

Entrepreneur India



R.N.I. NO. 61509/95

AN ISO 9001-2015 CERTIFIED COMPANY

www.entrepreneurindia.co

₹ 20/-

An Industrial Monthly Journal on

INDUSTRIAL DEVELOPMENT, TECHNOLOGIES & PROJECT OPPORTUNITIES

Vol. 30

No. 09

September 2024

16 Pages

About Us

NPCS is a well-known technical consultancy that focuses on Project Reports Compilation, and we have been following a tight system and procedure to assure only top quality in accordance with our clients' expectations in this rapidly increasing and changing market. We've created the list of the top projects to start your own business startups.

EDITOR :

AJAY KUMAR GUPTA
D.M.S, M.B.A.

Entrepreneurship Management

ASSOCIATE EDITOR :

P. K. TRIPATHI
UDANT GUPTA

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar,
Delhi-110 007 (India).

Tel. : 91-11-23843955
91-11-23845886
Mob.: +91-9097075054
+91-8800733955

E-mail :

info@niir.org
npcs.india@gmail.com

Website :

www.niir.org
www.entrepreneurindia.co

Adhesives Formulary Handbook

(Adhesives for Construction, Fabric, Packaging, Paper, Film, Flocking, Foam, Water-Based, Oil-Based, Corrugation, Labelling, Hot Melt Adhesives, Pressure Sensitive Adhesives, Hot Melt Coatings, Grouting Compounds, Epoxy Adhesives, Caulking, Cement, Concrete and Plaster Patching Compounds, Glazing Compounds, Joint Cements, Mastics, Putties, Sealants, Solders with Machinery Equipment Details & Factory Layout) 2nd Edition

₹ 1,895/- US\$ 48 -

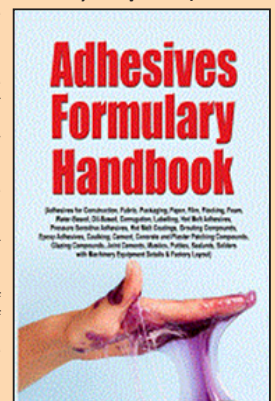
Adhesives are substances that bind materials together. It is a kind of substance that adheres to other substances. It might be powdered and dry, like baking soda or cornstarch, or it can be sticky like glue. Many people unknowingly use adhesive on a daily basis. Stickers, bubble gum, and tape are a few examples. Adhesive comes in a wide variety of forms, each with a specific purpose and use. Rubber cement, for instance, can be used to attach the paper to surfaces. It possesses a solid binding that can be easily broken with water or an oil-based solvent. Synthetic adhesives are usually cheaper and easier to use than natural ones, but they may not last as long. There has been an increase in popularity of these products thanks to their low price point and ease of use. There is also an abundance of different options available for these products which allows people with different needs or preferences to find what suits them best.

The adhesives market is expected to be positively impacted by growing building and construction industry demand. Adhesives are essential construction raw material used in various applications in the industry, from drywall lamination to flooring and roofing. This is because these industries require different types or levels of protection from chemicals and/or heat, which can only be provided by adhesives. Use of adhesives by the automotive industry is expected to grow at a CAGR of 2.6% over the next years. Increasingly pre-fabricated houses are also using adhesives instead of nails, driving the demand for adhesives. The use of adhesives in transportation and packaging will also drive growth with a CAGR of 3.2%. The adhesive market is enormous, and the demand for adhesives will never go down.

The production of adhesives is a lucrative industry with several workable company concepts. Therefore, it makes sense to give it a try by starting your own business. Many entrepreneurs are realizing the benefits of owning an adhesive business. One major reason is that this type of business only requires a small amount of start-up capital. It's also a great way for entrepreneurs to get their feet wet in the entrepreneurial world without having to worry about things like inventory, shipping and customer service. Continue reading this book for more information on the glue industry. You'll learn more about starting your own Adhesives manufacturing business. Making adhesives is a great way to generate money because there is such a high demand for them in today's market.

The major contents of the book are Adhesives for Construction, Fabric, Packaging, Paper, Film, Flocking, Foam, Water-Based, Oil-Based, Corrugation, Labelling, Hot Melt Adhesives, Pressure Sensitive Adhesives, Hot Melt Coatings, Grouting Compounds, Epoxy Adhesives, Caulking, Cement, Concrete and Plaster Patching Compounds, Glazing Compounds, Joint Cements, Mastics, Putties, Sealants, Solders, Factory Layout, Machinery Equipment Details & photographs with Suppliers Contact Details.

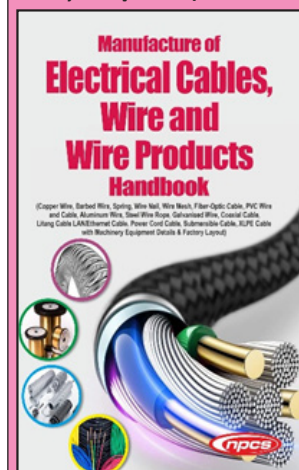
A total guide to manufacturing and entrepreneurial success in today's most demandable Adhesive industry. This book is one-stop guide to one of the fastest growing sectors of the Adhesive industry, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on the commercial production of Adhesive product. It serves up a feast of how-to information, from concept to purchasing equipment.



Manufacture of Electrical Cables, Wire and Wire Products Handbook

(Copper Wire, Barbed Wire, Spring, Wire Nail, Wire Mesh, Fiber-Optic Cable, PVC Wire and Cable, Aluminum Wire, Steel Wire Rope, Galvanized Wire, Coaxial Cable, Litang Cable LAN/Ethernet Cable, Power Cord Cable, Submersible Cable, XLPE Cable with Machinery Equipment Details & Factory Layout)

₹ 2,575/- US\$ 67 -



The Electrical Cables, Wire and Wire Products Handbook has been written with a dual purpose in mind: the first is to provide information on the actual assembly of cables, wire, and wire products; the second is to serve as an initial reference handbook for electrical cable, wire, and wire products designers.

A successful business needs a good foundation. This handbook will provide you with the basics on electrical cables, wire and wire products. You'll learn about the different types of cables, how they're made and what goes into making a quality product. Plus, you'll get an overview of the factory layout and machinery involved in the manufacturing process. With this knowledge in hand, you'll be well on your way to starting a successful business. Explore the possibilities! Learn about production of different types of wires.

The global wires and cables market size was estimated at growth rate (CAGR) of 4.4%. The global copper wire market reached a CAGR of 5.70%. The global spring market size at a CAGR of 4.5%. Global Wire Mesh Market size valued at a CAGR of 3.5%. The global fiber optic cable market a CAGR of 14.5%. The CAGR for the plastic coated steel wires market is 6.28%. The global Aluminum Wire market is forecasted to grow at a rate of 3.3%. The global steel wire rope & plastic rope market size at a CAGR of 8.0%. The global hot-dip galvanized steel wire market is expected to grow at a CAGR of 4.5%. The global coaxial cables market size is expected growth rate (CAGR) of 9%. The global ethernet cable market size a CAGR of 11.3%. The global power cables market size a CAGR of 6.8%. The global market for Electric Submersible Cables growing at a CAGR of 3.5%. The global XLPE Cables market size is estimated a CAGR of 5.0%.

The market demand for wire and wire products is constantly growing. This is due to the increasing need for electrical power and the ever-growing telecommunications industry. The manufacture of electrical cables, wire and wire products is a highly specialized process that requires the use of sophisticated machinery and equipment. Examples of this are extruders, crimpers, cutters, heat treaters and insulation converters. These are all machines used in the production of specific types of wire and cable such as copper wire, aluminum wire or fiber optic cable, Barbed Wire, Wire Nail, Wire Mesh, Steel Wire. There are also many other types including galvanized steel wire rope, steel springs and metal mesh screens.

The Manufacture of Electrical Cables, Wire and Wire Products Handbook is a comprehensive guide everything from the conception of your business to the execution of your product. This book provides detailed instructions on how to start a business, including how to write a business plan, and how to manufacture your product.

The book covers the manufacture of electrical cables, wire and wire products. It includes production of copper wire, barbed wire, spring wire nail, wire mesh, fiber-optic cable, PVC wire and cable, aluminum wire, steel wire rope, galvanized wire, coaxial cable, litang cable LAN/ethernet cable, power cord cable, submersible cable, XLPE cable with machinery equipment details & factory layout.

In today's dynamic market, startups and entrepreneurs are continually on the lookout for viable business opportunities that promise both sustainability and profitability. One such promising venture is the manufacturing of aluminum from bauxite. This sector not only offers a robust market presence but also ensures a long-term return on investment due to the ever-growing demand for aluminum in various industries worldwide.

Why Startups Should Invest in Aluminium Manufacturing

1. Market Size and Trends

Aluminum is integral to a myriad of industries, including automotive, construction, electronics, aerospace, and packaging. As modern technology and infrastructure continue to evolve, the demand for aluminum has seen a steady increase. According to industry reports, the global aluminum market size was valued at over USD 147 billion in 2020 and is projected to grow at a compound annual growth rate (CAGR) of around 3.1% from 2021 to 2028. This growth trajectory is fueled by its recyclability and lightweight properties, making aluminum a preferred material for eco-friendly and energy-efficient applications.

2. Strategic Investment

Investing in aluminum manufacturing from bauxite is a strategic move for entrepreneurs due to the material's critical role in sustainable development goals. Aluminum offers exceptional durability and resistance to corrosion, which are pivotal qualities that contribute to its extensive use in green building constructions, electric vehicles, and renewable energy systems. These sectors are earmarked for exponential growth, further enhancing the strategic importance of aluminum manufacturing.

3. Government Incentives

Many governments worldwide are supporting the aluminum industry through subsidies and tax incentives, especially when the production process is geared towards sustainability. These incentives can

Aluminium from Bauxite

A Strategic Business Endeavor for Startups and Entrepreneurs

significantly lower the initial capital requirement and operational costs, making it an attractive venture for new entrants in the industry.

Manufacturing Process of Aluminum from Bauxite

The process of extracting aluminum from bauxite is complex and involves several stages:

1. Extraction of Bauxite

Bauxite primarily contains aluminum hydroxide minerals including gibbsite, boehmite, and diaspore. The first step involves the mining of bauxite from mines located in various parts of the world including Australia, China, Brazil, and India.

2. Bayer Process

The extracted bauxite is then processed through the Bayer process to extract alumina (aluminum oxide) from it. This involves crushing the bauxite and treating it with sodium hydroxide at high temperatures and pressures, which results in the formation of sodium aluminate, leaving behind impurities as solid waste.

3. Electrolytic Reduction: Hall-Héroult Process

The alumina extracted is then subjected to an electrolytic reduction process, known as the Hall-Héroult process. In this step, alumina is dissolved in molten cryolite and electrically reduced to pure aluminum metal at temperatures of around 960°C.

4. Casting

The molten aluminum is then cast into ingots, sheets, or other basic forms depending on the intended use. These forms are then processed further to produce the final products.

List of Essential Machinery

To establish a plant for the manufacture of

aluminum from bauxite, the following machinery is crucial:

- Bauxite crusher and grinder: To prepare the raw bauxite for the Bayer process.
- Digesters: Used in the Bayer process to treat bauxite with sodium hydroxide.
- Clarification tanks: To separate alumina from impurities.
- Precipitation tanks: For recovery of alumina from the solution.
- Electrolytic cells (Pots): For the Hall-Héroult process where aluminum is extracted.
- Casting machines: To mold the molten aluminum into desired shapes.
- Conveyors and handling systems: For efficient movement of materials and products within the plant.

Conclusion

The venture into aluminum manufacturing from bauxite offers numerous advantages for startups and entrepreneurs, primarily due to the strong market demand and the strategic importance of aluminum in modern applications. Coupled with the potential for high profitability and government incentives aimed at promoting industrial growth, this sector presents a compelling business opportunity that aligns with global trends towards sustainability and innovation. By investing in this manufacturing industry, entrepreneurs can position themselves strategically in a market that is set to expand significantly in the coming years.

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 3600 MT Per Annum
Cost of Plant & Machinery	: ₹ 1038 Lakhs
Cost of Project	: ₹ 3307 Lakhs
Rate of Return	: 43%
Break Even Point (B.E.P)	: 36%

A Business Plan for Biodegradable Disposable Cups and Plates (Tableware) Using Sugarcane Bagasse

Since humans have started to recycle materials, bagasse's value was also increased. Nowadays, it is used for the production of building materials, packaging materials and disposable tableware. The paper industry has also started to replace wood fibers with sugarcane fibers to produce napkins, toilet paper and cardboards.

Uses and Applications

Bagasse is commonly used as a substitute for wood in many tropical and subtropical countries for the production of pulp, paper and board, such as India, China, Colombia, Iran, Thailand and Argentina. It produces pulp with physical properties that are well suited for generic printing and writing papers as well as tissue products but it is also widely used for boxes and newspaper production.

Indian Market

The bagasse tableware products market in India will exhibit ~9% CAGR during the forecast period. The bagasse plates market is expected to reach the valuation of US\$ 322 MN by 2029. It has been found that tableware products made from sugarcane bagasse are very hygienic.

Indian Market

The bagasse tableware products market in India will exhibit ~9% CAGR during the forecast period. The bagasse plates market is expected to reach the valuation of US\$ 322 MN by 2029. It has been found that tableware products made from sugarcane bagasse are very hygienic.

PROJECT COST ESTIMATE

CAPACITY:

Biodegradable Disposable Cups	: 555.5 Th. Pcs Per Day
Biodegradable Disposable Plates	: 312.5 Th. Pcs Per Day
Plant & Machinery	: ₹ 1924 Lakhs
Cost of Project	: ₹ 2789 Lakhs
Rate of Return	: 27%
Break Even Point	: 46%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

Introduction

In the realm of renewable energy solutions, Compressed Bio Gas (CBG) presents a lucrative and sustainable opportunity, particularly when derived from Napier grass. As the world pivots towards greener alternatives, the CBG industry, leveraging fast-growing energy crops like Napier grass, stands out as a promising venture for startups and entrepreneurs. This detailed exploration aims to shed light on the viability of this business idea, supported by market insights, manufacturing processes, and the necessary machinery involved.

