ISSN 0971-7463

Business Ideas for Startups

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. 31 | No. 04 | April 2025 | 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 EDITORS :
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

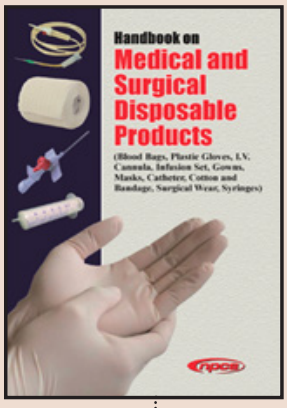
E-mail :
info@niir.org
npcs.india@gmail.com

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

Medical and Surgical Disposable Products

(Blood Bags, Plastic Gloves, I.V. Cannula, Infusion Set, Gowns, Masks, Catheter, Cotton and Bandage, Surgical Wear, Syringes)

₹ 1,775/- US$ 150 -



Medical and surgical device manufacturers worldwide produce a multitude of items that are intended for one use only. The primary reason is infection control; when an item is used only once it cannot transmit infectious agents to subsequent patients. Like medicines and other health technologies, they are essential for patient care – at the bedside, at the rural health clinic or at the large, specialized hospital. The demand of these goods is not only because of their "one time use" property but also due to the hygienic methods adopted to produce them. From manufacturing to Marking, production of disposable goods is stacked with numerous standards and regulations. This book includes the basic manufacturing method and labeling requirements, required for the bulk production of such life saving devices. General medical disposables that are being in demand in domestic as well as in international market includes: medical gloves, syringes, gowns, catheters, blood transfusion units and so on.

The information provided is not only confined to the different methods involved in the manufacturing of medical disposables but also describes the raw material used and other information related to product, which are necessary for the manufacturers knowledge. The details given will be very good for an individual/entrepreneur who is willing to invest in the field of medical disposables.

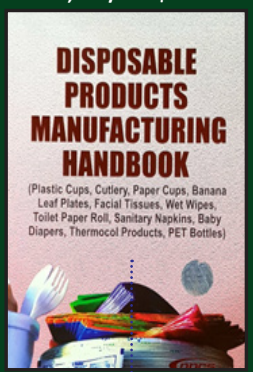
The main demand of medical disposables are, nowadays not limited to the super specialty hospitals but is also continuously increasing in rural hospitals and clinics. The work provides an idea to reader about the final product, hygiene, safety, packaging, uses, manufacturers and suppliers of the machinery, raw material involved in the processes etc.

The book covers various aspects concerned with the disposable medical devices and presents an overview of the processes involved with their machineries and specifications. The work provides the complete details of the suppliers and manufacturers with machinery photographs for better understanding of the reader.

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)

₹ 1,575/- US$ 150 -



Everyday life products manufacturers worldwide produce a multitude of items that are intended for one use only. A disposable is a product designed for a single use after which it is recycled or is disposed as solid waste. The term often implies cheapness and short-term convenience rather than medium to long-term durability. The term is also sometimes used for products that may last several months distinguish from similar products that last indefinitely.

The fast moving life and modernization simultaneously lead to the necessity of disposables in one's life. One cannot wash utensils all the time, neither can afford to arrange fine and good cutlery of glass or steel in a party for the guest. At such times, people rush for the disposables available in the market with variety of colors and designs.

For a manufacturer, to produce disposables is a good deal keeping in view the present demand and growth in the market.

This handbook is a complete well to do package for a layman to understand the basic steps to be followed for setting up a plant for a particular disposable product. The book contains raw material details, product manufacturing process, machinery details, images with raw material and machinery suppliers.

The Disposable Products Manufacturing Handbook is about producing Plastic Cups, Cutlery, Paper Cups, Banana Leaf Plates, Facial tissues, Wet Wipes, Toilet Paper Roll, Sanitary Napkins, Baby Diapers, Thermocol Products, PET Bottles that are used by masses in their day to day life. This well-established text provides a comprehensive coverage of the manufacturing processes adopted to manufacture various disposable products. It gives a holistic view of products produced, which has inputs from diverse fields. The book discusses the importance and objectives of processes and material used for the production of disposable products. Many examples have been provided to illustrate the concepts discussed.

IV Fluid Production Using FFS Technology:

A Promising Growth Avenue for Startups and Emerging Entrepreneurs

Intravenous (IV) fluids are among the most essential medical products, playing a critical role in patient care across hospitals, clinics, and emergency services. The demand for safe and sterile IV fluids is universal and continuous, making it a recession-proof and highly scalable business opportunity. For startups and entrepreneurs looking to venture into a reliable and sustainable healthcare manufacturing business, IV fluid production using Form-Fill-Seal (FFS) technology presents an ideal opportunity with promising long-term returns.

Why Startups Should Invest in IV Fluid Manufacturing

The IV fluid industry is a part of the broader medical consumables market, which is witnessing exponential growth due to rising healthcare awareness, increasing surgeries, emergency medical needs, and expanding hospital infrastructure worldwide. Here are the reasons why startups should seriously consider investing in this sector:

1. **Ever-growing Demand:** IV fluids such as dextrose, saline, ringer lactate, and other electrolyte solutions are indispensable in medical treatment. With the rise in chronic diseases, trauma cases, and surgeries, the global consumption of IV fluids has surged.
2. **High Return on Investment (ROI):** The IV fluid business, especially with advanced FFS technology, offers a quick turnaround on investment. FFS reduces labor costs, ensures high product quality, and increases production speed—optimizing operational efficiency.
3. **Low Market Saturation in Tier-2 & Tier-3 Cities:** While large hospitals in metros are served by major players, there is a significant gap in smaller towns and rural regions. This opens up a wide market for new entrants, especially for contract manufacturing and hospital supply chains.
4. **Government and Regulatory Push:** The Indian government and international health agencies are encouraging local manufacturing of essential healthcare products to reduce import dependency. This aligns with initiatives like Make in India, Ayushman Bharat, and PLI schemes for medical devices.

Market Overview, Size, and Export Potential

The global IV fluid market size was valued at USD 11.1 billion in 2023 and is projected to reach USD 18.6 billion by 2030, growing at a CAGR of 7.3%. In India, the IV fluid market is expected to grow from ₹2,200 crores in 2022 to ₹4,000 crores by 2027.

India has emerged as one of the leading suppliers of pharmaceutical products and medical consumables, including IV fluids. Several countries in Africa, Asia, and Latin America import IV fluids from India due to its cost-effectiveness, high manufacturing standards, and strong regulatory compliance. The export potential, therefore, makes it a highly lucrative sector for startups willing to go global.

Key Trends and Market Analysis

- **Adoption of FFS Technology:** The transition from manual and semi-automatic filling methods to fully automatic FFS lines has revolutionized the industry. FFS ensures zero contamination, consistent quality, and faster throughput.
- **Increased Usage of Non-PVC Bags:** Due to environmental and health concerns, there is a growing trend towards using non-PVC, eco-friendly, and biodegradable IV bags.
- **Rising Preference for Single-Use Products:** Infection control protocols and hospital policies are driving the demand for ready-to-use, sterile IV solutions in disposable packaging.

Manufacturing Process using FFS Technology

The manufacturing of IV fluids through Form-Fill-Seal (FFS) technology involves the following steps:

1. **Water Purification:** High-purity water is obtained through reverse osmosis (RO), deionization, and UV sterilization systems.
2. Solution Preparation: Active ingredients like sodium chloride, glucose, and lactate are mixed in the purified water in a stainless-steel mixing tank.
3. **Filtration:** The solution is filtered through 0.2-micron filters to remove any particulates or microbial contamination.
4. **Sterilization:** The fluid is heated to sterilization temperatures and stored in sterile holding tanks.
5. **Form-Fill-Seal Process:**
   - **Forming:** Thermoplastic granules (usually non-PVC) are melted and formed into bags inside the machine.
   - **Filling:** The sterile solution is automatically filled into the formed bag.
   - **Sealing:** The filled bag is hermetically sealed inside the sterile chamber.
6. **Leak Test and Inspection:** Each bag undergoes a leak test and visual inspection.
7. **Labeling and Packaging:** The final products are labeled, packed, and stored for dispatch.

