Storage and Handling
- 22.17 Price of Single Super Phosphate
- 22.18 Role of Phosphorus

- 23. SINGLE SUPER PHOSPHATE (SSP) MANUFACTURING PROCESS
- 23.1 Process Description
- 23.2 A Single Super Phosphate Manufacturing Plant's Components
- 23.2.1 Bucket Elevator
- 23.2.2 Ball Mill
- 23.2.3 Weight Feeder
- 23.2.4 Belt Conveyor
- 23.2.5 Screw
- 23.2.6 Conveyor Mixer
- 23.2.7 EOT Crane
- 23.2.8 Vibrating Screens
- 23.2.9 Venturi Scrubbers
- 24. TRIPLE SUPERPHOSPHATE (TSP)
- 24.1 Production
- 24.2 Agricultural Use
- 24.3 Management Practices
- 24.4 Non-Agricultural Uses
- 24.5 Benefits
- 24.6 Process
- 25. ZINC CHLORIDE (ZNCL2)
- 25.1 Uses
- 25.2 Process
- 26. ZINC SULPHATE (ZNSO4)
- 26.1 Introduction
- 26.2 Chemical Properties
- 26.3 Benefits
- 26.4 Importance
- 26.5 Applications
- 26.6 Uses
- 26.7 Product Uses and Specifications
- 26.8 Physical Properties
- 26.9 Specifications
- 26.10 Product Application
- 26.10.1 Micro Nutrient
- 26.10.2 Rayon Industry
- 26.10.3 Lithopone
- 26.10.4 Leather Tanning
- 26.11 Miscellaneous Applications
- 26.12 Market Potential
- 26.13 Micronutrients
- 26.14 Technical Aspects
- 26.14.1 Installed Capacity
- 26.14.2 Plant and Machinery
- 26.15 Manufacturing Process
- 26.16 Raw Material
- 26.16.1 Zinc Ash Availability
- 27. ZINC SULFATE MANUFACTURING
- 27.1 Process Description
- 27.1.1 Digesters
- 27.1.2 Rubber Lined Mild Steel Tanks
- 27.1.3 Pumps
- 27.1.4 Filter Press
- 27.1.5 Crystallizers

- 27.1.6 Chilling Plant 27.1.7 Compressors 28. ZINC SULFATE MONOHYDRATE MANUFACTURING 28.1 Raw Materials 28.2 Manufacturing Process 28.3 Application 28.4 Equipments 28.4.1 Acid Storage Tank 28.4.2 EOT Crane 28.4.3 Reactors 28.4.4 Filter Press 28.4.5 Centrifuge 28.4.6 M L Storage Tank 28.4.7 Drier 28.4.8 Hot Air Generating Unit 28.4.9 Cyclone 28.4.10 Hot Air Blower 28.4.11 Slat Conveyor 29. MAGNESIUM SULFATE (MGSO4) 29.1 Features 29.2 Applications (Agro & Fertilizer Industry) 29.3 Hydrates 29.4 Heptahydrate 29.5 Monohydrate 29.6 Undecahydrate 29.7 Enneahydrate 29.8 Natural Occurrence 29.9 Preparation **29.10 Physical Properties** 29.11 Uses 29.11.1 Medical 29.11.2 Agriculture 29.11.3 Food Preparation 29.12 Chemistry 29.13 Construction 29.14 Aquaria 29.15 Double Salts 29.16 The Role of Magnesium in Crops 29.17 Symptoms of Magnesium Deficiency 29.18 The Role of Magnesium in the Soil 29.19 Magnesium in the Soil 29.20 Relationship of Magnesium to Calcium in Soils **30. MAGNESIUM SULPHATE MANUFACTURING** 30.1 Manufacturing Process 30.1.1 Step – 1 Reacto 30.1.2 Step – 2 Filtration Through Filter Press 30.1.3 Step – 3 Crystallization 30.1.4 Step – 4 Centrifugation 31. LIQUID FERTILIZER PRODUCTION (LIQUEFACTION) 31.1 Liquid Fertilizer Contains this Primary Element **31.2 Complex Fertilizers** 31.3 Colloidal Clay
- 31.3.1 Bentonite