Why Startups Should Consider CBG Production from Napier Grass

• Sustainable and Renewable

Napier grass is a perennial tropical grass species known for its rapid growth and high biomass yield, making it an excellent feedstock for bioenergy production. It absorbs carbon dioxide during its growth, contributing to a lower carbon footprint compared to fossil fuels. This sustainable aspect not only attracts environmentally conscious consumers but also aligns with global trends towards reducing greenhouse gas emissions.

• Economic Viability

Startups can benefit significantly from the lower cultivation and maintenance costs associated with Napier grass. It grows abundantly in various climates and soils, reducing the need for expensive fertilizers and pesticides. This aspect lowers the barrier to entry for new businesses, particularly in regions with suitable climates for Napier grass.

• Market Size and Trends

The global bio gas market has been experiencing robust growth, projected to continue expanding with increasing support from governments worldwide for renewable energy projects. The demand for renewable natural gas, especially in the form of CBG, is driven by its applications across power generation, transportation, and domestic fuel. This growth is further supported by incentives and subsidies provided to promote sustainable energy solutions.

Compressed Bio Gas (CBG) Using Napier Grass A Sustainable Business Venture for Startups and Entrepreneurs

PROJECT COST ESTIMATE

CAPACITY:

<i>Project Capacity</i>	: 5 MT Per Day
<i>By Product Liquid Fertilizer</i>	: 52 MT Per Day
<i>By Product Dry Solid Fertilizer</i>	: 20 MT Per Day
Cost of Plant & Machinery	: ₹ 710 Lakhs
Cost of Project	: ₹ 1644 Lakhs
Rate of Return (IRR)	: 29%
Break Even Point (B.E.P)	: 55%

• Export Potential

Countries rich in agricultural activities and those looking to diversify their energy portfolios are prime markets for CBG. The export potential is significant, particularly in regions that are yet to develop their bioenergy sectors but have commitments to renewable energy targets.

• Market Overview

The bio gas market, particularly for CBG, is witnessing significant advancements due to technological innovations and increased efficiency in production processes. With the global shift towards clean energy, the demand for CBG is expected to rise, providing ample opportunities for market penetration and expansion, especially for new entrants.

List of Machinery Required

Setting up a CBG production plant using Napier grass involves various stages, each requiring specific machinery:

1. Chopper or Shredder: For cutting Napier grass into smaller pieces to facilitate easier digestion.

2. Digesters: Large tanks where the biomass is anaerobically digested to produce methane.

3. Gas Storage Tanks: For storing the produced bio gas before compression.

4. Compressors: To compress the bio gas into CBG, making it suitable for transport and use.

5. Purification Systems: To remove impurities and ensure the gas meets quality standards.

6. Control Systems: For monitoring and controlling the process to ensure efficiency and safety.

Manufacturing Process

The production of CBG from Napier grass involves several critical steps:

1. Harvesting: Napier grass is harvested at its peak biomass to maximize yield.

2. Pre-treatment: The harvested grass is chopped or shredded to increase the surface area for better digestion.

3. Anaerobic Digestion: The pre-treated biomass is fed into digesters where microorganisms break down the organic material in the absence of oxygen, producing methane-rich bio gas.

4. Purification: The raw bio gas is then purified to remove contaminants and increase methane content.

5. Compression: The purified bio gas is compressed to CBG, which is easier to store, transport, and use across various applications.

Conclusion

Investing in a CBG production facility using Napier grass offers a sustainable and profitable business model for startups and entrepreneurs looking to enter the renewable energy sector. With favorable market conditions, supportive regulatory frameworks, and the intrinsic benefits of Napier grass as a feedstock, this venture promises not only financial returns but also contributes positively to environmental sustainability. As global energy paradigms shift, the timing could not be better for innovative enterprises to make a mark in the green energy landscape.

Biodegradable plastic is plastic that decomposes naturally in the environment. This is achieved when microorganisms in the environment metabolize and break down the structure of biodegradable plastic. The end result is one which is less harmful to the environment than traditional plastics.

Uses and Applications

These plastics are also used in non-disposable applications including mobile phone casings, carpet fibers, insulation car interiors, fuel lines, and plastic piping. They can be used for shopping, storing food, and even as garbage bags.

Manufacturing Business of Biodegradable Plastic Bags from Corn & Cassava Starch Granules

Some Applications of Bio-plastics Bags:

Bio-plastic Packaging, Bio-plastics for Consumer Electronics, Food Service, Medical, Aerospace and Automotive, Cosmetics etc.

Indian Market

The global biodegradable plastic market size was estimated at USD 4.1 billion in 2021. It is

expected to expand at a compound annual growth rate (CAGR) of 9.7% during the upcoming period.

PROJECT COST ESTIMATE

CAPACITY:

<i>Biodegradable Plastic Bags from Corn Starch Granules</i>	: 6 MT Per Day
<i>Biodegradable Plastic Bags From Cassava Starch Granules</i>	: 6 MT Per Day
Plant & Machinery	: ₹ 101 Lakhs
Cost of Project	: ₹ 324 Lakhs
Rate of Return	: 34%
Break Even Point	: 75%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

The glass manufacturing industry, with its perennial demand, presents a lucrative opportunity for startups and entrepreneurs. The idea of manufacturing glass bottles from sand is not only innovative but also steeped in a tradition of environmental sustainability and economic sense. This venture taps into the continuously growing packaging market and aligns with global trends pushing towards more sustainable packaging solutions.

Why Entrepreneurs Should Consider Glass Bottles Manufacturing

1. Environmental Sustainability: Glass is 100% recyclable and can be recycled endlessly without loss of quality or purity—an appealing factor in today's eco-conscious market. By choosing to manufacture glass bottles, startups position themselves as environmentally responsible, meeting the consumer and regulatory demands for sustainable practices.

2. Market Size and Trends: The global glass packaging market is projected to grow significantly, driven by increasing consumption of alcoholic beverages (especially beer), in pharmaceutical packaging, and in the food and beverage industry. According to recent market research reports, the glass packaging market is expected to reach billions of dollars by 2025, growing at a compound annual growth rate (CAGR) of approximately 4-5%.

3. Export Potential: Glass bottle manufacturing holds considerable export potential. Many countries lack sufficient glass production facilities and rely heavily on imports to meet their packaging needs. Starting a manufacturing unit in a country with accessible raw materials and lower labor costs can position a business as a key player in the international market.

4. Consumer Perception: Glass packaging is often associated with high quality and premium product experience. Consumers perceive glass as safer and better for maintaining the integrity of a product compared to plastics or other materials, which can leach chemicals.

Steps to Start a Glass Bottles Manufacturing Business

1. Market Research: Conducting thorough

Starting a Glass Bottles Manufacturing Business from Sand: An Ideal Venture for Entrepreneurs

market research is crucial. Entrepreneurs should analyze local and global trends, identify target markets, and understand consumer behavior towards glass packaging. This step also involves studying competitors and existing brands in the market.

2. Business Plan: Create a detailed business plan outlining the business model, financial projections, marketing strategy, and operational structure. This plan will serve as a roadmap for the startup and is essential for securing funding from investors or banks.

3. Location and Setup: Choosing the right location is vital. The manufacturing facility needs to be close to raw material supplies (sand) and have access to transportation, water, and energy resources.

4. Machinery and Equipment: The list of machinery required for manufacturing glass bottles includes:

- Batch House equipment: To handle the raw materials
- Furnace: For melting the sand and other raw materials
- Forming Machines: For shaping the molten glass into bottles

- Annealing Lehr: To gradually cool the bottles, relieving stresses
- Inspection Equipment: For quality control
- Packaging Machinery: For packing the bottles for shipment

5. Manufacturing Process: The manufacturing process involves several key steps:

- Batch Preparation: The first step involves mixing sand with recycled glass (cullet), limestone, soda ash, and other chemicals to form the glass batch.
- Melting: The batch is fed into a furnace at approximately 1700°C to melt the ingredients into molten glass.
- Forming: The molten glass is then formed into bottles using either blow-and-blow or press-and-blow techniques in the forming machines.

- Annealing: The bottles are passed through an annealing Lehr where they are slowly cooled to remove internal stresses and ensure strength.
- Inspection and Packaging: Finished bottles are inspected for defects and then packaged for storage and distribution.

Conclusion

Starting a glass bottles manufacturing business from sand is a promising venture for entrepreneurs looking to enter a growing industry with strong market demand and significant export potential. This business not only offers a path towards profitability but also aligns with global shifts towards sustainable development. By investing in this industry, startups can harness the advantages of a robust market while contributing positively to environmental sustainability.

PROJECT COST ESTIMATE CAPACITY

Project Capacity	: 300 MT Per Day
Cost of Plant & Machinery	: ₹ 52 Cr.
Cost of Project	: ₹ 106 Cr.
Rate of Return	: 27%
Break Even Point (B.E.P)	: 41%

Setup Curcumin Extraction Unit

Turmeric is a golden spice derived from the rhizomes of Curcuma longa, a member of the ginger family (Zingiberaceae). It is widely utilised in India for a variety of purposes, including health, food preservation, and textile dyeing. Underground horizontal stems that develop roots and branches are known as rhizomes.

used to treat cancer, Alzheimer's disease, and other serious illnesses. It's also used to treat cancer, arthritis, and viral infections, so the pharmaceutical sector will continue to want it.

Curcumin's anti-inflammatory and antioxidant properties, as well as its use in ayurvedic medical formulations, will increase demand for curcumin-

Curcumin's market exceeded USD 70 million in 2020, with a CAGR of more than 11% expected between 2021 and 2027. Curcumin is a substance that is often

in-based nutritional supplements. Curcumin's benefits in decreasing depression, metabolic syndrome, and cholesterol management are expected to drive market growth throughout the forecast period.

PROJECT COST ESTIMATE

CAPACITY :

Curcumin Powder	: 100 Kgs Per Day
Turmeric Oil	: 48 Kgs Per Day
Deoiled Turmeric	: 1,842 Kgs Per Day
Plant & Machinery	: ₹ 215 Lakhs
Cost of Project	: ₹ 493 Lakhs
Rate of Return	: 27%
Break Even Point	: 64%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

Steel Rebars (Thermo-Mechanically Treated) - TMT Bars Manufacturing from Scrap

The manufacturing of steel rebars {thermo-mechanically treated (TMT)} bars from scraps represents a promising and sustainable venture for startups and entrepreneurs. This industry not only offers substantial economic benefits but also aligns with global trends towards recycling and sustainability. Here's a comprehensive insight into why this business is a sound investment, complete with market analysis, manufacturing process, and machinery required.

Why Startups Should Venture into TMT Bars Manufacturing from Scrap

1. Sustainability and Cost-Effectiveness: Using scrap metal as a raw material is an eco-friendly choice that reduces landfill waste and the need for virgin mining resources. The cost of scrap metal is also generally lower than that of fresh steel, making it a cost-effective option for producing TMT bars. This efficiency can be a significant competitive edge in the market.

2. Growing Market Demand: The construction industry, a major consumer of TMT bars, is booming globally. Urbanization, infrastructural development, and increased investment in housing and commercial spaces are driving the demand for steel rebars and TMT bars. With governments worldwide pushing for more sustainable construction practices, the demand for recycled steel products is set to increase further.

3. Favorable Government Policies: Many governments are implementing favorable policies to promote the recycling industry, including subsidies and tax benefits for using scrap materials. These incentives can significantly reduce startup costs and operational expenses, making it an attractive venture for new entrants.

Market Overview and Potential

The global steel rebar market is poised for

substantial growth. According to recent market studies, the steel rebar market is projected to grow at a CAGR of around 4% to 6% over the next decade. The Asia-Pacific region, in particular, dominates the market due to rapid infrastructural developments and urbanization, followed by North America and Europe.

In terms of export potential, countries like India, China, and Turkey are leading exporters of TMT bars. The international demand for high-quality and sustainably produced TMT bars offers lucrative opportunities for new manufacturers who can adhere to global standards.

Manufacturing Process

1. Collection and Sorting of Scrap Metal: The first step involves collecting scrap metal, which includes discarded steel from construction sites, manufacturing waste, and old metal goods. This scrap is then sorted based on quality and composition.

2. Melting: The sorted scrap metal is melted in a high-temperature furnace. Melting is performed until the metal liquefies, and impurities are removed to ensure the quality of the steel.

3. Purification: The molten steel is then purified using electrolysis or other refining techniques to further eliminate any impurities and ensure the chemical composition suits the production of high-grade TMT bars.

4. Casting: The purified molten steel is cast into billets. These billets are pre-heated and then passed through a series of rolling mills to achieve the desired size and shape.

5. Thermo-Mechanical Treatment: This is the core process that gives TMT bars their name and characteristics. The steel bars are rapidly cooled after exiting the rolling mills, a process known as quenching. This creates a hard outer surface while maintaining a softer core. They are

then subjected to atmospheric cooling and further tempering to achieve high ductility and strength.

6. Cutting and Bundling: Finally, the bars are cut into predetermined lengths and bundled according to size and grade, ready for shipment.

List of Machinery Required

- Induction Furnace: For melting scrap metal.
- Rolling Mill: For shaping and reducing the thickness of the steel.
- Quenching System: For cooling the bars rapidly to achieve the desired temper.
- Cutting Machinery: For cutting the bars into specific lengths.
- Bundling Machinery: For packaging the finished bars.
- Material Handling Equipment: Includes cranes and forklifts for moving raw materials and finished products.

Conclusion

Investing in the manufacturing of steel rebars from scrap is not just economically viable but also environmentally beneficial. This industry offers excellent growth potential, significant export opportunities, and aligns well with global sustainability goals. For entrepreneurs looking to make a mark in the manufacturing sector, this is a venture worth considering.

PROJECT COST ESTIMATE

CAPACITY:

Steel Rebars

(Thermo-Mechanically Treated-TMT) : 500 MT Per Day

Slag (By Product) : 33.3 MT Per Day

Cost of Plant & Machinery : ₹ 16 Crore

Cost of Project : ₹ 58 Crore

Rate of Return : 30%

Break Even Point (B.E.P) : 59%

Manufacturing Business of IV Fluids (BFS Technology)

Intravenous fluids are fluids that are given to a patient intravenously (via the veins) or directly through the circulatory system. To prevent patients from damage, these fluids must be sterile, and there are various options. Many companies manufacture pre-packaged intravenous fluids and other things that can be added with sterile water to form an intravenous solution.