Conclusion

The IV fluid business, especially with the adoption of FFS technology, provides an excellent manufacturing opportunity for aspiring entrepreneurs and startups. It combines the advantages of high demand, government support, export potential, and scalable technology. As healthcare becomes more accessible and widespread, the IV fluid industry will only continue to grow—offering a recession-proof business that delivers both financial rewards and social impact. Investing in this sector now can place startups at the forefront of a booming industry.

PROJECT COST ESTIMATE

CAPACITY:	
IV Fluid–500ml Bottle Size (NS, DNS, RL, D5, D10, Electrolyte P, Electrolyte M)	*: 23,333 Bottles Per Day*
IV Fluid–100ml Bottle Size (NS, Metroniazole)	*: 6,667 Bottles Per Day*
Plant & Machinery	**: ₹ 27 Crore**
Cost of Project	**: ₹ 38 Crore**
Rate of Return	**: 27%**
Break Even Point	**: 38%**

Kraft Paper from Waste Cartons – A Profitable Green Venture for Startups and Entrepreneurs

The global movement towards sustainability and circular economy is creating new waves of opportunities for businesses that focus on waste-to-wealth projects. One such promising business idea is the manufacturing of Kraft paper from waste cartons. As the demand for eco-friendly packaging continues to surge, this industry is emerging as a golden opportunity for startups and aspiring entrepreneurs to tap into a highly scalable and future-ready business.

Why Startups Should Choose Kraft Paper Manufacturing from Waste Cartons

Startups are constantly seeking business ideas that align with modern trends, offer scalability, and contribute to environmental sustainability. Kraft paper manufacturing from waste cartons offers all three. Waste cartons, which are primarily made from paperboard and layered materials, are available in abundance across households, commercial establishments, and retail outlets. Instead of these ending up in landfills, they can be converted into high-demand Kraft paper—a vital packaging material used extensively across industries like food, pharmaceuticals, e-commerce, and FMCG. This business supports the triple bottom line: it is environmentally sustainable, economically profitable, and socially responsible. Moreover, it leverages the concept of resource recovery, making it a key player in the circular economy.

Market Overview and Size

The global Kraft paper market was valued at approximately USD 18.5 billion in 2023 and is projected to grow at a CAGR of 4.8% through 2030. India is also witnessing a significant rise in demand for Kraft paper, driven by the booming e-commerce sector, rising awareness of sustainable packaging, and a growing preference among consumers for biodegradable products. The country currently produces over 7 million tonnes of paper annually, with Kraft paper accounting for nearly 60% of this volume.

Waste cartons, including used corrugated boxes, paperboard packaging, and multilayer cartons, serve as a key raw material. This not only makes the process cost-effective but also reduces dependency on virgin wood pulp.

Export Potential

India has become a key exporter of Kraft paper to markets like the Middle East, Africa, Southeast Asia, and even Europe. With international buyers looking to source sustainable paper products at competitive rates, Kraft paper manufacturers in India have a strong advantage due to low production costs and availability of recycled inputs.

Exporters are especially benefiting from the ban on plastic packaging in various countries, which has directly increased demand for Kraft paper in wrapping, sacks, cartons, and bags. Setting up a Kraft paper manufacturing unit focused on exports can lead to excellent foreign exchange earnings and business expansion possibilities.

Manufacturing Process

The process of producing Kraft paper from waste cartons involves the following key steps:

1. **Collection and Sorting** – Waste cartons are collected from recycling centers, warehouses, and scrap dealers. They are sorted to remove contaminants such as plastic linings, tapes, or labels.
2. **Pulping** – The sorted cartons are fed into a hydrapulper machine where they are mixed with water and chemicals to break down into fiber slurry.
3. **Screening and Cleaning** – The pulp is screened to remove impurities and non-fibrous elements.
4. **Refining** – The pulp is refined to improve fiber bonding strength and paper quality.
5. **Sheet Formation** – The refined pulp is spread onto a wire mesh in the paper machine where water is removed, forming a wet paper sheet.
6. **Pressing and Drying** – The wet sheet is pressed to remove excess water and then passed through heated drying cylinders to evaporate moisture.
7. **Calendaring and Reeling** – The dry paper is smoothed and wound into rolls for packaging and distribution.

Conclusion

Manufacturing Kraft paper from waste cartons is not just a profitable venture, it is a business with a purpose. For startups and entrepreneurs, it offers a low-entry barrier, strong domestic and global demand, and alignment with ESG (Environmental, Social, and Governance) goals. With rising awareness and government support for recycling and sustainable manufacturing, this project can become a cornerstone in building a greener future while generating excellent returns on investment.

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 300 MT Per Day
Plant & Machinery	: ₹ 55 Crore
Cost of Project	: ₹ 84 Crore
Rate of Return	: 34%
Break Even Point	: 47%

A Business Plan for ISO Freight Containers

An ISO freight container, also known as a cargo container, is a large metal box used to store and transport goods from one place to another. They are mainly made out of steel, which makes them very durable and able to withstand many types of terrain and weather conditions. If you're considering getting into the industry, it's important to know why the market is booming right now.

The Benefits of Starting Business of ISO Freight Containers

There are many benefits to using ISO freight containers. They're large enough to hold both cargo and people. Additionally, they're durable and can withstand heavy weather conditions. And finally, because they're stackable, companies can save on storage space when using them.

Indian Market Outlook

The India container market size to be valued at USD 10.3 billion by 2028 and is expected to grow at a compound annual growth rate (CAGR) of 1.7% during the forecast period. Industrialization in India has been booming over the last few years, and with that, so has their demand for ISO freight containers.

Global Market Outlook

The global shipping containers market was valued at $8.70 billion in 2019, and is projected to reach $12.08 billion by 2027, registering a CAGR of 4.3% for the forecast period 2020-2027. In 2020, the Asia Pacific area controlled 68.1% of global revenue, dominating the regional market. Its dominant position in the worldwide market is mostly due to the region's robust marine trade with nations like China, Japan, India, South Korea, and others in the Asia Pacific.

PROJECT COST ESTIMATE

CAPACITY:

ISO Standard Cargo Container Size 20Ft	*: 15,000 Nos. Per Annum*
ISO Standard Cargo Container Size 40Ft	*: 15,000 Nos. Per Annum*
Plant & Machinery	: ₹ 4560 Lakhs
Cost of Project	: ₹ 9658 Lakhs
Rate of Return	: 12%
Break Even Point	: 58%

Corrugated Cartons from Waste Paper

– A Lucrative and Eco-Friendly Opportunity for Aspiring Entrepreneurs

In the era of sustainability and eco-conscious consumption, the demand for recycled and biodegradable packaging solutions has soared. Among the most in-demand packaging products are corrugated cartons, which serve as an essential component across industries such as e-commerce, electronics, FMCG, pharmaceuticals, and logistics. Manufacturing corrugated cartons from waste paper is not only an eco-friendly business model but also a highly profitable venture, particularly recommended for startups and first-time entrepreneurs.

Why Entrepreneurs Should Choose Corrugated Carton Manufacturing

Corrugated cartons are indispensable in product packaging, offering strength, versatility, and environmental compatibility. With the global push towards reducing single-use plastics and promoting sustainable alternatives, corrugated packaging is gaining strong market momentum. For startups, this business presents low raw material costs (since it uses recyclable waste paper), consistent demand, and vast scalability.