- 31.4 Orchard or Vineyard
- 31.4.1 Leaf Analysis
- 31.4.2 Sampling/Analysis
- 31.4.3 Fruitlet Mineral Analysis
- 31.5 Benefits
- 31.5.1 Easy to Apply Nutrients
- 31.5.2 High Liquid Concentrate
- 31.5.3 Fast Acting Feed
- 31.5.4 Liquid Lawn Fertilizer vs. Granular
- 31.5.5 Types of Liquid Fertilizer
- 31.6 How Does Liquid Fertilizer Work?
- 31.7 Apply Liquid Fertilizer
- 31.8 Different Types of Formulas
- 32. ORGANIC FERTILIZER
- 32.1 Examples and Sources
- 32.2 Minerals
- 32.3 Animal Sources
- 32.4 Plant
- 32.5 Peat
- 32.6 Human Waste
- 32.7 Others
- 32.7.1 Farming Application
- 32.8 Comparison
- 32.8.1 Nutrient Density
- 32.9 Soil Biology
- 32.10 Consistency
- 32.11 Source of Organic Fertilizers
- 32.12 Importance of Organic Fertilizer
- 32.13 Impacts of Organic Fertilizer Application on Soil Properties
- 32.14 Role of Organic Fertilizer for Agriculture
- 32.15 Advantages
- 32.16 Types
- 32.16.1 Manure
- 32.16.2 Compost
- 32.16.3 Rock Phospate
- 32.16.4 Chicken Litter
- 32.16.5 Bone Meal
- 32.16.6 Vermicompost
- **33. MANURE PRODUCTION**
- 33.1 Factors that Affect Manure Composition
- 33.2 Feeding and Nutrient Excretion
- 33.3 Water Consumption
- 33.4 In-Barn Water Use
- 33.5 Livestock Bedding
- 33.6 In-Barn Drying Systems
- 33.7 Weather
- 33.8 Manure Storage Design
- 33.9 Microbial Decomposition and other Nutrient and Moisture Transformations
- 33.10 Settling of Solids Liquid Pig Manure
- 33.11 Manure Sampling and Analysis
- 33.12 General Guidelines for Sampling Manure
- 33.13 Sampling Well Agitated Liquid Manure
- 33.14 Sampling Partially Agitated Liquid Manure

- 33.15 Sampling Manure from Multi-Celled Systems
- 33.16 Sampling Solid Manure
- 33.17 Laboratory Analyses for Manure
- 33.18 Rapid In-Field Testing of Liquid Manure
- 33.19 Moisture and Dry Matter Content
- 33.20 Nitrogen
- 33.21 Carbon to Nitrogen Ratios and Nitrogen Availability
- from Manure
- 33.22 Phosphorus Forms in Manure
- 33.23 Estimated Available N: P2O5 Ratios
- 33.24 Potassium
- 33.25 Sulphur
- 33.26 Micronutrients and Other Trace Elements in Manure
- 33.27 Salts in Manure
- 33.28 By-Products of Manure Treatment
- 33.28.1 Composting
- 33.29 Solid Liquid Separation
- 33.30 Centrifuge
- 33.31 Rotary Press
- 33.32 VP Systems Air Floatation and Belt Filter Press
- 33.33 Gravity Separation
- 33.34 Anaerobic Digestion
- 34. CLASSIFICATIONS OF MANURE
- 34.1 Types
- 34.1.1 Animal Manure
- 34.1.2 Compost
- 34.1.3 Green Manure
- 34.2 Uses
- 34.2.1 Animal Manure
- 34.3 Issues
- 34.3.1 Livestock Antibiotics
- 34.3.2 Bulky Organic Manures
- 34.3.3 Farmyard Manure
- 34.3.4 Sheep and Goat Manure
- 34.3.5 Poultry Manure
- 34.3.6 Concentrated Organic Manures
- 34.3.7 Oil Cakes
- 34.3.8 Other Concentrated Organic Manures
- 34.3.9 Animal Based Concentrated Organic Manures
- 35. CROP NUTRIENT PRODUCTION
- 35.1 Crop Nutrients
- 35.2 Nutrients Plants Require for Growth
- 35.3 Soil-Derived Macronutrients
- 35.4 Soil-Derived Micronutrients
- 35.5 The Most Important Crop Nutrients
- 35.6 Importance of Crop Nutrition Management
- 36. ISO STANDARDS
- 37. FERTILIZER STANDARDS LIST
- 38. FACTORY LAYOUT AND PROCESS FLOW CHART & DIAGRAMS
- 39. PHOTOGRAPHS OF PLANT AND MACHINERY WITH SUPPLIER'S CONTACT DETAILS
- Ammonia Chillers
- Fertilizer Cleaner
- Fertilizer Pan Mixer

- Fertilizer Granule Making Machine
- Fertilizers Bagging and Packaging Machine
- Fertilizer Granulator
- Blender Machine
- Hot Blast Valve & Blast Furnace
- Pulverizer Mills
- Hammer Mill
- Bucket Elevator
- Air Compressor
- Ribbon Mixer
- Tray Dryer
- EOT Crane
- Weigh Feeder
- High Pressure Compressor
- Control Panel
- Steel Jacketed Tank
- Storage Tank

## 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, Startup 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.

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

Thu, 01 May 2025 08:51:27 +0000