Two types of intravenous fluids are available. Crystalloids contain a solution of water-soluble molecules, such as saline solutions. Colloids are formed composed of particles that aren't soluble in water and produce a high osmotic pressure, which draws fluid into blood vessels.

In 2015, the global intravenous (IV) solutions market was worth USD 6.9 billion, and it is expected to increase at a CAGR of 7.8% over the next five years. The rise of this market can be ascribed to the rapidly rising geriatric population as well as the high frequency of malnutrition among the elderly and children.

PROJECT COST ESTIMATE

CAPACITY:

IV Fluids (500 ml Size Pack) : 78,000 Packs Per Day

Plant & Machinery : ₹ 576 Lakhs

Cost of Project : ₹ 1190 Lakhs

Rate of Return : 27%

Break Even Point : 50%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

Soda ash, scientifically known as sodium carbonate, is a pivotal ingredient widely used across various industries including glass manufacturing, detergents, chemicals, and more. Its production through the Solvay process, particularly from raw salt derived from desalination plants, represents a sustainable and profitable business opportunity for startups and entrepreneurs. This venture not only capitalizes on innovative production methods but also taps into a growing demand in both domestic and international markets.

Why Entrepreneurs Should Invest in Soda Ash Manufacturing

1. Sustainability and Cost Efficiency: Utilizing raw salt from desalination plants in the Solvay process is a testament to innovative resource management. Desalination, a method that removes minerals from saline water, provides an abundant source of raw salt that is both cost-effective and environmentally friendly. This approach ensures a steady and sustainable input material for the Solvay process, reducing the dependency on mined trona or natural soda ash sources, which are more exhaustible and potentially more costly.

2. Market Size and Growth Potential: The global soda ash market is on an upward trajectory, driven by its extensive use in glass manufacturing, where it reduces the melting temperature of sand used in glass formulations. According to industry reports, the global soda ash market is expected to reach significant market valuation by 2028, growing at a compound annual growth rate (CAGR) reflective of increasing industrial activities and the expansion of the consumer goods sector.

3. Export Potential: With major soda ash consumers located in Asia, Europe, and North America, startups can tap into export markets by meeting international standards and leveraging cost advantages. Countries like China and the USA are leading consumers, presenting ample opportunities for exporting high-quality soda ash produced via the Solvay process.

4. Market Overview and Trends: The rise in eco-friendly manufacturing processes and the growing emphasis on sustainable raw materials are trends that favor the Solvay process using desalinated raw salt. Furthermore, increasing applications of soda ash in water treatment, air pollution control, and innovative applications in food processing and health products continue to expand the market.

Key Machinery and Manufacturing Process

Machinery Required for Soda Ash Production through Solvay Process:

- Brine purification tanks
- Ammonia absorbers
- Lime kilns
- Solvay towers
- Centrifuges
- Rotary calciners

Soda Ash Manufacturing through Solvay Process:

An Optimal Business Idea for Startups

- Carbonation columns

Manufacturing Process:

1. Brine Preparation: Raw salt from desalination plants is dissolved in water to prepare brine. Impurities such as calcium and magnesium ions are removed through precipitation to ensure the brine is suitable for the process.

2. Ammoniation of Brine: Ammonia gas is introduced into the purified brine. The solution is then carbonated by passing carbon dioxide (sourced from lime kilns) through it, resulting in the precipitation of sodium bicarbonate.

3. Calcination: Sodium bicarbonate is filtered and heated in rotary calciners to decompose it into sodium carbonate and release water and CO₂.

4. Recovery of Ammonia: The released ammonia is recovered and recycled back into the process, making it an economical and environmentally friendly operation.

5. Packaging: The final product, anhydrous sodium carbonate, is cooled and packaged for distribution and sale.

Conclusion

Investing in soda ash manufacturing using the Solvay process from raw salt of desalination plants is a strategic, sustainable, and profitable business model for startups. It not only addresses environmental concerns but also meets the growing global demand for soda ash. Entrepreneurs venturing into this industry benefit from lower raw material costs, potential tax incentives for sustainable practices, and access to a broad and expanding market. With the right strategic approach, this venture can yield substantial returns while contributing positively to global sustainability efforts.

PROJECT COST ESTIMATE

CAPACITY:

Soda Ash (Na₂CO₃)	: 1333 MT Per Day
Ammonium Chloride (NH₄Cl)	: 1333 MT Per Day
Cost of Plant & Machinery	: ₹ 277 Crore
Cost of Project	: ₹ 387 Crore
Rate of Return	: 28%
Break Even Point (B.E.P)	: 65%

Recycled Polyester Fiber from used PET Bottles

Polyester is popular because it resists stretch and wrinkles, provides flexibility and comfort, doesn't shrink, and is easy to wash and wear. It's easily blended with cotton and wool and can pack serious durability and weather resistance. However, these qualities come with a significant cost. Polyester is not biodegradable. It's made from crude oil, which tops the charts as the most polluting industry in the world. Similarly, polyester dyes are far from environmentally friendly—in fact, they're toxic to humans. Lastly, the process of creating polyester is energy-intensive and requires large quantities of water.

Polyesters are also used to make bottles, films, tarpaulin, sails (Dacron), canoes, liquid crystal displays, holograms, filters, dielectric film for capacitors, film insulation for wire and insulating tapes. Polyesters are widely used as a finish on high-quality wood products such as guitars, pianos and vehicle/yacht interiors. Thixotropic properties of spray-applicable polyesters make them ideal for use on open-grain timbers, as they can quickly fill wood grain, with a high-build film thickness per coat. Cured polyesters can be sanded and polished to a high-gloss, durable finish.

It is assumed that there are approximately 165 million tons of plastics in the ocean which could be more the weight of fisheries by 2050. As there requires only some extra arrangement as a regular process could be much more effective to the environment. Only mixing the concept of plastic bottle melt filtration and fiber formation is required. By recycling, we could make a wide range of polyester fabric and at the same time, we could make a safer world.

The concern for Recycled PET (RPET) has escalated in the recent years. PET bottles, which form the major market of PET packaging resin (94%), are the most important from the point of recycling. More than 90% of PET is consumed in food packaging with drinks/beverages forming almost 80% of the food packaging segment. Since drinks and beverages are consumed mostly in residential houses, railway stations, restaurants, entertainment venues, airports and other public places, the importance of organized collection and recycling of post-consumer PET bottles needs to be over emphasized. Entrepreneurs who invest in this project will be successful.

PROJECT COST ESTIMATE

CAPACITY

Recycled Polyester Fiber	: 5,000 Kgs / Day
Plant & Machinery	: ₹ 73 Lakhs
Cost of Project	: ₹ 353 Lakhs
Rate of Return	: 28%
Break Even Point	: 53%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

Introduction to Calcium Chloride

Calcium chloride is a versatile chemical compound, widely used in various industrial applications such as deicing roads, in oil and gas operations, and as a desiccant for moisture control. Its ability to absorb moisture and its exothermic properties make it a valuable commodity in diverse sectors. Given its broad utility and the growing demand across different industries, starting a calcium chloride manufacturing business presents a promising opportunity for entrepreneurs and startups.

Reasons to Invest in Calcium Chloride Manufacturing

1. Diverse Application across Industries

Calcium chloride has a multitude of uses, from controlling dust on roads, serving as a brine for refrigeration plants, to use in concrete as an accelerator. Its role in the food industry as a firming agent and in pharmaceuticals as an electrolyte replenisher further broadens its market reach. The diversity in applications ensures a steady demand from multiple sectors, reducing market risks associated with dependency on a single industry.

2. Growing Market Demand

The global calcium chloride market has been on an upward trajectory, driven by severe winters in North America and increased oil drilling activities worldwide. According to market research, the calcium chloride market is expected to grow significantly, offering ample

Calcium Chloride Manufacturing: A Lucrative Venture for Startups and Entrepreneurs

opportunities for new entrants to capture and expand their market share.

3. Export Potential

Calcium chloride is in demand not only domestically but also in international markets. Countries with harsh winter conditions or growing oil and gas industries are continuous importers of this compound. Entrepreneurs can tap into these export markets to enhance profitability and scale operations beyond local boundaries.

4. Cost-Effective Raw Materials

The primary raw materials for producing calcium chloride are limestone and hydrochloric acid, both of which are readily available and relatively inexpensive. This

accessibility can lead to lower production costs and higher profit margins for manufacturing units.

Market Size, Share, Trends, and Analysis

The global calcium chloride market is expected to reach several billion dollars in the next few years, with a compound annual growth rate (CAGR) of approximately 5%. The largest market share belongs to North America, attributed to the extensive use of deicing agents. Following closely are regions like Asia-Pacific, where industrial growth is propelling demand. The increasing infrastructural developments and heightened oil and gas exploration activities globally are set to maintain the uptrend in demand for calcium chloride.

Manufacturing Process of Calcium Chloride

The production of calcium chloride can generally be achieved through two processes:

1. Solvay Process

In this method, limestone (calcium carbonate) is used to produce calcium chloride. The process involves several steps:

- Limestone calcination to produce lime (calcium oxide)
- Lime slaking where lime is treated with water to produce slaked lime (calcium hydroxide)
- Hydrochloric acid addition, where slaked lime is treated with hydrochloric acid,

resulting in calcium chloride.

2. Natural Brine Process

This process involves the purification and concentration of brine solution from natural sources:

- Purification of brine to remove impurities.
- Chemical treatment to precipitate unwanted minerals.
- Evaporation and crystallization to obtain calcium chloride crystals.

List of Essential Machinery

To establish a calcium chloride manufacturing unit, the following machinery is crucial:

- Lime Kiln for limestone calcination.
- Slaking Vessel for lime slaking.
- Reaction Vessels for chemical reactions.
- Evaporators and Crystallizers for brine processing.
- Centrifuges for separation.
- Dryers for obtaining the final dry product.

Conclusion

Investing in calcium chloride manufacturing is a sound decision for startups and entrepreneurs looking to enter a growing market with diverse applications and significant export potential. With favorable market trends and the broad industrial utility of calcium chloride, startups can achieve substantial economic returns, making it an attractive investment opportunity in the chemical manufacturing industry. Entrepreneurs can capitalize on this opportunity by setting up a manufacturing facility equipped with the right processes and machinery to meet the increasing global demand.

PROJECT COST ESTIMATE

CAPACITY :

Calcium Chloride (Flakes)	: 1667 MT Per Day
Carbon Di-oxide (By Product)	: 463 MT Per Day
Cost of Plant & Machinery	: ₹ 850 Crore
Cost of Project	: ₹ 1010 Crore
Rate of Return	: 26%
Break Even Point (B.E.P)	: 35%

Business Plan for Production of Surgical Products

(Surgical Absorbable Suture, Non Absorbable Suture, Surgical Mesh, Bone Wax, C Section Kits, Surgical Glue & Surgical Stapling)

Surgical products, usually referred to as surgical gadgets, are tools used during surgery to speed up healing and shorten the recovery period. The best surgical product for

you will rely on a variety of factors, including your individual medical situation, the type of surgery you will be having, and more. To assist you in getting ready for your own procedure, this article will examine all of the many surgical items available on the market today and describe how they are utilised in surgery.

Suture for Surgery

A surgical suture, usually referred to as a stitch or stitches, is a piece of medical equipment used to hold bodily tissues together and roughly define the boundaries of wounds following an operation or injury.

Biological Sutures

Absorbable sutures should not be used on body tissue that needs more

than two months of tensile strength because they either deteriorate through proteolysis or hydrolysis.

Sutures That Don't Absorb

These sutures do not degrade and maintain a higher tensile strength for extended periods of time.

Market Outlook:

The size of the global market for surgical equipment was estimated at USD 14.34 billion in 2021, and it is anticipated to increase at a CAGR of 9.3% from 2022 to 2030. The market is primarily being driven by factors including an ageing population,

an increase in the frequency of lifestyle disorders that eventually require surgery, rising healthcare expenditures, and significant unmet surgical needs.