Moreover, the manufacturing process is relatively simple to set up with moderate investment. Government initiatives promoting recycling and MSME funding support further enhance the feasibility of this venture. It also aligns well with India's growing e-commerce and logistics sectors, which heavily rely on corrugated cartons for packaging and delivery.

Market Overview and Industry Insights

The global corrugated box market was valued at approximately USD 75 billion in 2023 and is projected to reach USD 100 billion by 2030, growing at a CAGR of 5.1%. In India, the packaging industry is expected to surpass INR 1,500 billion by 2027, with corrugated packaging contributing a significant portion due to its recyclability and lightweight structure.

The Indian e-commerce boom—driven by platforms like Amazon, Flipkart, and direct-to-consumer brands—has directly amplified the demand for corrugated cartons. Additionally, the surge in exports of manufactured goods from India has increased the use of durable and eco-friendly packaging, creating long-term business opportunities for local manufacturers.

Export Potential

Corrugated cartons manufactured from waste paper have excellent export potential. Countries in Europe, North America, and the Middle East actively seek sustainable packaging options. Indian manufacturers can tap into this opportunity, given the cost advantages and growing international demand for eco-friendly solutions.

Key Market Trends

1. **Sustainable Packaging Preference:** Consumers and companies are shifting towards recyclable and biodegradable packaging.
2. **Rise of E-commerce:** Online shopping drives massive demand for corrugated boxes in various sizes.
3. **Automation in Packaging:** Businesses seek ready-to-use boxes that are precise in dimensions and strength.
4. **Customization Demand:** Companies now prefer printed, branded cartons, opening avenues for value-added services.

Manufacturing Process

The process of manufacturing corrugated cartons from waste paper involves several steps:

1. **Raw Material Preparation:** Collection and sorting of waste paper (newspaper, office paper, kraft paper waste).
2. **Pulping:** The waste paper is mixed with water in a hydrapulper to convert it into pulp.
3. **Refining and Screening:** The pulp is refined and screened to remove impurities and improve fiber bonding.
4. **Sheet Formation:** The cleaned pulp is fed into a paper machine to form kraft paper sheets.
5. **Corrugation:** The kraft paper is passed through corrugating rollers to form fluted layers.
6. **Lamination:** Fluted paper is glued between two flat linerboards to form the corrugated board.
7. **Cutting and Printing:** The board is cut to the required size and printed (if required).
8. **Slotting and Folding:** Boxes are slotted, creased, folded, and glued to form the final product.
9. **Bundling and Packaging:** Finished boxes are bundled and packed for dispatch.

Starting a corrugated carton manufacturing unit from waste paper is a smart and responsible business move for modern entrepreneurs. It leverages the dual advantage of profitability and sustainability—ideal for building a future-ready business. With increasing environmental regulations, government support, and consistent demand from global and domestic markets, this venture stands out as a viable and lucrative opportunity for startups in India and beyond.

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 5,000 Kgs. Per Day
Plant & Machinery	: ₹ 53 Lakhs
Cost of Project	: ₹ 249 Lakhs
Rate of Return	: 29%
Break Even Point	: 64%

Water Park

The global water parks market size was valued at USD 45.2 billion in 2017. It is likely to expand at a CAGR of 5.8% from 2018 to 2025. Innovative rides, accommodation facilities, and merchandise in water parks are gaining popularity among visitors of all age groups. As a result, there is a rise in the number of adults and children visiting water parks, thus expanding the size of the target audience. Thus, due to demand it is best to invest in this project.

PROJECT COST ESTIMATE

CAPACITY:

Water Park Visitors	*: 1,000 Visitors / Day*
Room Rent from Resort	*: 25 Visitors / Day*
Restaurant–Vegetarian Visitors	*: 300 Visitors / Day*
Restaurant–Non-Veg. Visitors	*: 200 Visitors / Day*
Restaurant–Beverages, Tea & Coffee Visitors	*: 475 Visitors / Day*
Plant & Machinery	: ₹ 1086 Lakhs
Cost of Project	: ₹ 3208 Lakhs
Rate of Return	: 33%
Break Even Point	: 38%

Sodium Cyanide: A High-Potential Manufacturing Opportunity for Startups

Sodium cyanide (NaCN) is an essential chemical compound extensively used in the mining industry, particularly for gold and silver extraction through the cyanidation process. Its high reactivity with metals makes it a preferred choice in leaching operations. Apart from mining, sodium cyanide also finds application in the production of dyes, pharmaceuticals, electroplating, and organic chemicals. Due to its wide industrial relevance and strong global demand, setting up a sodium cyanide manufacturing unit presents a profitable opportunity for startups and entrepreneurs.

Why Entrepreneurs Should Invest in Sodium Cyanide Manufacturing

1. **Strong Global Demand:** Sodium cyanide is a critical input in gold mining, and with the increasing global demand for precious metals, the need for sodium cyanide continues to grow. Gold production alone consumes over 90% of the total sodium cyanide produced worldwide. This steady demand offers an assured market for new entrants.
2. **Favorable Export Opportunities:** India, with its cost-competitive manufacturing ecosystem and skilled labor, can position itself as a key exporter of sodium cyanide to countries in Africa, Southeast Asia, and South America, where mining activities are intensifying. By setting up a plant in India, entrepreneurs can tap into both domestic and international markets.
3. **Supportive Industrial Policies:** Governments around the world, including India, are focusing on the growth of the chemicals and mining sectors through Make-in-India and other production-linked incentive (PLI) schemes. Such policies are encouraging entrepreneurs to explore downstream chemical products like sodium cyanide.
4. **Import Substitution Opportunity:** A large portion of India's sodium cyanide requirement is currently met through imports. Domestic production can bridge this gap, reduce foreign exchange outflow, and boost local manufacturing capabilities.

Market Size and Trends

The global sodium cyanide market was valued at around USD 2.5 billion in 2023 and is projected to grow at a CAGR of 6.2% over the next five years. The Asia-Pacific region, led by China and India, accounts for the largest share due to the growing mining and chemical manufacturing sectors.

In India, the demand is rising due to increased investment in mining, especially in gold exploration in states like Karnataka, Jharkhand, and Rajasthan. Moreover, the chemical and pharmaceutical industries are also key contributors to the growing sodium cyanide consumption.

Manufacturing Process of Sodium Cyanide

The production of sodium cyanide primarily follows the Andrussow process, which involves a reaction between methane (CH_4), ammonia (NH_3), and oxygen (O_2) over a platinum catalyst at high temperatures:

$$CH_4 + NH_3 + O_2 \rightarrow NaCN + H_2O$$

Another method is the Castner process, which uses hydrogen cyanide (HCN) and sodium hydroxide (NaOH):

$$HCN + NaOH \rightarrow NaCN + H_2O$$

These processes require a controlled environment due to the hazardous nature of the chemicals involved, making it crucial to install appropriate safety systems and pollution control equipment.

Export Potential and Revenue Opportunities

India's geographical advantage and trade ties with mining-dominated regions like Africa, Latin America, and Central Asia make it an ideal location for sodium cyanide exports. By establishing a high-quality production unit with compliance to international standards (such as REACH, ISO, and BIS certifications), startups can cater to global markets and command better pricing margins.

In terms of profitability, sodium cyanide enjoys high value per ton due to its industrial necessity. With proper plant design and cost-effective raw material sourcing, return on investment (ROI) can be achieved within 2–3 years of operations.

Sodium cyanide manufacturing is a high-potential investment for aspiring industrialists and startups looking to enter the specialty chemicals space. With the right technological setup, adherence to environmental standards, and market focus, this venture can yield consistent returns while supporting critical sectors like mining and chemical production. It is a business opportunity that promises both economic value and industrial relevance in the years to come.

