

Logo

106-E, Kamla Nagar, New Delhi-110007, India.  
Tel: 91-11-23843955, 23845654, 23845886, +918800733955  
Mobile: +91-9811043595  
Email: npcs.ei@gmail.com, info@entrepreneurindia.co  
Website: www.entrepreneurIndia.co

## Fertilizers Manufacturing Handbook

<b>Code:</b> NI336	<b>Format:</b> paperback
<b>Indian Price:</b> ₹2795	<b>US Price:</b> \$200
<b>Pages:</b> 456	<b>ISBN:</b> 9788195676965
<b>Publisher:</b> NIIR PROJECT CONSULTANCY SERVICES	

## Description

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 (P<sub>2</sub>O<sub>5</sub>) 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 agri-produce.

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.

## **Content**

### 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 ( $\text{NH}_4\text{Cl}$ )

### 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 ( $(\text{NH}_4)_3\text{PO}_4$ )

### 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 ((NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>)

10.1 Ammonium Sulfate Structure (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>

10.2 Properties of Ammonium Sulfate (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>

10.3 (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> 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) ((NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub>)

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 CO<sub>2</sub> Compressors

17.5 HP Ammonia Pumps and Carbamate 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 CO<sub>2</sub> – 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 Pelletizing

### 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 ( $\text{ZnCl}_2$ )

25.1 Uses

25.2 Process

26. ZINC SULPHATE ( $\text{ZnSO}_4$ )

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 ( $\text{MgSO}_4$ )

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 Phosphate
    - 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: P<sub>2</sub>O<sub>5</sub> 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 Project Consultancy Services (NPCS)**

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and/or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes various technology books, directories, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists, and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureaus, consultants and consultancy firms as one of the inputs in their research.

NIIR PROJECT CONSULTANCY SERVICES

106-E, Kamla Nagar, New Delhi-110007, India.

Tel: 91-11-23843955, 23845654, 23845886, +918800733955

Mobile: +91-9811043595

Email: [npcs.ei@gmail.com](mailto:npcs.ei@gmail.com), [info@entrepreneurindia.co](mailto:info@entrepreneurindia.co)

Website: [www.entrepreneurIndia.co](http://www.entrepreneurIndia.co)