PROJECT COST ESTIMATE

CAPACITY:

Surgical Absorbable Suture	: 5,000 Pcs. Per Day
Non Absorbable Suture	: 5,000 Pcs. Per Day
Surgical Mesh	: 5,000 Pcs. Per Day
Bone Wax	: 5,000 Pcs. Per Day
C Section Kits	: 1,000 Pcs. Per Day
Surgical Glue	: 5,000 Pcs. Per Day
Surgical Stapling	: 2,000 Pcs. Per Day
Plant & Machinery	: ₹ 69 Lakhs
Cost of Project	: ₹ 18 Cr
Rate of Return	: 31%
Break Even Point	: 56%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

NAME OF BOOKS

₹ / US\$

CHEMICALS, FINE CHEMICALS, VITAMINS, AMINO ACIDS AND PROTEINS

- Handbook on Chemical Industries (Alcohol Based) 750/- 100
- Industrial Chemicals Technology Handbook 1100/- 125
- The Complete Technology Book on Chemical Industries..... 975/- 100
- Handbook on Manufacture of Acetophenone, Alcohols, Allethrin, 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 1100/- 125
- Handbook on Fine Chemicals, Vitamins, Amino Acids And Proteins 1450/- 150
- Detailed Project Profiles on 9 Selected Chemical Industries (2nd Revised Edition) # 1995/- 150
- Detailed Project Profiles on Chemical Industries (Vol II) (2nd Revised Edition) # 1695/- 150
- The Complete Book on Non Ferrous and Precious Metals with Electroplating Chemicals..... 1975/- 200
- Modern Technology of Industrial Chemicals 1100/- 125
- The Complete Technology Book on Fine Chemicals 1100/- 125

PHARMACEUTICAL, DRUGS, API

- Drugs & Pharmaceutical Technology Handbook 1075/- 125
- Business Ideas for Startup in Drugs & Pharmaceutical Industry with Project Profiles (L-Ascorbic Acid (Plain), Pharmaceutical Unit, Ciprofloxacin Hydrochloride, Paracetamol, Paracetamol (BP/IP/USP Grade), Sterile Water for Injection, Active Pharma Ingredients Metformin and Ciprofloxacin, IV Fluid (BFS Technology) 3rd Edition #..... 2595/- 225
- Handbook on Active Pharmaceutical Ingredients (API), Drugs & Pharmaceutical Products (Paracetamol, Aspirin, IV Fluids, Ointment, Metronidazole, Liquid Glucose, Surgical Cotton, Syrup, Tablet, Excipients, Pharmaceutical Salts with Manufacturing Process, Machinery Equipment Details and Factory Layout)..... 2495/- 225

PESTICIDES, INSECTICIDES

- The Complete Technology Book on Pesticides, Insecticides, Fungicides and Herbicides (Agrochemicals) with Formulae, Manufacturing Process, Machinery & Equipment Details (4th Rev. Edn.) 1975/- 200
- Biopesticides Handbook 1575/- 150

STARCH & ITS DERIVATIVES

- The Complete Technology Book on Starch & Its Derivatives .. 1100/- 125

WAX & POLISHES

- The Complete Technology Book on Wax and Polishes 1895/- 200
- Wax Polishes Manufacturing Handbook with Process and Formulae (Automobile, Industrial, Leather, Furniture, Floor, Marine, Metal and Shoe Polish)..... 1675/- 150

JUTE & COIR PRODUCTS

- The Complete Book on Jute & Coir Products (With Cultivation & Processing) 2nd Rev. Edn. 1575/- 150
- Handbook on 100% Export Oriented Jute & Jute Products (Eco Friendly Projects) # 695/- 100

BIO-TECHNOLOGY, NANOTECHNOLOGY, ENZYMES, FOOD BIO-TECHNOLOGY, VERMICULTURE, VERMICOMPOST, BIO-FERTILIZER, ORGANIC FARMING, BIOGAS, MUSHROOM

- Bio -Technology Handbook 1100/- 125
- Plant Biotechnology Handbook 1100/- 125
- Hand Book on Projects in Export Thrust Area with International Market Survey (Bio-Tech & Pharmaceutical Technology) # 1095/- 100
- Biotech & Pharmaceutical Handbook #..... 1895/- 200
- Enzymes Bio -Technology Handbook..... 1100/- 125
- The Complete Book on Biotechnology Based Bulk Drugs 1050/- 125
- Handbook on Food Bio-Technology (Extraction, Processing of Fruits, Vegetables and Food Products) 2nd Revised Edition... 1495/- 150
- Handbook on Plants and Cell Tissue Culture 1275/- 125
- The Complete Technology Book on Vermiculture and Vermicompost (Earthworm) with Manufacturing Process, Machinery Equipment Details & Plant Layout (3rd Edn.)..... 1475/- 150
- The Complete Technology Book on Biofertilizer and Organic Farming (Potash, Greenhouse Farming, Hydroponic Farming, Pellet Fertilizer, Seaweed Fertilizer, Biogas with Manufacturing Process, Machinery Equipment Details) (3rd Edition)..... 1895/- 150
- Handbook on Mushroom Cultivation and Processing (With Dehydration, Preservation and Canning) 1275/- 125
- The Complete Book on Organic Farming and Production of Organic Compost (2nd. Rev. Edn.)..... 1575/- 150
- Nanotechnology Handbook 1675/- 150
- Nanoscience and Nanotechnology Handbook..... 1675/- 150
- Integrated Organic Farming Handbook 1275/- 125

Limited Edition-only photostat copy available

NAME OF BOOKS

₹ / US\$

- Handbook on Organic Farming and Processing 1275/- 125
- Handbook on Small & Medium Scale Industries (Biotechnology Products) .. 1695/- 150
- Manufacture of Biofertilizer and Organic Farming (2nd Edn.) 1195/- 125

BIOGAS AND INDUSTRIAL GASES

- The Complete Book on Industrial Gases (Acetylene, Argon, Butane, Butene, Carbon Dioxide, Carbon Monoxide, Ethane, Ethene, Helium, Hydrogen Chloride, Hydrogen, Krypton, Liquefied Natural Gas (LNG), Methane, Neon, Nitrogen, Nitrogen Trifluoride Gas, Nitrous Oxide, Oxygen, Ozone, Propane, Propene, Refrigerant Gases, Sulphur Dioxide Gas, Sulphur Hexafluoride Gas, Xenon, Gas Mixtures with Machinery Equipment Details and Factory 2495/- 250
- Handbook on Biogas and It's Applications (from Waste & Renewable Resources with Engineering & Design Concepts) 2nd Revised Edition 1175/- 125
- Biogas and Compressed Biogas (CBG) Production Handbook (From Waste & Renewable Resources) 1775/- 150

FERTILIZER, BIOFUEL

- Handbook on Biofuel, Ethanol and Bioenergy Based Products (Ethanol as Biofuel, Methane Gas, Biodiesel, Biogas, Biomass Gasification, Bio-Chemical, Renewable Energy, Clean-Energy, Activated Carbon, Agricultural Residues, Forestry Residues, Animal Waste, Wood Wastes, Industrial Wastes, Municipal Solid Wastes and Sewage with Machinery, Manufacturing Process, Equipment Details and Plant Layout) 1875/- 150
- 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)..... 2795/- 200

BIOPLASTIC, BIODEGRADABLE

- Bioplastics & Biodegradable Products Manufacturing Handbook (Bioplastic Carry Bags, Bio-PET, Bioplastic Drinking Straws, Corn and Rice Starch-Based Bioplastics, Food Packaging Applications, Cassava Bags, Biodegradable Tableware, Biodegradable Plates, Biodegradable Toilet Paper, Starch Based Biodegradable Plastics, Polylactic Acid (PLA))..... 1575/- 150
- Handbook on Biodegradable Plastics (Eco-Friendly Plastics) ... 600/- 100
- The Complete Book on Biodegradable Plastics and Polymers (Recent Developments, Properties, Analysis, Materials & Processes) .. 1275/- 125

PRINTING, PACKAGING, PRINTING INK

- Handbook on Modern Packaging Industries (2nd Rev. Edn.).. 1675/- 150
- Modern Technology of Printing & Writing Inks (2nd Rev. Edn.) .. 1475/- 150
- The Complete Technology Book on Printing Inks 1000/- 100
- Handbook on Printing Technology (Offset, Flexo, Gravure, Screen, Digital, 3D Printing with Book Binding and CTP) (5th Revised Edition) 1875/- 150
- Screen Printing Technology Handbook 1000/- 100
- The Complete Book on Printing Technology with Process Flow Diagrams, Plant Layouts and Machinery Details (Offset, Gravure, Flexographic, Security, Web Offset and Pad Printing) 2nd Rev. Edn. 1695/- 150

PAPER, PULP & PAPER CONVERSION

- Modern Technology of Pulp, Paper and Paper Conversion Industries 1000/- 100
- The Complete Technology Book on Pulp & Paper Industries.. 1100/- 125
- Handbook on Pulp and Paper Processing 1875/- 150

VEGETABLES, SPICES, AGRO BASED, CEREAL FOOD, MILK, PLANTATION, FARMING, FOOD & BEVERAGES, FRUITS, DAIRY, OILS & FATS, FISHERIES, MEAT, COCONUTS, SUGARCANE, TEA CULTIVATION & PROCESSING

- Cultivation of Fruits, Vegetables and Floriculture..... 1100/- 125
- Cultivation of Tropical, Subtropical, Vegetables, Spices, Medicinal and Aromatic Plants 1075/- 125
- Tropical, Subtropical Fruits and Flowers Cultivation 1075/- 125
- Food Packaging Technology Handbook (Biodegradable Films, Materials, Polymers, Aseptic Packaging, Labels and Labelling, Packaging of Cashew Nuts, Dairy Products, Milk, Fish, Meat, Shrimps, Canning of Vegetables, Fruits with details of Machinery and Equipments) 3rd. Rev.Edn. 1895/- 200
- Modern Technology on Food Preservation (2nd Rev. Edn.).... 1275/- 125
- Modern Technology of Food Processing & Agro Based Industries (Confectionery, Bakery, Breakfast Cereal Food, Dairy Products, Sea Food, Fruits & Vegetable Processing) with Project Profiles (3rd Rev. Edn.) 1775/- 150
- Modern Technology of Agro Processing & Agricultural Waste Products.... 975/- 100
- Handbook on Agro Based Industries (Garlic Oil and Powder, Biomass Briquettes from Bio Waste, Moringa Oleifera (Drumstick) Powder, Dehydrated Onion, Aloe Vera Gel and Powder, Cashew Nut Shell Oil and Cardanol, Rice Powder, Puttu and Wheat Powder, Fructose Syrup from Broken Rice, Potato Powder, Granules and Pellets, Rice Flakes and Puffed Rice, Cashew Nut Processing Unit, Banana, Onion, Orange and Tomato Powder & Disposable Plate and Cups from Waste Rice Husk Powder) 3rd Edition # 1775/- 150
- Handbook on Spices 975/- 100
- Modern Technology of Oils, Fats & Its Derivatives (2nd Rev. Edn.) .. 1875/- 150
- Detailed Project Profiles on Dairy & Dairy Products (Dairy Industry, Dairy Packaging, Dairy Farming & Dairy Products, Chocolate Confectionery Plant, Cheese Analogue, Milk Processing, Skimmed Milk Powder & UHT Milk Plant) 3rd Revised Edition # 2595/- 225

NAME OF BOOKS

₹ / US\$

- Profitable Agro Based Projects with Project Profiles (Cereal Food Technology) (2nd Revised Edition) # 1895/- 150
- Modern Technology of Milk Processing & Dairy Products (4th Rev. Edn.) 1475/- 150
- The Complete Technology Book on Dairy & Poultry Industries with Farming & Processing (2nd Rev. Edn.) 1275/- 125
- Handbook on Drying, Milling and Production of Cereal Foods (Wheat, Rice, Corn, Oat, Barley and Sorghum Processing Technology) (2nd. Rev. Edn.) 1295/- 125
- The Complete Book on Spices & Condiments (With Cultivation, Processing & Uses) (2nd Rev. Edn.) 2275/- 200
- The Complete Book on Coconut & Coconut Products (Coconut Cultivation, Manufacturing Process of Coconut Oil, Desiccated Coconut, Coconut Powder, Coconut Milk, Coconut Milk Powder, Coconut Chips, Coconut Water, Vinegar, Activated Carbon, Coconut Jam with Machinery Equipment Details & Factory Layout) 1695/- 150
- Profitable Farming & Allied Projects (2nd Rev. Edn.) # 1495/- 150
- Rabbit, Goat, Sheep, Poultry, Fish and Pig Farming with Feed Technology 1100/- 125
- The Complete Technology Book on Processing, Dehydration, Canning, Preservation of Fruits & Vegetables (Processed Food Industries) (5th Rev. Edn.) 1950/- 150
- Handbook on Fruits, Vegetable & Food Processing with Canning & Preservation (3rd Rev. Edn.) 1475/- 150
- Detailed Project Profiles on Plantation (Agro Based Projects) # 1095/- 100
- Handbook on Fisheries and Aquaculture Technology 1100/- 125
- The Complete Book on Meat Processing and Preservation with Packaging Technology 1275/- 125
- Preservation of Meat and Poultry Products (Preservation Techniques, Luncheon Meats, Meat Loaves, Meat Spreads, Canned Meat Products, Maintenance of Eggs, Soups, Gravies, Sauces, Sausage with Machinery, Equipment Details & Factory Layout) 1575/- 150
- The Complete Technology Book on Meat, Poultry and Fish Processing (2nd Revised Edition) 1475/- 150
- Potato and Potato Products Cultivation, Seed Production, Manuring, Harvesting, Organic Farming, Storage and Processing 1275/- 125
- Handbook on Rice Cultivation and Processing 1075/- 125
- The Complete Book on Beekeeping and Honey Processing (2nd Rev. Edn.) 1475/- 150
- Handbook on Citrus Fruits Cultivation and Oil Extraction 1575/- 150
- Fruits, Vegetables, Corn and Oilseeds Processing Handbook 1675/- 150
- Handbook on Spices and Condiments (Cultivation, Processing and Extraction) 1575/- 150
- Handbook on Fermented Foods and Chemicals 1875/- 150
- Handbook on Milk and Milk Proteins 1275/- 125
- The Complete Book on Cultivation and Manufacture of Tea (2nd Rev. Edn.) 1625/- 150
- The Complete Book on Sugarcane Processing and By-Products of Molasses (with Analysis of Sugar, Syrup and Molasses) 1675/- 150
- The Complete Book on Fruits, Vegetables and Food Processing 1675/- 150
- The Complete Book on Cashew (Cultivation, Processing & By-Products) 1775/- 150
- The Complete Book on Tomato & Tomato Products Manufacturing (Cultivation & Processing) 2nd. Rev. Edn. 1400/-150
- The Complete Book on Onion & Garlic Cultivation with Processing (Production of Onion Paste, Flakes, Powder & Garlic Paste, Powder, Flakes, Oil) 2nd Revised Edition 1575/-150
- Handbook on Pig Farming and Pork Processing (Feeding Management, Breeding, Housing Management, Sausages, Bacon, Cooked Ham with Packaging) 2nd Rev. Edn. 1275/-125
- Handbook on Manufacture of Indian Kitchen Spices (Masala Powder) with Formulations, Processes and Machinery Details (Chaat Masala, Sambar Masala, Pav Bhaji Masala, Garam Masala, Goda Masala, Pani Puri Masala, Kitchen King Masala, Thandai Masala Powder, Meat Masala, Rasam Powder, Kesari Milk Masala, Punjabi Chole Masala, Shahi Biryani Masala, Tea Masala Powder, Jaljeera Masala, Tandoori Masala, Fish Curry Masala, Chicken Masala, Pickle Masala, Curry Powder) (6th Rev. Edn.) 1995/-200
- The Complete Book on Ginger Cultivation and Manufacture of Value Added Ginger Products (Ginger Storage, Ginger Oil, Ginger Powder, Ginger Paste, Ginger Beer, Instant Ginger Powder Drink and Dry Ginger from Green Ginger) 1575/-150
- 55 Most Profitable Micro, Small, Medium Scale Food Processing (Processed Food) Projects and Agriculture Based Business Ideas for Startup (2nd Revised Edition) 1495/-150
- Manufacture of Pan Masala, Tobacco and Tobacco Products (Tobacco Cultivation, Chewing Tobacco, Cigarettes, Bidi, Cigars, Khaini, Zarda, Gutka, Katha, Mouth Freshner, Pan Chatni, Kimam, Sweet Supari, Nicotine Sulphate, USP Nicotine, Nicotine Tartarate, Nicotine, Polacrillex Resin) 2nd Rev. Edn. 2225/-200
- फूड प्रोसेसिंग इंडस्ट्रीज (खाद्य प्रसंस्करण एवं कृषि आधारित उद्योग परियोजनाएं) 2nd Rev. Edn. 1475/- 150
- Handbook on Maize (Corn) Processing and Manufacture of Maize Products (Oil, Starch, Corn Steep Liquor, Syrup, Cornmeal, Popcorn, Flakes, Gluten, Husk, Anhydrous Dextrose, High Maltose Syrup, Maltodextrin Powder, Monohydrate Dextrose, Sorbitol, Ethanol, Cattle Feed with Manufacturing Processes, Equipment Details and Plant Layout) 1895/- 150
- The Complete Book on Gums and Stabilizers for Food Industry ..1275/- 125