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 60 MT Per Day
Plant & Machinery	: ₹ 102 Crore
Cost of Project	: ₹ 143 Crore
Rate of Return	: 27%
Break Even Point	: 37%

Sugarcane Juice Preservation and Bottling Plant

Sugarcane juice is quite nutritious as it contains natural sugars, minerals like iron, magnesium, phosphorous, calcium and organic acids e.g. malic acid, succinic acid, acotinic acid etc. Preservation is done when Juice or food is kept for longer period without any deteriorated or spoils the juice by the direct contact with atmosphere. Sugarcane juice is excellent in treating urinary related diseases. It keeps the urine flow clear and aids the kidneys to perform better. Sugarcane juice relieves the burning sensation which arises due to infections of the urinary tract. The sugar cane juice provides the glucose, which is stored, as glycogen to be 'burned' by muscles when required. Sugar Industry contributes about 2500 crore rupees as tax to both central and state governments. The industry size in terms of capital is more than Rs. 40,000 crore. Almost 50 million people depend on sugar industry for their livelihood. We actively encourage a culture of innovation, which facilitates the development of new technologies and ensure a high quality product.

PROJECT COST ESTIMATE

CAPACITY

Capacity	: 48, 00,000 Ltrs. /Annum
Plant & Machinery	: ₹ 106 Lakhs
Cost of Project	: ₹ 467 Lakhs
Rate of Return	: 28%
Break Even Point	: 54%

Startup Spotlight:

Why Potato Powder Production is a Booming Business Opportunity

Potato Powder is fast emerging as a highly profitable and scalable product in the global food processing industry. With the increasing demand for convenience foods, the use of dehydrated vegetable powders—especially potato powder—has seen a significant rise. It serves as an essential ingredient in snacks, ready-to-cook meals, soups, bakery items, baby foods, and seasoning mixes. This makes the manufacturing of potato powder a lucrative opportunity, especially for startups and budding entrepreneurs aiming to enter the value-added food segment.

Why Startups Should Consider Potato Powder Manufacturing

Startups are always on the lookout for low-risk, high-demand ventures with relatively simple manufacturing processes. Potato powder manufacturing ticks all the right boxes. It doesn't require a very high initial capital investment and can be started with moderate land and machinery. Additionally, raw materials are abundantly available in potato-growing regions, making procurement cost-effective.

Moreover, the product enjoys consistent demand across the globe due to its wide range of applications in domestic and industrial food processing. The long shelf-life of potato powder and the increasing popularity of ready-to-eat and ready-to-cook foods further make this a sustainable and future-proof business.

Market Overview and Trends

The global market for potato derivatives, including potato powder, is expected to grow steadily. According to industry estimates, the global potato processing market size was valued at over USD 28 billion in 2022 and is projected to grow at a CAGR of around 5.3% during 2023–2028. The demand for potato powder in the Asia-Pacific region, especially in India, is experiencing a significant uptrend, driven by the expanding urban population and rising disposable incomes.

India is one of the largest producers of potatoes globally, which creates a ready advantage in terms of raw material availability. The Indian potato powder market is witnessing robust demand from the foodservice sector, snack manufacturers, and exports, especially to the Middle East, Southeast Asia, and Africa.

Export Potential

The export potential of potato powder is noteworthy. Countries with limited potato cultivation but high demand for processed food products import large quantities of potato powder. Indian manufacturers can benefit by tapping into export markets such as the UAE, Bangladesh, Sri Lanka, and African nations, where Indian food products are well-accepted. Government incentives under various export promotion schemes also support the growth of this sector.

Manufacturing Process

The production of potato powder involves several stages, starting from raw potato procurement to drying and packaging. The process flow includes:

1. **Sorting and Washing** – Removal of dirt, stones, and other impurities from raw potatoes.
2. **Peeling** – Removal of outer skin using mechanical peelers.
3. **Slicing** – Potatoes are sliced uniformly for even drying.
4. **Blanching** – Sliced potatoes are blanched in hot water to inactivate enzymes.
5. **Drying** – The slices are dried using hot air dryers or vacuum dryers.
6. **Grinding** – The dried slices are ground into a fine powder.
7. **Sieving** – Ensures uniformity of particle size.
8. **Packing** – The powder is packed in moisture-proof packaging to increase shelf-life.

Potato powder manufacturing offers a compelling mix of affordability, scalability, and high market demand. For startups and entrepreneurs looking for a stable entry into the food processing sector, this venture presents a smart business move. With India's agricultural strength, rising food exports, and growing preference for processed foods, investing in potato powder manufacturing is not just viable—it's visionary.

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 20 MT Per Day
Plant & Machinery	: ₹ 31 Crore
Cost of Project	: ₹ 47 Crore
Rate of Return	: 25%
Break Even Point	: 41%

Production of Stainless Steel Cold Rolled Coil

Using Stainless Steel Scrap

Cold rolling is a work hardening treatment for stainless steel that is widely used to alter the metal's structure. Cold rolled stainless steel is utilised as a raw material in a variety of medical, aerospace, and automotive applications. Continue reading to learn more about cold rolled steel, including what it is, how it is manufactured, and what applications it can serve.

Cold rolling steels' primary purpose is to reduce the thickness of hot rolled steel strips (usually 1.5 mm to 5 mm) to thinner thicknesses (normally 0.12 mm to 2.5 mm) that are impossible to achieve in a hot strip mill.

Cold rolling is used to improve the surface polish of steels, improve thickness tolerances, provide a variety of 'tempers,' improve physical attributes, and prepare the strip for surface coating, among other things.

The worldwide steel strips market has been significantly fragmented as a result of the strong presence of multinational corporations around the world, as well as the existence of a large number of local and regional market competitors. Because of the increasing growth of end-user sectors in Asia Pacific, such as construction and consumer goods, the region is expected to consume a large amount of the stainless strips market.

PROJECT COST ESTIMATE

CAPACITY :

Stainless Steel 202 Series Strip Coil (0.02 mm to 3 mm) : 140.0 MT Per Day
Stainless Steel 304 Series Strip Coil (0.02 mm to 3 mm) : 100.0 MT Per Day
Stainless Steel 405 Series Strip Coil (0.02 mm to 3 mm) : 93 MT Per Day

Plant & Machinery	: ₹ 24 Cr
Cost of Project	: ₹ 83 Cr
Rate of Return	: 28%
Break Even Point	: 47%

Starting a Business in Prestressed Concrete Sleepers:

A High-Return Opportunity for Entrepreneurs

In the ever-evolving infrastructure landscape, the railway sector holds a crucial role in economic development. One of the most vital components of modern railway infrastructure is the prestressed concrete sleeper. As railways expand and upgrade, the demand for high-performance sleepers continues to grow exponentially. For startups and aspiring entrepreneurs, investing in the manufacturing of prestressed concrete sleepers presents a highly rewarding and scalable business opportunity.

Why Entrepreneurs Should Choose Prestressed Concrete Sleepers

The global railway industry is undergoing massive modernization and capacity enhancement. With the increasing demand for efficient transportation systems and the replacement of aging infrastructure, prestressed concrete sleepers are becoming the preferred choice over traditional wooden or steel alternatives. These sleepers offer superior durability, high load-bearing capacity, low maintenance, and a longer service life.

India, being one of the largest railway networks in the world, is a major consumer of prestressed concrete sleepers. Indian Railways, metro systems, freight corridors, and high-speed rail projects are extensively using these sleepers for new tracks and renewal works. This growing demand provides startups with a stable market and consistent supply contracts from public and private sector clients.

Market Overview, Size, and Trends

The global prestressed concrete sleeper market is projected to grow at a CAGR of over 5% during the forecast period of 2024–2030. In India alone, the market is driven by initiatives such as Dedicated Freight Corridors (DFCs), Bullet Train projects, and increased allocation to rail infrastructure under the Union Budget.