Limited Edition—only photostat copy available

NAME OF BOOKS

₹ / US\$

- Millet Production, Processing and Value-Added Products Handbook (Millet Cookies, Flakes, Flour, Noodles, Pasta, Beverages, Extruded Snacks, Extruded Flakes, Instant Dosa Mix, Instant Pongal Mix, Instant Sorghum Idli Mix, Instant Sorghum Upma Mix, Bread, Cakes, Instant Laddu Mix, Pizza Base, Rawa/Suji, Vermicelli, Puffs and Sorghum Muesli with Manufacturing, Machinery, Equipment Details & Factory Layout) 2495/- 225

CONFECTIONERY, COCOA, CHOCOLATE, ICE CREAM, BAKERY & SNACKS

- Modern Technology of Confectionery Industries with Formulae & Processes (2nd Rev. Ed.) 600/- 100
- The Complete Technology Book of Cocoa, Chocolate, Ice Cream and Other Milk Products 1275/- 125
- The Complete Technology Book on Flavoured Ice Cream (Manufacturing Process, Flavours, Formulations with Machinery Details) 2nd Revised Edition 1475/- 150
- The Complete Technology Book on Bakery Products (Baking Science with Formulation & Production (5th Rev. Edition) 1875/- 150
- The Complete Technology Book on Snack Foods (2nd Rev. Edn.) 1475/- 150
- Confectionery Products Handbook (Chocolate, Toffees, Chewing Gum & Sugar Free Confectionery) 1975/- 200

SMALL SCALE INDUSTRY (SSI), ENTREPRENEURSHIP, PROJECT IDENTIFICATION AND PROFILES, HI-TECH PROJECTS, EXPORT BUSINESS, GUIDELINES, SELF EMPLOYMENT, WOMEN ENTREPRENEURSHIP, SMALL, COTTAGE & HOME INDUSTRIES

- Stop Dreaming—Start Your New Business 400/- 50
- What No One Ever Tells You About Starting Your Business—Facilities and Procedures for Entrepreneurs 400/- 50
- Secrets for Making Big Profits from Your Business with Export Guidelines 400/- 50
- Opportunities for Women Entrepreneurship (With Project Profiles) 2nd Edition 575/- 50
- लघु व कुटीर उद्योग (स्मॉल स्कैल इण्डस्ट्रीज) (5th Revised Edition) ... 1150/- 125
- Profitable Small, Cottage & Home Industries 800/- 100
- Select and Start Your Own Industry (4th Revised Edition) 475/- 50
- Just For Starters : How To Start Your Own Export Business ? 4th Revised Edition 975/-100
- Just For Starters : How To Become A Successful Businessman ? 3rd Revised Edition 475/- 75
- Best Businesses You Can Start With Low Cost (2nd Rev. Edition) ... 750/-100
- 50 Projects To Start With 5,00,000 475/- 75
- Just For Starters: Selected Projects To Start With 30,00,000 475/- 50
- Just For Starters: Selected Projects To Start With 15,00,000 475/- 50
- Just For Starters : Selected Projects To Start With 35,00,000 475/- 50
- Grow Rich By Starting Your Own Business 325/- 50
- 50 Best Home Businesses To Start with Just 50,000 425/- 75
- Profitable Cottage and Tiny Industries 475/- 50
- Detailed Project Profiles on Selected Hi-Tech Projects (Project Reports) # 795/- 100
- Money Making Business Ideas You Can Start from Home with Low Costs (Profitable Part Time, Spare Time and Side Businesses) 2nd Revised Edition 800/- 100
- स्मॉल स्कैल इण्डस्ट्रीज प्रोजेक्ट्स (लघु, कुटीर व घरेलू उद्योग परियोजनाएं उद्यमिता मार्गदर्शिका) 2nd Rev. Edn. 950/- 100
- Start-Up Projects for Entrepreneurs : 50 Highly Profitable Small & Medium Industries—2nd Rev. Edn. 1700/- 150
- Entrepreneurs Start-Up Handbook: Manufacturing of Profitable Household (FMCG) Products with Process & Formulations (2nd Rev. Edition) 1675/- 150
- Profitable Small Scale Industries Money making Business Ideas for Startup (when you don't know what industry to start) 975/- 100

FASHION TECHNOLOGY

- Fashion Technology Handbook 495/- 75

CANDLE: MAKING & DESIGNS

- The Complete Technology Book on Candle: Making & Designs 650/- 100

PLASTICS, SPECIALITY PLASTICS, FOAMS (URETHANE, FLEXIBLE, RIGID), PET & PREFORM, POLYESTER FIBERS, MOULD DESIGNS, PLASTIC FILMS, HDPE AND THERMOSET PLASTICS, MEDICAL PLASTICS, INDUSTRIAL POLYMERS, ADDITIVES, COLOURANTS AND FILLERS, FIBRE GLASS, OPTICAL GLASS AND REINFORCED PLASTICS

- Modern Technology of Plastic Processing Industries (2nd Edn.) ... 975/- 100
- Detailed Project Profiles on Hi-Tech Plastic Products (2nd Revised Edition) # 1895/- 150
- Handbook on Pet Film and Sheets, Urethane Foams, Flexible Foams, Rigid Foams, Speciality Plastics, Stretch Blow Moulding, Injection Blow Moulding, Injection and Co-Injection Preform Technologies 1275/- 125
- Polymers and Plastics Technology Handbook 750/- 100
- The Complete Book on Medical Plastics 975/- 100

NAME OF BOOKS

₹ / US\$

- The Complete Technology Book on Expanded Plastics, Polyurethane, Polyamide and Polyester Fibers 1275/- 125
- The Complete Technology Book on Industrial Polymers, Additives, Colourants and Fillers..... 1100/- 125
- The Complete Technology Book on Polymers (With Processing & Applications)..... 1100/- 125
- The Complete Technology Book on Plastic Extrusion, Moulding and Mould Designs 1000/- 100
- The Complete Technology Book on Fibre Glass, Optical Glass and Reinforced Plastics..... 1275/- 125
- The Complete Technology Book on Plastic Films, HDPE and Thermoset Plastics..... 1175/- 125
- Modern Technology of Plastic and Polymer Processing Industries..... 750/- 100
- The Complete Book on Water Soluble Polymers 1575/- 150
- Speciality Plastics, Foams (Urethane, Flexible, Rigid) Pet & Preform Processing Technology Handbook..... 1275/- 125

LEATHER PROCESSING & TANNING

- Leather Processing & Tanning Technology Handbook..... 1400/-150

TEXTILE SPINNING, WEAVING, FINISHING AND PRINTING, PROCESSING WITH EFFLUENT TREATMENT, TEXTILE DYES & PIGMENTS, NATURAL DYES & PIGMENTS, NATURAL FIBERS, JUTE & COIR

- The Complete Technology Book on Textile Spinning, Weaving, Finishing and Printing (3rd Rev.Edn.) 1725/- 150
- The Complete Technology Book on Textile Processing with Effluent Treatment..... 1000/- 100
- Modern Technology of Textile Dyes & Pigments (2nd Rev. Edn.).. 1675/- 150
- The Complete Technology Book on Dyes and Dye Intermediates (2nd Rev. Edn.)..... 1995/- 200
- The Complete Book on Natural Dyes & Pigments..... 1100/- 125
- Handbook on Natural Dyes for Industrial Applications (Extraction of Dyestuff from flowers, Leaves, Vegetables) 2nd Rev. Edn..... 1575/- 150
- Natural Fibers Handbook with Cultivation & Uses..... 1275/- 125
- Woollen Spinning, Weaving, Knitting, Dyeing, Bleaching and Printing Technology Handbook 1100/- 125
- Handbook on Textile Auxiliaries, Dyes and Dye Intermediates Technology 1575/- 150
- The Complete Book on Textile Processing and Silk Reeling Technology 1750/- 150
- A Concise Guide on Textile Dyes, Pigments and Dye Intermediates with Textile Printing Technology..... 1675/- 150

ELECTROPLATING, ANODIZING & METAL TREATMENT, POWDER COATING AND METAL FINISHING

- Electroplating, Anodizing & Metal Treatment Handbook 1475/- 150
- The Complete Technology Book on Electroplating, Phosphating, Powder Coating and Metal Finishing (2nd Rev. Edn.)..... 1675/- 150
- Handbook on Electroplating with Manufacture of Electrochemicals 1695/- 150

RUBBER PROCESSING, RUBBER CHEMICALS AND COMPOUNDING

- The Complete Book on Rubber Processing and Compounding Technology (Rubber Vulcanization, Compounding, Rubber Gloves, Condoms, Rubber Band, Latex Mattress, Bushings, Gasket, Sheets, Tyre, Hoses, Conveyor Belt, Latex and Foam Rubber, Silicone Rubber, Reclaimed Rubber, Waste Tyre Recycling with Manufacturing Process, Machinery Equipment Details and Factory Layout) (3rd Revised Edition) 2275/- 200
- The Complete Book on Rubber Chemicals..... 1575/- 150
- Handbook on Rubber and Allied Products (with Project Profiles) #..... 2295/- 200

SURFACE COATING, PAINTS, VARNISHES & LACQUERS

- The Complete Book on Resins (Alkyd, Amino, Phenolic, Polyurethane Epoxy, Silicone, Acrylic) Paints, Varnishes, Pigments & Additives (Surface Coating Products with Formulae) 3rd Rev. Edn. 2275/- 200
- Paints, Pigments, Varnishes and Enamels Technology Handbook (With Process & Formulations) 2nd Rev. Edn. 1675/- 150
- Modern Technology of Paints, Varnishes & Lacquers (3rd Edn.) 2200/- 200
- Handbook on Paints and Enamels..... 1275/- 125
- Surface Coating Technology Handbook 1475/- 125
- Spirit Varnishes Technology Handbook (with Testing and Analysis) ..1275/- 150
- The Testing Manual of Paints, Varnishes and Resins..... 1875/- 150
- Handbook on Paint Testing Methods 1575/- 150
- Manufacture of Thinners & Solvents (Properties, Uses, Production, Formulation with Machinery Details) 2nd Edn. Rev..... 1875/- 150
- Manufacture of Paint Varnish & Allied Products (Industrial Paint, N.C. Thinner, Paint Industry, Infrared Reflected (IR) Paint, High Temperature Aluminium Based Paint, Paint Drier, Powder Coating Paint, Latex Paints for Roof) 3rd Edition # 1995/- 200

GUMS, ADHESIVES & SEALANTS, ROSIN & DERIVATIVES, RESINS AND OLEORESINS

- Gums, Adhesives & Sealants Technology (with Formulae & their Applications) 2nd Rev. Edn. 1475/- 150

Limited Edition—only photostat copy available

NAME OF BOOKS

₹ / US\$

- Adhesives Formulary Handbook (Adhesives for Construction, Fabric, Packaging, Paper, Film, Flocking, Foam, Water-Based, Oil-Based, Corrugation, Labelling, Hot Melt Adhesives, Pressure Sensitive Adhesives, Hot Melt Coatings, Grouting Compounds, Epoxy Adhesives, Caulking, Cement, Concrete and Plaster Patching Compounds, Glazing Compounds, Joint Cements, Mastics, Putties, Sealants, Solders with Machinery Equipment Details & Factory Layout) 1895/- 150
- Handbook on Speciality Gums, Adhesives, Oils, Rosin & Derivatives, Resins, Oleoresins, Katha, Chemicals with Other Natural Products 2175/- 150
- The Complete Book on Adhesives, Glues & Resins Technology (with Process & Formulations) 2nd Rev. Edn. 1675/- 150
- The Complete Technology Book on Industrial Adhesives..... 1675/- 150
- The Complete Book on Water Soluble Gums and Resins 1675/- 150

SYNTHETIC, ALKYD, EPOXY AND PHENOLIC RESINS

- Modern Technology of Synthetic Resins & Their Applications (2nd Revised Edition)..... 1575/- 150
- Synthetic Resins Technology Handbook 1100/- 125
- The Complete Technology Book on Synthetic Resins with Formulae & Processes 1150/- 125
- Alkyd Resins Technology Handbook..... 1100/- 125
- Epoxy Resins Technology Handbook (Synthesis, Epoxy Resin Adhesives, Epoxy Coatings) with Manufacturing Process and Machinery Equipment Details (3rd Revised Edition)..... 2275/- 200
- Phenolic Resins Technology Handbook (2nd Revised Edition) 1895/- 150

PETROLEUM, GREASES, PETROCHEMICALS, LUBRICANTS

- Modern Technology of Petroleum, Greases, Lubricants & Petrochemicals (Lubricating Oils, Cutting Oil, Additives, Refining, Bitumen, Waxes with Process and Formulations) 3rd Rev. Edn. .. 1995/- 150
- The Complete Book On Distillation And Refining of Petroleum Products (Lubricants, Waxes And Petrochemicals) 975/- 100
- Lubricating Oils, Greases and Petroleum Products Manufacturing Handbook..... 1475/- 150
- Manufacturing of Petroleum Products (Petroleum Waxes, Greases and Solid Lubricants, Solid Fuels, Gaseous Fuels, Gasoline, Diesel Fuel Oils, Automotive, Diesel and Aviation Fuels, Lubricating Oils and Lubricating Greases)..... 1675/- 150
- Petroleum & Petroleum Products Technology Handbook (Thermal Cracking of Pure Saturated Hydrocarbons, Petroleum Asphalts, Refinery Products, Blending and Compounding, Oil Refining and Residual Fuel Oils)..... 1875/- 150

WASTE MANAGEMENT, PRODUCTS FROM WASTE, MEDICAL, MUNICIPAL WASTE, E-WASTE, BIOMASS, MEDICAL & SURGICAL DISPOSABLE PRODUCTS

- Products from Waste (Industrial & Agro Waste) 2nd Edition ... 975/- 100
- Modern Technology of Waste Management: Pollution Control, Recycling, Treatment & Utilization 975/- 100
- Handbook on Recycling & Disposal of –Hospital Waste Municipal, –Solid Waste, –Biomedical Waste, –Plastic Waste..... 1275/- 125
- Water and Air Effluents Treatment Handbook..... 1275/- 125
- The Complete Guide on Industrial Pollution Control 1275/- 125
- The Complete Book on Managing Food Processing Industry Waste ... 1275/- 125
- Handbook on Organic Waste for Biological Treatment, Liquid Manure into a Solid, Tomato Waste Water Treatment, Oxalic Acid from Jute Stick, Cotton Processing Waste, Fish Waste, Agro-Industrial Wastes, Bioconversion of Pretreated Wheat Straw and Sunflower Stalks to Ethanol, Agricultural Waste Treatment, Waste of Dehydrated Onion, Beef-Cattle Manure Slurry, Meat Meal and Algae for Calves, Wastes from Large Piggeries, Pig Waste, Oxytetracycline, Methane from Cattle Waste 1275/- 125
- Handbook on Medical and Surgical Disposable Products (Blood Bags, Plastic Gloves, I.V. Cannula, Infusion Set, Gowns, Masks, Catheter, Cotton and Bandage, Surgical Wear, Syringes) 1775/- 150
- Disposable Products Manufacturing Handbook (Plastic Cups, Cutlery, Paper Cups, Banana Leaf Plates, Facial Tissues, Wet Wipes, Toilet Paper Roll, Sanitary Napkins, Baby Diapers, Thermocol Products, PET Bottles)..... 1575/- 150
- The Complete Book on Biomass Based Products (Biochemicals, Biofuels, Activated Carbon) 1575/- 150
- The Complete Technology Book on E-Waste Recycling (Printed Circuit Board, LCD, Cell Phone, Battery, Computers) 3rd Rev. Edn.1975/- 150
- The Complete Book on Waste Treatment Technologies (Industrial, Biomedical, Water, Electronic, Municipal, Household/ Kitchen, Farm Animal, Dairy, Poultry, Meat, Fish & Sea Food Industry Waste and Machinery Equipment Details) 2nd Revised Edition 2095/- 200
- Manufacture of Value Added Products from Rice Husk (Hull) and Rice Husk Ash (RHA) (Precipitated Silica, Activated Carbon, Cement, Electricity, Ethanol, Hardboard, Oxalic Acid, Paper, Particle Board, Rice Husk Briquettes, Rice Husk Pellet, Silicon, Sodium Silicate Projects) 2nd Rev. Edition..... 1400/- 150
- Medical, Municipal and Plastic Waste Management Handbook..... 1275/- 125

NAME OF BOOKS

₹ / US\$

- The Complete Book on Biological Waste Treatment and their Utilization 1675/- 150

INFRASTRUCTURE, HOSPITALITY, MEDICAL, ENTERTAINMENT, WAREHOUSING, EDUCATION BUSINESS & REAL ESTATE PROJECTS

- Investment Opportunities in Infrastructure Projects # 2500/- 225
- Investment Opportunities In Hospitality, Medical, Entertainment, Ware Housing & Real Estate Projects (with 15 Project Profiles)# 4408/- 350
- How to Start Profitable Education Business (12 Detailed Project Profiles) (Engineering, Dental, ITI, Management, Marine Engineering, Medical, Pharmacy, Polytechnic College and Schools) 2nd Revised Edition # 2295/- 200

WOOD AND ITS DERIVATIVES, BAMBOO PLANTATION

- The Complete Technology Book on Wood and Its Derivatives 1100/- 125
- Bamboo Plantation and Utilization Handbook 1475/- 150

HERBAL PRODUCTS, AYURVEDIC, HERBAL & UNANI MEDICINES, DRUGS, NEEM, HERBS & MEDICINAL PLANTS CULTIVATION, COSMETICS, NATURAL PRODUCTS, JATROPHA

- Handbook on Unani Medicines with Formulae, Processes, Uses and Analysis (2nd Revised Edition) 1695/- 150
- Handbook on Herbal Drugs And Its Plant Sources 1000/- 100
- Herbal Foods And Its Medicinal Values 1275/- 125
- Herbal Cosmetics & Ayurvedic Medicines (Eou) (3rd Rev. Edn.).. 1475/- 150
- Handbook on Ayurvedic Medicines with Formulae, rocesses & Their Uses (2nd Rev. Edn.)..... 1475/- 150
- Herbal Cosmetics Handbook (Formulae, Manufacturing Processes with Machinery & Equipment Details (4th Rev. Edn.). 1775/- 150
- The Complete Technology Book on Herbal Beauty Products (Cosmetic Industry) with Formulations, Manufacturing Process, Machinery Equipment Details & Plant Layout (3rd Revised Edition) 1750/- 150
- Modern Technology of Cosmetics 1100/- 100
- Handbook of Herbal Products (Medicines, Cosmetics, Toiletries, Perfumes) 2 Vols. 1500/- 220
- Herbs Cultivation & Medicinal Uses..... 975/- 100
- Herbs Cultivation & Their Utilization..... 800/- 100
- Medicinal Plants Cultivation & Their Uses..... 975/- 100
- Compendium of Medicinal Plants..... 875/- 100
- Compendium of Herbal Plants..... 975/- 100
- Cultivation And Processing of Selected Medicinal Plants..... 1175/- 125
- Aromatic Plants Cultivation, Processing and Uses 975/- 100
- Cultivation and Utilization of Aromatic Plants..... 1100/- 125
- The Complete Book on Jatropha (Bio-Diesel) with Ashwagandha, Stevia, Brahmi & Jatamansi Herbs (Cultivation, Processing & Uses)..... 1500/- 150
- Handbook on Medicinal Herbs With Uses..... 1075/- 125
- Aloe Vera Handbook Cultivation, Research Findings, Products, Formulations, Extraction & Processing 1275/- 125
- Handbook on Herbs Cultivation & Processing 875/- 100
- Handbook of Neem & Allied Products 975/- 100
- Handbook on Herbal Medicines (Ayurveda Cream, Oil, Pain Balm, Tablet, Herbal Capsules, Churna, Syrup, Medicines with Composition, Rasa Preparations with Production Process, Machinery, Equipment Details and Factory Layout) 2nd edition..... 1675/- 150
- Handbook on Cosmetics (Processes, Formulae with Testing Methods)..... 1675/- 150
- Handbook on Drugs from Natural Sources 1175/- 125

ESSENTIAL OILS, AROMATIC CHEMICALS, PERFUMES, FLAVOURS, FOOD COLOURS

- The Complete Technology Book of Essential Oils (Aromatic Chemicals (Reprint 2011))..... 1275/- 125
- Essential Oil Hand Book..... 975/- 100
- The Complete Technology Book on Herbal Perfumes & Cosmetics (2nd Rev Edn.)..... 1275/- 125
- Modern Technology of Perfumes, Flavours and Essential Oils 2nd Edn. 975/- 100
- Food Colours, Flavours And Additives Technology Handbook (2nd Revised Edition) 1895/- 150
- Food Flavours Technology Handbook..... 1075/- 125
- The Complete Technology Book on Flavours, Fragrances and Perfumes..... 1675/- 150
- Perfumes and Flavours Technology Handbook with Manufacturing Formulations, Process, Machinery Equipment Details & Factory Layout (2nd Edition) 1995/- 200
- Handbook on Perfume, Deodorant, Air Freshener, Body Spray, Fragrances, Flavours and Essential Oil Industry with Manufacturing Formulations, Process, Machinery Equipment Details & Factory Layout..... 1775/- 150

Limited Edition-only photostat copy available

NAME OF BOOKS

₹ / US\$

SOAPS, DETERGENTS, ACID SLURRY, TOILETRIES & DISINFECTANTS

- Modern Technology of Soaps, Detergents & Toiletries (With Formulae & Project Profiles) (4th Rev. Edn.)..... 1275/- 125
- Herbal Soaps & Detergents Handbook 1275/- 125
- Handbook on Soaps, Detergents & Acid Slurry (3rd Rev. Edn.) ... 1575/- 150
- The Complete Technology Book on Detergents (2nd Rev. Edn.).. 1100/- 125
- The Complete Technology Book on Soaps (2nd Revised Edn.) 1425/- 150
- Surfactants, Disinfectants, Cleaners, Toiletries, Personal Care Products Manufacturing and Formulations (Phenyl, Naphthalene Ball, Mosquito Coil, Floor Cleaner, Glass Cleaner, Toilet Cleaner, Utensil Cleaning Bar, Liquid Detergent, Detergent Powder, Detergent Soap, Liquid Soap, Handwash, Hand Sanitizer, Herbal Shampoo, Henna Based Hair Dye, Herbal Cream, Shaving Cream, Air Freshener, Shoe Polish, Tooth Paste) 3rd Revised Edition 1895/- 200
- Soaps, Detergents and Disinfectants Technology Handbook (Washing Soap, Laundry Soap, Handmade Soap, Detergent Soap, Liquid Soap, Hand Wash, Liquid Detergent, Detergent Powder, Bar, Phenyl, Floor Cleaner, Toilet Cleaner, Mosquito Coils, Naphthalene Balls, Air Freshener, Hand Sanitizer and Aerosols Insecticide) (3rd Revised Edition)..... 1595/- 150

GLASS, CERAMICS, COAL, LIGNIN, RARE EARTH & MINERALS

- The Complete Book on Glass & Ceramics Technology (2nd Revised Edition)..... 1495/- 150
- The Complete Book on Glass Technology..... 1625/- 150
- The Complete Technology Book on Minerals & Mineral Processing..... 2200/- 200
- Handbook on Rare Earth Metals and Alloys (Properties, Extraction, Preparation and Applications)..... 1875/- 150
- Hand book on Coal, Coke, Cotton, Lignin, Hemicellulose, Wood, Wood-Polymer Composites, Lignocellulosic-Plastic Composites from Recycled Materials, Wood Fiber, Rosin and Rosin Derivatives 1875/- 150

ALUMINIUM, STEEL, FERROUS, NON-FERROUS METALS WITH CASTING AND FORGING, FERROALLOYS & AUTOMOBILE COMPONENTS

- The Complete Technology Book on Hot Rolling of Steel 1575/- 150
- Steel Rolling Technology Handbook (2nd Revised Edition) 1775/- 150
- The Complete Book on Ferrous, Non-Ferrous Metals with Casting and Forging Technology..... 1575/- 150
- The Complete Technology Book on Aluminium and Aluminium Products 1450/- 150
- The Complete Technology Book on Steel and Steel Products (Fasteners, Seamless Tubes, Casting, Rolling of flat Products & others)..... 1625/- 150
- The Complete Book on Ferroalloys (Ferro Manganese, Ferro Molybdenum, Ferro Niobium, Ferro Boron, Ferro Titanium, Ferro Tungsten, Ferro Silicon, Ferro Nickel, Ferro Chrome)..... 2775/- 250
- Steel and Iron Handbook..... 1775/- 150
- Handbook on Steel Bars, Wires, Tubes, Pipes, S.S. Sheets Production with Ferrous Metal Casting & Processing 1775/- 150
- The Complete Book on Production of Automobile Components & Allied Products (Engine Parts, Piston, Pin, Piston Ring, Valve, Control Cable, Engine Mounting, Auto Lock, Disc Brake, Drum, Gear, Leaf Spring, Shock Absorber, Silencer, Chain, Cylinder Block, Chassis, Battery, Tyre & Flaps) 2275/- 200
- Handbook on Automobile & Allied Products (2nd Rev. Edn.) # 1495/- 150

FORMULARY (FORMULATION) BOOKS

- Selected Formulary Book on Cosmetics, Drugs, Cleaners, Soaps and Detergents (2nd Revised Edition)..... 1475/- 150
- Selected Formulary Book on Inks, Paints, Lacquers, Varnishes and Enamels 1475/- 150
- Selected Formulary Handbook..... 1475/- 150
- Selected Formulary Book on Petroleum, Lubricants, Fats, Polishes, Glass, Ceramics, Nitrogenous Fertilizers, Emulsions, Leather and Insecticides..... 2275/- 200

CONSTRUCTION MATERIALS, CEMENT, BRICKS, ASBESTOS

- The Complete Book on Construction Materials 1475/- 150
- The Complete Technology Book on Bricks, Cement and Asbestos ... 1400/- 150
- The Complete Technology Book on Asbestos, Cement, Ceramics and Limestone..... 1875/- 150
- Handbook on Gypsum and Gypsum based Products (Mining, Processing, Transportation, Handling & Storage, Gypsum Board, Plaster of Paris with Machinery & Equipment Details) 2275/- 200
- The Complete Book on Cement & Concrete Products Manufacturing (AAC Blocks, Slag & High Alumina Cement, Clinker, Concrete Block, Floor Slab, Roof Tiles, Interlocking Paving Blocks, Fly Ash Bricks, Flooring Tiles, Precast RCC Wall, Prestressed Concrete Beams, Poles, Pipe, Sleeper, RCC Beam, Ready Mix Concrete and Wall Putty with Manufacturing Process, Machinery Equipment Details and Factory Layouts)..... 1975/- 150