Key trends include:

- Replacement of obsolete wooden sleepers with eco-friendly concrete alternatives.
- Increasing government focus on railway safety and speed upgrades.
- Adoption of automation and mechanized laying systems driving demand for uniform, high-quality sleepers.
- Growing export opportunities to countries in Africa, Southeast Asia, and the Middle East, where railway infrastructure is expanding.

These factors together establish a strong foundation for entrepreneurs to tap into this sector.

Manufacturing

Process of Prestressed Concrete Sleepers

The manufacturing process of prestressed concrete sleepers involves multiple well-defined steps to ensure strength, durability, and dimensional accuracy:

1. **Preparation of Moulds:** Steel moulds are thoroughly cleaned and lubricated.
2. **Tensioning of Steel Wires:** High-tensile pre-stressing steel wires or strands are stretched in the mould.
3. **Concrete Mixing and Pouring:** A high-grade concrete mix is prepared and poured into the mould.
4. **Vibration and Compaction:** The mould is vibrated to remove air bubbles and ensure uniform compaction.
5. **Curing:** The sleepers are cured using steam or water spray for specific durations to attain desired strength.
6. **De-tensioning and Demoulding:** Once cured, the tension on steel wires is released and the sleeper is removed from the mould.
7. **Finishing and Inspection:** Sleepers are checked for quality parameters and stacked for dispatch.

Investment Potential and Profitability

Setting up a sleeper manufacturing plant with a capacity of 5 lakh units per annum requires a moderate capital investment but offers high returns. The revenue stream is secured through long-term supply contracts from railway zones, metro corporations, and EPC contractors. Margins improve further with process optimization, automation, and potential exports.

The Indian Railways' future-ready infrastructure blueprint, which involves doubling of lines, track renewals, and electrification, creates a continuous demand. Moreover, the scope of supplying to private railway projects, mining rail lines, and exports enhances the business viability.

Export Opportunities

Indian manufacturers have started exporting prestressed concrete sleepers to countries in Africa, Sri Lanka, Bangladesh, and the Gulf region. There is considerable scope to expand globally due to cost competitiveness and engineering expertise in India.

Prestressed concrete sleeper manufacturing is a forward-looking industrial venture aligned with national infrastructure goals. For startups and entrepreneurs, this sector offers assured demand, technological scalability, government support, and export potential. With proper planning, quality adherence, and strategic tie-ups, this business can become a robust and sustainable enterprise delivering long-term profits.

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 1,600 Pcs. Per Day
Plant & Machinery	: ₹ 12 Crore
Cost of Project	: ₹ 22 Crore
Rate of Return	: 26%
Break Even Point	: 51%

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.

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 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-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 Poin	: 64%

PROCESS TECHNOLOGY BOOKS

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, Alletrhin, Anthracene, Barium Potassium Chromate Pigment, Calcium Cyanamide, Carboxymethylcellulose, Carotene, Chlorophyll,Chemicals from Acetaldehyde, Fats, Milk, Oranges, Wood, Manufacture of Dye Intermediates and Dyes, Fine Chemicals, Formaldehyde, Granulated Fertilizers, Granulated Triple Superphosphate and Hydroquinone 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) 2nd Rev. Edn. 1875/- 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) (4th Revised Edition) 1995/- 200
- Handbook on Mushroom Cultivation and Processing (With Dehydration, Preservation and Canning)..... 1275/- 125
- The Complete Book on Organic Farming and Production of Organic Compost (3rd. Rev. Edn.)..... 1675/- 150
- Nanotechnology Handbook 1675/- 150
- Nanoscience and Nanotechnology Handbook..... 1675/- 150
- Integrated Organic Farming Handbook 1275/- 125
- 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

 # Limited Edition–only photostat copy available

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
- 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) 3rd Rev. Edn. 1895/-200

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
- 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

PROCESS TECHNOLOGY BOOKS

NAME OF BOOKS	₹ / US$
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
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, Polacrilex Resin) 2nd Rev. Edn.	2225/-200
फूड प्रोसेसिंग इंडस्ट्रीज़ (खाद्य प्रसंस्करण एवं कृषि आधारित उद्योग परियोजनाएँ) 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
Handbook on Natural and Flavoured Ice Cream Manufacturing (Flavours, Formulae And Machinery Details)	1575/- 150

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 (स्माल स्केल इण्डस्ट्रीज़) (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 ? 5th Revised Edition	995/-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
Money Making Business IdeasYou Can Start from Home with Low Costs (Profitable Part Time, Spare Time and Side Businesses) 2nd Revised Edition	800/- 100
स्मॉल स्केल इण्डस्ट्रीज़ प्रोजेक्ट्स (लघु, कुटीर व घरेलू उद्योग परियोजनाएँ 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

PROCESS TECHNOLOGY BOOKS

NAME OF BOOKS	₹ / US$
PLASTICS, FOAMS, PET & PREFORM PROCESSING TECHNOLOGY	
• The Complete Book on Medical Plastics	975/- 100
• 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 (2nd Rev. Edn.)	1475/- 150
• 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 (4th Rev.Edn.)	1875/- 150
• The Complete Technology Book on Textile Processing with Effluent Treatment	1000/- 100
• Modern Technology of Textile Dyes & Pigments (3rd Rev. Edn.)	2275/- 225
• 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 (3rd Rev. Edn.)	1695/- 150
• Handbook on Electroplating with Manufacture of Electrochemicals (2nd Rev. Edn.)	1975/- 200
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, Tubing, 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
• 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 (2nd Rev. Edition)	1995/- 200
• 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
• 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) 3rd Rev. Edition	1995/- 150
• Medical, Municipal and Plastic Waste Management Handbook	1275/- 125
• The Complete Book on Biological Waste Treatment and their Utilization	1675/- 150

 # Limited Edition–only photostat copy available

PROCESS TECHNOLOGY BOOKS

NAME OF BOOKS	₹ / US$
• Recycling Business Handbook *Industrial and Agricultural Waste Processing* (Automated Vehicle Scrapping, Bio Coal Briquettes, Caffeine Extraction, Disposable Tableware, E-Waste, Lead Acid Battery, Lithium-Ion Battery, Lubricating Oils, Organic Fertilizer, Particle Board, PET Bottles, Waste Tyre Pyrolysis, Aluminium, Biomedical Waste, Biomass Charcoal, Activated Carbon, PET Flakes, Rice Bran Oil)	1995/- 200
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 (3rd Revised Edition)	1795/- 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 (5th Rev. Edn.).	1875/- 150
• The Complete Technology Book on Herbal Beauty Products (Cosmetic Industry) with Formulations, Manufacturing Process, Machinery Equipment Details & Plant Layout (4th Revised Edition)	1850/- 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 (2nd Rev. Edn.)	1975/- 150
• Perfumes and Flavours Technology Handbook with Manufacturing Formulations, Process, Machinery Equipment Details & Factory Layout (2nd Edition)	1995/- 200

 # Limited Edition–only photostat copy available

NAME OF BOOKS	₹ / US$
• Handbook on Perfume, Deodorant, Air Freshener, Body Spray, Fragrances, Flavours and Essential Oil Industry with Manufacturing Formulations, Process, Machinery Equipment Details & Factory Layout (2nd Rev. Edn.)	1875/- 150
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 (Hot Strip Mill, Hot Rolled Steel Plates, Hot Rolled Coils, Hot Rolled Steel Bars, Railway Track, TMT Bars) 2nd Rev. Edn.	1975/- 200
• 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
CONSTURCTION 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

Most Growing Industries to Start a New Business

A Business Plan for
Pharmaceutical Unit

- Ciprofloxacin Tablets -Co-Trimoxazole Tablets - Diclofenac Sodium Tablets - Paracetamol Tablets - Metronidazole Tablets - Doxycycline Tablets - Fluconazole Capsules - Propranolol Capsules - Ciprofloxacin Injectables

Pharmaceutical units refer to the various medicines and drugs produced by the pharmaceutical industry for treating and preventing different health conditions. These units come in the form of tablets, capsules, injections, and other dosage forms, and are developed based on thorough research and clinical trials.

Benefit of Starting Pharmaceutical Unit Business

- **Innovation and Development:** Pharmaceutical industry constantly evolves with new research and discoveries. This provides opportunities for businesses to develop and market innovative products.
- **High Profit Margins:** The pharmaceutical industry is known for its high-profit margins. Successful products can generate substantial revenue.
- **Government Support:** Many governments encourage the pharmaceutical industry because of its potential to contribute to public health. This support can come in the form of subsidies, tax incentives, or streamlined regulatory processes.

Global Market Outlook

The global pharmaceutical manufacturing market size was valued at USD 405.52 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 11.34% from 2021 to 2028. The tablets dominated the market with a share of over 26 % in 2020. This is due to the wide availability of tablets in different colors, shapes, and sizes as well as types, such as film and enteric-coated, effervescent, and orally disintegrating tablets. The advent of 3D-printed tablets designed for personalized needs also boosts segment growth.

Indian Market Outlook

The Indian pharmaceutical industry is growing at an impressive pace and has become one of the largest producers of generic drugs globally. The market for pharmaceutical unit tablets and capsules in India has witnessed significant growth over the past few years, driven by various factors such as increasing demand for quality healthcare, growing awareness about health and wellness, and rising disposable income.

Conclusion

Pharmaceutical unit tablets and capsules are crucial in the production of high-quality medicines. The future looks promising for the pharmaceutical unit tablets and capsules market, with growth projected to continue at a rapid pace. The focus on research and development, innovation, and improving the quality of healthcare will be critical drivers in the market's success.

PROJECT COST ESTIMATE

CAPACITY:

Tablets–Ciprofloxacin 250 mg Tablets (Strip 10 Tab. Each)	*: 64,000 Strips Per Day*
Co-Trimoxazole Tablets 480 mg (Strip 10 Tab. Each)	*: 64,000 Strips Per Day*
Diclofenac Sodium 50mg Tablets (Strip 10 Tab. Each)	*: 64,000 Strips Per Day*
Paracetamol One Strip 500 mg 10 tab. Each	*: 80,000 Strips Per Day*
Metronidazole Tablet 400 mg (Strip 10 Tab. Each)	*: 64,000 Strips Per Day*
Doxycycline Tablet 100 mg	*: 64,000 Strips Per Day*
Capsules–Fluconazone 50 mg (Strip 10 Cap. Each)	*: 100,000 Strips Per Day*
Propranalol 80mg (Extended Release) (Strip 10 Cap. Each)	*: 100,000 Strips Per Day*
Injectables–Ciprofloxacin Glass Vial 25 ml Size Each	*: 192,000 Strips Per Day*
Plant & Machinery	**: ₹ 179 Lakhs**
Cost of Project	**: ₹ 35774 Lakhs**
Rate of Return	**: 37 %**
Break Even Point	**: 29 %**

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 DetailedProcess 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, plant 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: Upto 25 Lakhs

(Plant and Machinery) :

Selected Project Profiles for Entrepreneurs, Startups

- » Connecting Rod Mk2 (Electro Galvanized) for Hand Pump
- » A4 and A3 Size Paper
- » Activated Carbon (by Steam Activation Process)
- » Activated Carbon from Saw Dust Adhesive (Fevicol Type)
- » Adhesive from Maize Starch
- » Atta Chakki Plant
- » Ayurvedic /Herbal Hand Sanitizer
- » Ayurvedic Pain Balm
- » Baby Cereal Food
- » Baby Wet Wipes and Facial Wet Tissue Banana Powder
- » Battery Sprayer
- » Biodegradable Plastic Bags from Corn & Cassava Starch Granules

- » Biodegradable Plastic Bags from Corn Starch Production
- » Biofertilizer from Birds Excreta –
- » Bricks from Fume Dust
- » Micronutrient Fortified Energy Dense Food
- » Caffeine from Tea Waste
- » Calcium & Zinc Stabilizer for Pipe and Foam Board Application
- » Cashew Nut Shell Oil
- » Cold Pressed Rice Bran Oil (Edible Oil)
- » Copper Wire Drawing, Annealing & Enamelling
- » Corrugated Galvanized Sheet
- » Cow Urine (Gomutra) Processing and Packing
- » Dairy Farming for Milk
- » Dall/Pulse Mill
- » Detergent Cake & Powder

- » Disposable Plates from Banana Leaves
- » Eggshell Powder
- » English Willow Cricket Bat
- » Essential Oil Extraction (Jasmine and Tuberose)
- » Exercise Note Book & Registers Pads and File
- » Exercise Note Book and Register
- » Extraction of Essential Oil and Packing of Ground Spices
- » Extraction of Neem Oil
- » Extraction of Oil from Rajnigandha
- » Filteration and Airtight Packing of Coconut Oil
- » Filtration and Airtight Packing of Coconut Oil
- » Flexographic Printing
- » Fuel Bricks from Ground Nuts, Soyabean Hulls and Jute
- » Ginger Oil