EMULSIFIERS, OLEORESINS AND TALL OIL

- The Complete Book on Emulsifiers with Uses, Formulae and Processes. (2nd Rev. Edn.) 1400/- 150
- Handbook on Oleoresin and Pine Chemicals (Rosin, Terpene, Derivatives, Tall Oil, Resin & Dimer Acids..... 2200/- 200
- Handbook on Tall Oil Rosin Production, Processing and Utilization 1575/- 150

COLD STORAGE, COLD CHAIN & WAREHOUSE

- The Complete Book on Cold Storage, Cold Chain & Warehouse (with Controlled Atmosphere Storage & Rural Godowns) 5th Rev.Edn. 1650/- 150

BATTERY ASSEMBLING AND RECYCLING

- Handbook on Production, Recycling of Lithium Ion and Lead-Acid Batteries (with Manufacturing Process, Machinery Equipment Details & Plant Layout) 2995/- 250

RENEWABLE ENERGY AND SOLAR PRODUCTS

- Solar PV Power and Solar Products Handbook (Solar Energy, Solar Lighting, Solar Power Plant, Solar Panel Solar Pump, Solar Photovoltaic Cell, Solar Inverter, Solar Thermal Power Plant, Solar Farm, Solar Cell Modules with Manufacturing Process, Equipment Details, Plant Layout & Process Flow Chart) 2275/- 200

ELECTRIC VEHICLES MANURING, E- CAR, ELECTRIC BICYCLE, E- SCOOTER, E-MOTORCYCLE, ELECTRIC RICKSHAW, E- BUS, ELECTRIC TRUCK, E MOBILITY, EV INDUSTRY, AUTOMOBILE, LIGHT ELECTRIC VEHICLES, ELECTRIC VEHICLE INDUSTRY

- Handbook on Electric Vehicles Manufacturing (E- Car, Electric Bicycle, E- Scooter, E-Motorcycle, Electric Rickshaw, E- Bus, Electric Truck with Assembly Process Machinery Equipments & Layout) 3695/- 250

Limited Edition-only photostat copy available

ELECTRICAL CABLE, WIRE AND WIRE PRODUCTS

- Manufacture of Electrical Cables, Wire and Wire Products Handbook (Copper Wire, Barbed Wire, Spring, Wire Nail, Wire Mesh, Fiber-Optic Cable, PVC Wire and Cable, Aluminum Wire, Steel Wire Rope, Galvanised Wire, Coaxial Cable, Litang Cable LAN/Ethernet Cable, Power Cord Cable, Submersible Cable, XLPE Cable with Machinery Equipment Details & Factory Layout) 2575/- 225

ALCOHOLIC, NON-ALCOHOLIC, BEVERAGES, WINE & INDUSTRIAL ALCOHOL

- The Complete Technology Book on Alcoholic and Non- Alcoholic Beverages (Fruit Juices, Sugarcane Juice, Whisky, Beer, Microbrewery, Rum and Wine) 2nd Revised Edition 2275/- 200
- The Complete Book on Wine Production 2275/- 200
- Industrial Alcohol Technology Handbook 1675/- 150
- Manufacture of Food & Beverages (2nd Edn.) # 1895/- 150

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India).

Tel. : 91-11- 23843955, 23845886

Mob.: + 91-9097075054, 8800733955

Website : www.niir.org www.entrepreneurindia.co

E-mail : info@niir.org , npcs.india@gmail.com

Lab Cultured Diamonds are real diamonds created from a laboratory environment. They are identical in their physical, chemical and optical properties to naturally-occurring diamonds. Lab Cultured Diamonds are created by placing graphite under high pressure and temperature and allowing the graphite to transform into diamonds. This process takes place in a laboratory, instead of occurring naturally in the Earth's crust.

Process of Lab Cultured Diamonds from graphite

The process of transforming graphite into diamonds is called chemical vapor deposition (CVD). The process involves a special machine that breaks down the graphite atoms and bonds them together to form a diamond structure. The resulting product is chemically and physically identical to diamonds created by nature. Lab Cultured Diamonds are cut, polished and graded in the same way as natural diamonds. They are available in all the usual cuts, colors and clarity grades. These stones are available in various sizes and carat weights, and can be set in any type of jewelry setting.

Benefits of Starting Lab Cultured Diamonds Business

Starting a business in Lab Cultured Diamonds offers many advantages over traditional diamond mining. LCDs don't require mining, so there's no

A Business Plan for Lab Cultured Diamonds from Graphite

need to disrupt ecosystems or risk worker safety. Furthermore, they are produced quickly and on demand with consistent quality, meaning that companies can be confident in their product's reliability. Additionally, there is no need for expensive certification processes for these diamonds, making

PROJECT COST ESTIMATE

CAPACITY

Lab Cultured Diamonds (1 Carat)	: 30 Carat Per Day
Plant & Machinery	: ₹ 200 Lakhs
Cost of Project	: ₹ 361 Lakhs
Rate of Return	: 25 %
Break Even Point	: 57 %

them an attractive choice for customers looking for an affordable alternative to traditional diamonds.

Market outlook

According to a report by Allied Market Research, the global lab-grown diamond market size was valued at \$16.2 billion in 2019 and is expected to reach \$29.8 billion by 2027, growing at a compound annual growth rate of 7.8% from 2020 to 2027. This growth is driven by increased consumer demand for sustainable and ethically-sourced diamonds, as well as advancements in diamond-growing technology that have made lab-grown diamonds more affordable and accessible.

Overall, the lab-grown diamond industry has a bright future and is expected to continue to grow as consumers become more conscious of the environmental and ethical impacts of their purchases, and as technology continues to improve the quality and affordability of lab-grown diamonds.

Conclusion

Starting a business in Lab Cultured Diamonds provides entrepreneurs with the opportunity to be part of a growing and innovative industry. As more people become aware of this technology and its advantages, the demand for LCDs is likely to increase, giving entrepreneurs the chance to capitalize on this emerging trend.

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

SELECTED BUSINESS IDEAS FOR RIGHT INVESTMENT

EACH DETAILED PROJECT REPORT (BUSINESS PLAN) CONTAINS



BEGINNING : Project Introduction, Brief History of the Product, Properties, BIS (Bureau of Indian Standard) Specifications & Requirements, Uses & Applications.

MARKET SURVEY : Present Market Position, Expected Future Demand, Statistics of Imports & Exports, Export Prospect, Names and Addresses of Existing Units (Present Manufactures).

PLANT & MACHINERY : List of Plant & Machineries, Miscellaneous Items and Accessories, Instruments, Laboratory Equipments and Accessories, Plant Location, Electrification, Electric Load and Water, Maintenance, Suppliers/Manufacturers of Plant and Machineries.

RAW MATERIAL : List of Raw Materials, Properties of Raw Materials, Availability of Raw Materials, Required Quality of Raw Materials, Cost/Rates of Raw Materials.

MANUFACTURING TECHNIQUES : Formulae Detailed Process of Manufacture, Flow Sheet Diagram.

PERSONNEL REQUIREMENTS : Requirement of Staff & Labour, Personnel Management, Skilled & Unskilled Labour.

LAND & BUILDING : Requirement of Land Area, Rates of the Land, Built up Area, Construction Schedule, Plant Layout.

FINANCIAL ASPECTS : Cost of Raw Materials, Cost of Land & Building, Cost of Plant & Machineries, Fixed Capital Investment, Working Capital, Project Cost, Capital Formation, Cost of Production, Profitability Analysis, Break Even Point, Cash Flow Statement for 5 to 10 Years, Depreciation Chart, Conclusion, Projected Balance Sheet, Land Man Ratio.

- Prepared by highly qualified and experienced consultants and Market Research and Analyst Supported by a panel of experts and computerised data bank.
- Data provided are reliable and upto date collected from suppliers/manufacturers, plants already commissioned in India.
- NPCS Reports are very economical and immediately available on demand where as commissioned Feasibility Studies are time consuming and costly.

**FOR ASSESSING MARKET
POTENTIAL, INVESTMENT
DECISION MAKING
CORPORATE
DIVERSIFICATION
PLANNING ETC.**

NPCS Engineers and Consultants have prepared Market Survey Cum Detailed Techno Economic Feasibility Report on the following products which are most viable and profitable.

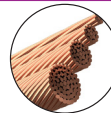
Business Ideas: 2.5–3 Crore (Plant and Machinery) : Selected Project Profiles for Entrepreneurs, Startups



- » 3-chloropivaloyl Chloride
- » 4 Star Hotel
- » Nicotine from Tobacco Waste
- » Active Zinc Oxide from Zinc Ash, Secondary Zinc Waste & EAF Dust
- » Agricultural Warehouse with Cold Storage
- » Aluminium Extrusion Plant
- » Arabic Gum
- » Automated Vehicle Scrapping and Recycling Unit
- » Baker's Yeast
- » Beer Plant
- » Bentonite Processing
- » Bicycle Manufacturing
- » Biodegradable Plastic Bags from Corn Starch



- » Calcium Bromide
- » Catenary Wires and Conductors Used in Railway Electrification
- » Chocolate
- » Cold Storage (Shrimp & Agricultural Products)
- » Dairy Farming & Dairy Products (Milk, Butter, Ghee & Paneer)
- » Dairy Farming & Dairy Products (Pasteurised Milk & Curd)
- » Dairy Farming (500 Cows)
- » Disposable Nitrile Gloves (Nitrile Examination Hand Gloves)
- » Electric PCC Poles
- » Extraction of Essential Oil from Black Pepper
- » Flexographic Printing



- » Gold and Diamond Jewellery
- » Grapes Packing for Exports with 100 MT Cold Storage
- » Graphite Crucible
- » Hexamethoxymethyl Melamine Resin (HMMM)
- » Hot and Cold Fusion of Glass
- » I.V. Fluids (BFS Technology)
- » Industrial and Pharmaceutical Grade Starch from Cassava, Maize and Tacca Roots
- » IV Fluids (BFS Technology)
- » Lithium Ion Battery(Lifepo4) Business Plan
- » Low Carbon Ferro Manganese (Medium Grade)
- » Lucrative Business Plan for Calcium Sennosides from Senna Leaves Production
- » Maize Starch and Its By Products



Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

SELECTED BUSINESS IDEAS FOR RIGHT INVESTMENT

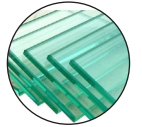
- » Manufacturing Business of Blood Bags
- » Gold and Diamond Jewellery
- » Needles for Sewing and Embroidery Machine
- » Oxygen Gas Plant (Medical Grade)
- » Pet Polyester Acoustic Panel
- » Phosphate Rich Organic Manure (PROM)
- » Ply Board from Poplar & Eucalyptus Wooden Logs
- » Precipitated Silica from Rice Husk Ash
- » Blood Collection Tubes (Vacutainer)
- » Latex & Nitrile Gloves
- » Soft Gelatin Capsules (Softgel Capsules)
- » Magnesium Sulphate



- » PVC/HDPE Pipes (Irrigation, Drinking Water, Agriculture and Sewerage)
- » Red Oxide Primer from Mill Scale
- » Roller Flour Mill with Packaging (Automatic Plant)
- » Saline and Dextrose Fluid (IV Fluid) BFS Technology
- » Sanitary Napkins
- » Sesame Seed Hulling Plant
- » Automated Vehicle Scrapping Unit
- » Auto Brake Pad and Auto Brake Shoe
- » Silicon Metal
- » Skill Development Centre
- » Sodium and Ammonium Molybdate
- » Sodium Hydrosulphite Manufacturing Business



- » Soft Gelatin Capsules
- » Solar Panel
- » Stable Bleaching Powder
- » Bamboo Fiber & Yarn
- » Active Pharmaceutical Ingredients
 - Metformin • Amoxicillin • Ibuprofen
 - Paracetamol
- » Printed Circuit Board (PCBS)
- » Mica Powder from Mica Deposits
- » Ready Mix Plaster, Block Jointer, Tile Adhesive and M 20 Concrete (Micro Concrete)
- » TMT Bars
- » Toughened Glass
- » Yeast from Molasses
- » Zinc Sulphate Monohydrate (Agriculture & Food Grade)



Start Investing in Fastest Growing Industries

In the dynamic world of industrial applications, Butyl Rubber, also known as Polyisobutylene Rubber, stands out as a critical material due to its unique properties and diverse applications. This synthetic rubber offers excellent impermeability to gases, resistance to chemicals, and stability over a broad temperature range, making it an ideal choice for various sectors including automotive, construction, and pharmaceuticals. For startups and entrepreneurs looking to invest in a promising manufacturing industry, Butyl Rubber presents a compelling opportunity.

Why Startups Should Consider Butyl Rubber Manufacturing

1. Growing Market Demand: The global market for Butyl Rubber is on an upward trajectory, driven by its crucial role in numerous industries. It is extensively used in the manufacturing of inner tubes for tires, sealants, adhesives, and even in medical products such as stoppers and seals for glass vials, which have seen a surge in demand due to healthcare advancements.

2. Diverse Applications: Entrepreneurs can tap into various industries due to the versatility of Butyl Rubber. Its ability to function in extreme conditions makes it indispensable in sectors that require durable and long-lasting materials.

3. Export Potential: With its broad range of applications, Butyl Rubber has significant export potential. Countries leading in automotive and pharmaceutical industries are consistently on the lookout for high-quality Butyl Rubber, providing lucrative opportunities for manufacturers to expand their market reach globally.

Market Overview and Trends

The Butyl Rubber market has been expanding steadily, with a projected continuous growth in the coming years. This growth is fueled by the increasing demand in the automotive industry for tires and vibration dampening components and the construction sector for roofing and sealants. Moreover, advancements in pharmaceutical packaging are pushing the demand for high-purity

Introduction to Butyl Rubber (Polyisobutylene Rubber) Manufacturing

Butyl Rubber. The trend towards more sustainable materials and the development of improved Butyl Rubber variants for better performance are shaping the future of this industry.