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

» Glass Fiber Reinforced Polymer (GFRP) Rebar Manufacturing Business
» Goat Farming for Meat and Breeding Cattle Breeding Farm, Fodder, Livestock Farming
» Growing Demand of Rice Husk Based Biodegradable Cutlery
» Gutkha & Pan Masala
» Hand Sanitizer
» Hand Sanitizer Manufacturing
» Herbal/Ayurvedic Hand Sanitizer
» High Temperature Aluminium Based Paint
» Steel Epoxy Putty Stick
» Hydraulic Hoses for Heavy Earth Movers
» Hydroponic Green House Farming
» Instant Noodles
» Insulator (Made By Fiber Glass & Reinforced Plastics By Hand Moulding Press)
» Iron Powder from Mill Scale Scrap
» Jute Shopping Bags
» Ladies Under Garments (Bra & Panties)
» Ladies Under Garments
» Liquid Glucose from Maize
» Liquid Hand Wash
» Liquid Organic Fertiliser (Biofertiliser)
» Lucrative Business of Magnesium Stearate
» M.S. Welding Electrodes
» Macaroni, Vermicilli & Noodles Manufacturing
» Magnesium Sulphate
» Mango Pickles
» Steel Container (Cargo Container)
» Basic Voilet 10 (Rhodamine B Base)
» Mayonnaise
» Meat Analogue, Vegan Meat & Mock Meat from Soyabean and Wheat Gluten
» Micronutrients Fertilizer
» Micronutrients Fertilizer for Banana, Vegetables and Citrus
» Mineral Wool Ceiling Tiles
» Moringa Leaf Tablets
» Mosquito Repellent Liquidator
» Mosquito Repellent Liquidator, Vaporiser (All Out Type)
» Namkeen (Dalmotth, Bhujia, Chana Chur, Khatta Meetha)
» Natural Tanning Powder
» Neem Oil (Cold Process)
» Non Asbestos Jointing Sheet
» Non Glazed Ceramic Tiles
» Non-formaldehyde Dye Fixing Agent for Reactive Dyes
» Pan Masala
» Pan Masala Sada, Meetha & Zarda
» Pan Masala, Gutka & Pouch Making Plant
» Pan Masala, Tobacco, Zarda & Kimam Pan Masala, Zarda, Khaini, Gutka, Sweet & Scented Supari
» Paracetamol
» Pectin from Citrus, Lemon and Oranges
» Plaster of Paris Emulsion
» Poly Aluminium Chloride
» Potassium Chloride
» Micronutrients Fertilizer
» Profitable Growing Industry of Medical Disposables (Gowns/Drapes)
» PVA Adhesive (Fevicol Type) -
» Ready Mix Coating Powder used for Coating of Pharmaceuticals Tablets for Regular Fill Coating and Functional Film Coating
» Readymade Garments (T-shirt)
» Readymade Garments
» Readymade Khaini (Geeli)
» Refrigerant Gas R22 Bottling Plant
» Rewinding of Burnt Electric Motors
» Sanitary Napkin (Low Investment Project)
» Sanitary Napkins
» Sanitary Napkins (Low Cost Project)
» School (CBSE Pattern)
» Premix Tea and Coffee Cappuccino, Vanilla Flavoured Coffee, Mocha Coffee, Masala Chai, Ginger Tea & Green Tea (for Diabetic and Non Diabetic)
» Silica Gel Crystal & Beads
» Sodium Chlorite Liquid from Powder (31% Liquid Naclo2)
» Sodium Silicate (Soda Ash and Silica Sand)
» Spice Oil Extraction from Curry Leaves (100% EOU)
» Spice Powder (Turmeric, Chilli, Pepper, Coriander and Cumin Powder)
» Spices (100 % EOU)
» Spices (Masala)
» Spices (Turmeric Powder, Red Chilli Powder, Dhaniya Powder, Garam Masala, Sabji Masala, Popcorn Masala)
» Spices in Pouch Packing
» Stable Bleaching Powder
» Micronutrient Fortified Energy Dense Food
» Ferric Pyrophosphate (Food Grade/ Pharma Gade)
» Trading/Export of Spices (Coriander, Chilli, Turmeric & Cumin) Business
» Sterile Water for Injection
» Sugarcane Juice Preservation
» Surgical Cotton & Bandages
» Surgical Cotton & Bandages (EOU)
» Surgical Cotton
» Tailoring Chalk (Triangle Pattern)
» Tennis Ball (Used in Playing Cricket)
» Tomato Products
» Tundish Insulated Powder (radex) –Turmeric, Dhania and Chilli Powder
» Urea Formaldehyde Uf85
» Virgin Coconut Oil
» Washing Powder
» Welding Electrodes
» Whole Spices Processing (Cleaning / Grinding & Packaging)
» Wire Drawing Lubricants
» Wire Nail
» Wire Nail & Wire Drawing Plant
» Workshop for Motors of Low Voltage (up-to 1000V) and Distribution Transformers (Maintenance, Overhauls and Repairs)
» Carbon Fiber, Carbon Fiber Composites, Graphite Fibre and Carbon Fiber Reinforced Polymer Projects
» Carbon Composite Fiber
» Carbon Fiber
» Carbon Fiber Composites
» Cellulose Fiber
» Cold Storage
» Production of Carbon Black
» Production of Composite Materials
» Setting Up A Hospital in India

Highly Profitable Business Ideas for You

Manufacturing Business of
Blood Collection Tubes (Vacutainer)

A vacuum blood collection tube is a sterile glass or plastic test tube with a stopper that creates a vacuum inside the tube so that a preset volume of liquid can be depicted. By avoiding needles from coming into contact with humans and so being contaminated, the vacuum blood collection tube avoids needle stick injuries. A double-pointed needle is fitted to a plastic tubular adapter in the vacuum blood collecting tube. Double-pointed needles come in a variety of gauge sizes. The needle's length varies from 1 to 1 1/2 inches. Additional elements may be present in vacuum blood collection tubes, which are used to preserve blood for treatment in a medical laboratory. These additives come in the form of ultrasonic nozzle-applied films.

Clinics and laboratories commonly utilise a vacuum blood collection tube to store blood for future testing. An alternative for vacuum blood collection tubes has been developed that can store blood for testing purposes for a prolonged period of time. Vacuum blood collection tubes come in a variety of sizes and specimen kinds. When the needle punctures the cap of a blood collection tube, the vacuum is dissipated over time, and blood is not pulled into the tube.

Blood Collection Tubes Market is expected to reach $2.81 billion by 2025, with a CAGR of 7.1 percent from 2020 to 2025. Many disorders require the use of blood in their diagnosis and treatment. The collection, storage, and management of blood after it has been obtained from a donor are all part of the blood processing process. The blood collection tubes, also known as vacationers, are disinfected and have a safety-engineered stopper with multiple labelling options with the volume on it and the colour of the caps shows the additives in the tube. The need for blood collection tubes is being driven by the increased use of blood samples in diagnostics and the requirement for blood components in the treatment of numerous disorders.

PROJECT COST ESTIMATE

CAPACITY :

Blood Collection Tubes (Vacutainer) 13x100 with EDTA	***: 100,000 Nos. Per Day***
Blood Collection Tubes (Vacutainer) 13x75 Plain	***: 100,000 Nos.Per Day***
Plant & Machinery	**: ₹ 345 Lakhs**
Cost of Project	**: ₹ 983 Lakhs**
Rate of Return	**: 30%**
Break Even Point:	**: 51%**

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

Profitable Manufacturing Opportunity:

Extracting Nicotine from Tobacco Leaves and Waste for Startups

The extraction of nicotine from tobacco leaves and waste offers a highly lucrative business opportunity for startups and new-age entrepreneurs. With the global shift towards using nicotine as a raw material for nicotine replacement therapies (NRT), e-liquids, pharmaceuticals, and agrochemicals, this project has emerged as a high-potential investment idea. India, being one of the largest producers of tobacco in the world, provides abundant raw material and a competitive edge for entrepreneurs interested in entering this specialized manufacturing sector.

Why Startups Should Choose This Business

Startups looking to invest in a niche yet high-demand industry should consider nicotine extraction due to several compelling reasons. First, nicotine extraction from tobacco waste or leaves utilizes agricultural by-products, which otherwise have limited value. This promotes waste-to-wealth practices while supporting environmental sustainability. Secondly, with the booming demand in the pharmaceutical and e-cigarette industries, purified nicotine is becoming a globally traded commodity with substantial margins.

Moreover, the barriers to entry in this segment are moderate. While the manufacturing process is technically intensive, it offers scalability, and the technology is commercially available through turnkey solutions. Entrepreneurs entering early into this segment can build brand strength and capture market share before the sector becomes saturated.

Market Overview and Growth Trends

The global nicotine market is projected to reach USD 6.8 billion by 2030, growing at a CAGR of 7.4% between 2023 and 2030. The growth is driven by increasing demand for e-cigarettes, nicotine gum, lozenges, and transdermal patches used in nicotine replacement therapies. Countries like the USA, UK, Germany, and China have seen a rapid rise in nicotine-based product consumption, creating high export potential for India.

India produces over 800 million kilograms of tobacco annually, and much of this yield includes waste or low-grade leaves not suitable for smoking or chewing. This creates a significant opportunity to tap into untapped resources for high-purity nicotine production. As regulations tighten on synthetic nicotine usage, the demand for naturally extracted nicotine from tobacco waste will only grow stronger.

Export Potential

Nicotine extracted in India is already being exported to more than 50 countries. European nations, Japan, and the USA remain the largest consumers. With the right certifications such as GMP, WHO-GMP, REACH, and ISO, Indian manufacturers can target global pharma companies, e-liquid brands, and agri-chemical producers. Export incentives under Indian government schemes for agro-based and chemical-based industries further boost profit potential for new ventures.

PROJECT COST ESTIMATE

CAPACITY:	
Nicotine Powder	*: 120 Units Per Annum*
Nicotine: 100ml Bottle each	*: 5,25,000 Units Per Annum*
Plant & Machinery	**: ₹ 11 Crore**
Cost of Project	**: ₹ 33 Crore**
Rate of Return	**: 37%**
Break Even Point	**: 41%**

Manufacturing Process

The process of extracting nicotine involves the following steps:

1. **Raw Material Preparation:** Tobacco leaves and waste are shredded and dried to ensure uniform particle size and moisture content.
2. **Solvent Extraction:** The nicotine is extracted using polar solvents such as water, ethanol, or a mix with acid regulators.
3. **Liquid-Liquid Separation:** The extract undergoes phase separation using aqueous and organic solvents to purify the nicotine.
4. **Distillation:** Multiple-stage vacuum distillation is used to concentrate and isolate nicotine.
5. **Purification:** Activated carbon and membrane filtration are used for final purification to pharmaceutical or industrial grade.
6. **Formulation and Packaging:** The nicotine is standardized and packed as liquid or powder based on market requirements.