Investment Justification for Entrepreneurs

Investing in Butyl Rubber manufacturing is strategically advantageous for several reasons:

- **High Profitability Potential:** The high demand across various industries leads to significant profitability potential for manufacturers.
- **Technological Advancements:** Continuous improvements in production processes allow for more efficient and cost-effective manufacturing.
- **Regulatory Support:** Many governments offer incentives for the production of industrial rubbers, which can reduce startup costs and increase competitiveness.

Manufacturing Process of Butyl Rubber

The manufacturing of Butyl Rubber involves several critical steps:

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 5010 MT Per Annum
Cost of Plant & Machinery	: ₹ 6.42 Cr.
Cost of Project	: ₹ 12.74 Cr.
Rate of Return	: 28%
Break Even Point (B.E.P)	: 59%

1. Polymerization: The process starts with the polymerization of isobutylene with a small amount of isoprene. This step is usually carried out in a solution using a catalyst like aluminum chloride at low temperatures.

2. Compounding: The polymer is then compounded with additives and fillers to enhance its properties according to its intended applications.

3. Molding and Curing: The compounded material is shaped and cured (vulcanized), which cross-links the polymer chains to form an elastic and durable rubber.

List of Machinery for Butyl Rubber Manufacturing

To set up a Butyl Rubber manufacturing facility, the following machinery is essential:

- **Polymerization Reactors:** Specialized reactors capable of maintaining low temperatures necessary for the polymerization process.
- **Mixers and Blenders:** For compounding the polymer with various additives and fillers.
- **Extruders:** To shape the rubber into desired forms.
- **Curing Presses:** For the vulcanization process, which solidifies and strengthens the rubber.
- **Cutting and Finishing Equipment:** To provide the final shapes and surface finishes to the products.

Conclusion

For startups and entrepreneurs aiming to enter a growth-oriented industry, Butyl Rubber manufacturing offers a robust business opportunity. With its broad application spectrum, continuous market growth, and significant export potential, this industry promises substantial returns on investment. As industries worldwide continue to seek out versatile and durable materials, the demand for Butyl Rubber is expected to soar, making it a wise choice for new business ventures. Entrepreneurs can capitalize on this trend by establishing a manufacturing unit equipped with the right technology and machinery, poised to meet global standards and demands.

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

Introduction to Nicotine Powder Manufacturing

Nicotine powder manufacturing from tobacco leaves presents a lucrative opportunity for startups and entrepreneurs looking to make a mark in a niche yet expanding industry. As global health trends pivot towards smoking cessation, the demand for nicotine in alternative forms like patches, gums, and e-cigarettes is on the rise. This shift offers a promising venture for innovative businesses.

Why Startups Should Consider This Industry

1. Growing Market Demand: Nicotine is primarily used in medical applications to help with smoking cessation. The global movement towards healthier lifestyles has amplified the demand for nicotine alternatives. By tapping into this market, startups can cater to a significant demographic looking to quit smoking.

2. Expansion into Health and Wellness: Entrepreneurs can also explore opportunities in health and wellness sectors by producing nicotine products that support smoking cessation programs. This is not only socially responsible but also economically advantageous as governments and health organizations actively promote anti-smoking campaigns.

3. Technological Advancements: Recent technological advancements in extraction and processing allow manufacturers to produce high-purity nicotine powder more efficiently than ever. This reduction in production costs creates a more accessible entry point for startups.

Market Size, Share, Trends, and Analysis

The global nicotine market is projected to grow significantly, driven by increasing health awareness and the rising adoption of smoking cessation products. According to industry analysts, the nicotine market is expected to expand at a compound annual growth rate (CAGR) of over 6% in the next five years. North America and Europe are currently the largest markets due to their stringent

Unveiling Opportunities in Nicotine Powder from Tobacco Leaves

anti-smoking policies. However, Asia-Pacific is emerging as a fast-growing market with increasing health consciousness among its population.

Export Potential and Market Overview

The export potential for nicotine powder is substantial, especially in regions where local production is non-existent or insufficient to meet demand. Countries like the United States, Canada, and Germany offer promising markets for high-quality nicotine powder used in pharmaceuticals and cessation products. By positioning themselves as premium suppliers, startups can capture significant market shares in these countries.

List of Machinery for Nicotine Powder Manufacturing

The production of nicotine powder from tobacco leaves involves several critical pieces of machinery. Here is a comprehensive list:

- **Tobacco Leaf Cutter:** To chop leaves into smaller pieces for easier processing.
- **Extraction Tanks:** Large vessels where the nicotine is extracted using solvents.
- **Evaporators:** Used to concentrate the nicotine extract by removing solvents.
- **Spray Dryers:** For converting concentrated nicotine into powder form.
- **Sieving Machine:** To ensure uniformity in powder size.
- **Packaging Machine:** For airtight and safe packaging of the final product.

Manufacturing Process Overview

1. Leaf Preparation: Tobacco leaves are first

cured and then cut into small pieces to increase the surface area for extraction.

2. Solvent Extraction: The cut leaves are subjected to solvent extraction, where nicotine is dissolved into organic solvents like ethanol.

3. Evaporation: The nicotine-rich solution is then concentrated using evaporators to remove excess solvent.

4. Spray Drying: The concentrated nicotine extract is fed into a spray dryer, where it is transformed into fine powder through rapid drying with hot air.

5. Packaging: Finally, the nicotine powder is sieved to ensure particle size uniformity and hygienically packaged.

Conclusion

The nicotine powder manufacturing industry holds substantial promise for startups and entrepreneurs. With a solid market demand, favorable growth trends, and significant export potential, this industry provides a viable and profitable venture for those looking to innovate and capitalize on emerging market needs. The relatively straightforward manufacturing process, coupled with the availability of advanced machinery, allows for a scalable business model that can adjust to market demands and opportunities swiftly. This is an optimal time for enterprising individuals to explore this dynamic market and establish a foothold in the lucrative world of nicotine products.

PROJECT COST ESTIMATE

CAPACITY:

Nicotine Powder	: 400 Kg Per Day
Spent Tobacco Leaves (by-product)	: 13,000 Kg Per Day
Cost of Plant & Machinery	: ₹ 9 Cr.
Cost of Project	: ₹ 20.33 Cr.
Rate of Return	: 26%
Break Even Point (B.E.P)	: 48%

Set Up E-Waste Recycling Plant

If you haven't noticed, there are more and more electronic devices in our lives these days. This has led to a growing demand for recycling companies like this one, which offers businesses and individuals the ability to safely dispose of their old electronics while they take advantage of the latest and greatest technological

developments available to them.

Benefits of Starting Business of E-Waste Recycling Plant

E-wastes are one of the fastest growing waste streams in the world. As more and more electronics are being made, more and more e-wastes are being disposed. This is where our recycling plant comes into play. Currently, only a small percentage of these wastes are recycled. With our recycling plant, we aim to make it so that all recyclable e-wastes can be turned into new products.

Global Market Outlook

The global e-waste management market size was valued at \$49,880 million in 2020, and is projected to reach \$143,870 million by 2028, registering a CAGR of 14.3% from 2021 to 2028.

The APAC region will spearhead the electronic waste recycling market over the forecast period.

PROJECT COST ESTIMATE

CAPACITY:

Plastic Granules	: 1,41,000 Kgs Per Annum
Glass Scrap	: 1,05,900 Kgs Per Annum
Copper Scrap	: 88,200 Kgs Per Annum
Precious Metals (Nickel, Tin & Zinc)	: 18,000 Kgs Per Annum
Gold	: 5.760 Kgs Per Annum
Silver	: 11.520 Kgs Per Annum
Palladium	: 0.288 Kgs Per Annum
Plant & Machinery	: ₹ 107 Lakhs
Cost of Project	: ₹ 336 Lakhs
Rate of Return	: 27%
Break Even Point	: 58%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

NIIR PROJECT CONSULTANCY SERVICES

AN ISO 9001:2015 CERTIFIED COMPANY

106 E, Kamla Nagar, Delhi-110 007 (India). Tel. : 91-11- 23843955 • 23845886

Mob.: +91-9097075054 • 8800733955

Website : www.niir.org • www.entrepreneurindia.co • E-mail : info@niir.org • npcs.india@gmail.com

In today's dynamic market, startups and entrepreneurs continually seek profitable and sustainable business opportunities. One such promising venture is the production of paint rollers, an essential tool in both the residential and commercial painting industry. Here, we explore why entering the paint rollers manufacturing industry is an advisable move for entrepreneurs and the potential it holds for substantial returns.

Why Paint Rollers Production is a Strategic Choice

Market Size and Trends

The global paint roller market has been witnessing steady growth, driven by the surge in construction activities and the increasing preference for DIY (do-it-yourself) home renovation projects. According to industry reports, the market is expected to continue expanding, fueled by rising urbanization and the growing global real estate sector. As more people invest in home improvements and commercial spaces require regular refurbishments, the demand for painting tools, including paint rollers, escalates.

Market Overview

Paint rollers, preferred for their ability to distribute paint quickly and evenly, are integral to modern painting projects. They are favored over traditional brushes due to their efficiency and effectiveness in covering large surface areas, which reduces labor cost and time. The market offers various types of rollers for different finishes and types of paints, including foam, microfiber, and synthetic fibers, each catering to specific consumer needs and preferences.

Investment Appeal

For startups, the paint roller manufacturing business requires relatively moderate initial investments but promises high returns due to the perennial demand. The manufacturing process is not overly complex, which allows new entrants to establish operations swiftly. Moreover, with the current trend towards eco-friendly and innovative painting solutions, startups have the opportunity

Paint Rollers Production: A Promising Venture for Startups and Entrepreneurs

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 20,000 Pcs. Per Day
Cost of Plant & Machinery	: ₹ 112 Lakhs
Cost of Project	: ₹ 245 Lakhs
Rate of Return	: 33%
Break Even Point (B.E.P)	: 65%

to differentiate themselves by offering unique products, such as eco-friendly or advanced texture rollers.

Export Potential

The international market for paint rollers presents significant opportunities. With the right business strategies, such as competitive pricing and quality assurance, startups can tap into burgeoning markets in Asia, Africa, and the Middle East, where construction activities are booming. Additionally, the rising global DIY trend further amplifies export prospects.

List of Required Machinery

To set up a paint roller manufacturing unit, entrepreneurs will need the following key pieces of equipment:

1. Fiber Blending Machine—To mix different fibers

used in the production of the roller fabric.

2. Roller Fabric Cutting Machine—For cutting the fabric to the required size.

3. Automatic Gluing Machine—To apply adhesive uniformly on the roller cores.

4. Roller Assembly Machine—For assembling the fabric onto the cores.

5. Finishing Machine—To trim and finish the edges of the roller covers.

6. Packaging Machine—For packing the rollers into boxes for shipment.

Manufacturing Process

The production of paint rollers involves several key steps:

1. Fabric Preparation: The selected fabric material (synthetic, microfiber, etc.) is blended and cut into precise sizes.

2. Core Preparation: Plastic or cardboard cores are cut and prepared to match the roller size.

3. Assembly: Fabric is manually or automatically attached to the cores using an adhesive.

4. Finishing: The rollers are then trimmed for any excess material to ensure a clean finish.

5. Quality Checking: Each batch of rollers undergoes quality checks to ensure they meet industry standards.

6. Packaging: Finally, the rollers are packaged and readied for distribution.

Conclusion

The production of paint rollers is not only a viable but also a potentially lucrative venture for startups looking to make a mark in the manufacturing industry. The constant demand driven by global construction and renovation trends combined with relatively straightforward production processes makes this industry particularly attractive. Entrepreneurs can benefit significantly by capitalizing on the expanding market share, favorable consumer trends, and export potential. As such, investing in the paint roller production industry stands as a sound strategic decision for new business entrants.

A Surgical Blade is a small and extremely sharp bladed instrument used for surgery, anatomical dissection, and podiatry. Scalpel blades are usually made of hardened and tempered steel, stainless steel, or high carbon steel.

A surgical blade is a small, extremely sharp bladed tool, which is used for a variety of purposes such as surgery and anatomical dissection. Scalpels may be of two types, single-use or disposable blades and reusable scalpel. Reusable scalpels have fixed blades that can be sharpened or may have removable single-use blades that are attached permanently. Disposable scalpels generally have a handle made of plastic with an extensible blade and only once, after which the entire instrument becomes redundant. Surgical blades are generally packed in sterile pouches.

Surgical Blade

The global surgical blades market is expected to increase growth in the years to come with the increasing number of surgeries. The growing number of geriatric population across the globe is also presumed to be adding to positively benefit the surgical based market in the long run. Medical centers are being built with increasing number of operation rooms in order to accommodate the rising number of patients. Different types of surgeons having multiple specialties are being employed to

cater to the needs of these patients. This in turn is presumed to have a positive impact on the global surgical blades market during the forecast period 2018-2026.

The products used in surgical procedures are considered as low-risk instruments that do not require a stringent regulatory process for manufacturing or use. Furthermore, an increase in the number of chronic diseases has propelled the development of more hospitals, clinics, and ambulatory surgical centers, which, in turn, has created more job opportunities for surgeons. These factors are augmenting the growth of the surgical blade market. Entrepreneurs who invest in this project will be successful.

PROJECT COST ESTIMATE

CAPACITY

Surgical Blades (10 Pcs. per Packets)	: 21,600 Packets/Day
Plant & Machinery	: ₹ 99 Lakhs
Cost of Project	: ₹ 365 Lakhs
Rate of Return	: 30%
Break Even Point	: 69%

SUBSCRIPTION RATE FOR INDIA—Single Copy ₹ 20/- , One Year ₹ 720/- (with Registered Post Charges)

OWNER, PUBLISHER, PRINTER & EDITOR : AJAY KUMAR GUPTA Printed at M/s. Balaji Offset Printers, 315/21, Daya Basti, Delhi 110 035
PUBLISHED AT : 106 E, Kamla Nagar, Delhi—110 007 (India).

R.N.I. NO. 61509/95

DATE OF PUBLICATION : 19 EVERY MONTH