Nicotine extraction from tobacco waste is not just a profitable venture but also an environmentally sustainable one. It creates value from agricultural residues and positions the entrepreneur at the crossroads of pharmaceuticals, wellness, and alternative smoking technologies. With increasing global demand, access to raw materials, and government support, this business is ideal for startups looking to establish themselves in a high-margin, export-oriented manufacturing sector.

Biomass Briquettes from Bio Waste

Among the non-conventional forms of energy, Bio-Energy offers vast potential under Indian conditions, due to the wide spectrum of BIOMASS available in different agro-climatic regions of the country.

Worldwide, the energy stored in biomass through photosynthesis is approximately $3x10^{21}J$ (90% in trees) every year, which is nearly 10 times the world's annual energy use. Even through the total renewable biomass resource for energy far exceeds the world's total energy requirement, its volume exploitation remains limited because of the present low cost of fossil fuels, the heterogeneous nature of biomass, and the area over which the biomass must be collected for large-scale applications.

Biomass feed, especially agro-residues, is available in different forms, such as husks, straw, and stalks of various and numerous crops. Due to this heterogeneous nature, the utility of these materials for energy becomes limited, and energy conversion processes tend to become biomass specific. Biomass briquettes are a proven way of generating energy from bio-waste. Different types of waste have been utilized in order to develop biomass briquettes. Biomass briquettes derived from Mustard, Cotton, Guar, Saw Dust and Peanut shell Agro waste could result in feasible on-site fuel production.

PROJECT COST ESTIMATE

CAPACITY

Capacity	**: 20 MT Per Day**
Plant & Machinery	**: ₹ 52 Lakhs**
Cost of Project	**: ₹ 94 Lakhs**
Rate of Return	**: 20%**
Break Even Point	**: 73%**

Biomass briquettes can typically provide between 3-15 per cent of the input energy into the power plant. The objective behind the move, is to reduce air pollution caused due to burning of surplus biomass residue in fields by creating an alternate market for its large-scale utilisation in power plants as well as reduce carbon emission from coal-fired power plants.

The global Biomass Briquette market is valued at 320 million US$ in 2017 and will reach 570 million US$ by the end of 2025, growing at a CAGR of 7.3% during 2018-2025. The global biomass briquettes market is segmented into North America, Latin America, Western Europe, Eastern Europe, the Middle East and Africa, and Asia Pacific. Of these regions, Europe and North America are expected to be key regions for the growth of this market over the forecast tenure. The utilization of the biomass briquettes production technologies is high to convert their biomass into useful energy sources.

Silicon Ingots:

A Strategic Business Opportunity for Emerging Entrepreneurs

Silicon ingots form the backbone of the modern electronics and solar industries. These cylindrical, purified forms of silicon are sliced into wafers and used in semiconductors, integrated circuits, solar cells, and more. The rising global emphasis on renewable energy and technological advancement has created an urgent demand for high-purity silicon ingots. For startups and entrepreneurs looking to invest in a forward-looking, high-demand industry, silicon ingot manufacturing is an ideal opportunity.

Why Startups Should Choose Silicon Ingot Manufacturing

1. **Growing Demand from Multiple Sectors:** Silicon ingots are essential in manufacturing photovoltaic (PV) cells, a key component in solar panels. With governments across the globe pushing for solar energy adoption to reduce carbon footprints, the demand for solar-grade silicon is skyrocketing. In addition, the electronics and semiconductor industries rely heavily on silicon ingots, making the market highly diverse and stable.
2. **Strategic Alignment with Global Trends:** The world is transitioning toward clean energy and digital transformation. Solar energy is not just a trend but a necessity for achieving net-zero carbon targets. Silicon ingot production supports both solar technology and advanced electronics, aligning well with India's Make in India and green energy missions.

PROJECT COST ESTIMATE

CAPACITY

Project Capacity	: 100 MT Per Day
Plant & Machinery	: 33 Crore
Cost of Project	: 93 Crore
Rate of Return	: 27%
Break Even Point	: 78%

3. **High ROI and Scalability:** Silicon ingot manufacturing requires a one-time capital-intensive setup but offers long-term profit due to consistent demand and high export potential. Once the production line is optimized, the business is highly scalable, and additional capacities can be added with minimal disruption.

Market Size, Trends, and Analysis

The global silicon wafer market size was valued at over USD 10 billion in 2024 and is projected to grow at a CAGR of 5.5% till 2030. Asia-Pacific, particularly India, is emerging as a manufacturing hub due to lower labor costs, government support, and increasing investments in renewable infrastructure and electronics.

India's National Solar Mission and Production Linked Incentive (PLI) schemes offer further impetus to domestic manufacturing. Indian startups that venture into silicon ingot production can benefit from capital subsidies, tax rebates, and a ready domestic and international market.

Key growth drivers:

- Increased solar panel installation in rural and urban sectors.
- Growth in electric vehicles and automotive electronics.
- Expansion of telecom and 5G infrastructure.
- Export potential to high-demand countries like the USA, Germany, and Japan.

Manufacturing Process of Silicon Ingots

1. **Raw Material Procurement:** The base material used is metallurgical-grade silicon, which is further purified to electronic or solar grade.
2. **Purification:** Through a process called chemical vapor deposition or Siemens process, the silicon is purified to a very high level (99.9999% purity or more).
3. **Crystal Growth (Czochralski Process):** In this step, purified silicon is melted in a quartz crucible, and a seed crystal is dipped into the melt and slowly pulled upward while rotating to form a single large cylindrical crystal—known as a monocrystalline silicon ingot.
4. **Ingot Shaping:** The cylindrical ingot is shaped and trimmed to desired dimensions. The ends are cut off, and the ingot is made uniform in diameter.
5. **Annealing and Cooling:** The ingots undergo thermal annealing to relieve internal stress and are cooled gradually to room temperature.
6. **Quality Testing and Grading:** The ingots are subjected to electrical and structural tests to assess purity and crystal integrity. Based on the results, they are graded for different applications.

Export Potential

India can position itself as a reliable supplier of solar and electronic grade silicon ingots. Countries like Germany, Japan, the U.S., and South Korea, which are leaders in electronics and solar installations, depend on high-quality silicon imports. With the right quality certifications, Indian manufacturers can tap into this lucrative export market.

Conclusion

The manufacturing of silicon ingots is a strategically sound business idea for entrepreneurs seeking a technology-driven, high-demand, and environmentally aligned opportunity. It is not just a profitable venture but also one that supports the global sustainability movement and contributes to technological advancement. For startups aiming to make a significant impact in green energy or semiconductor industries, investing in silicon ingot production is a smart move with long-term growth potential.

Start Production of Silica from Rice Husk Ash

In the concrete business, rice husk ash silica is a viable alternative to conventional sand, particularly in areas where sand is scarce. Silica is extracted from rice husk ash using high-temperature calcination and carbonization procedures to produce silicon dioxide, which can be used to concrete mixes to improve qualities like as strength, density, air entrainment, and freeze-thaw resistance.

1. Adhesive: Silica is used as a reinforcing and thickening agent, as well as to improve bond strength. When a liquid adhesive comes into touch with a solid surface, the dispersed silica particles within it solidify quickly. Adhesive based on natural and synthetic rubber.

2. Chappals: Silica is utilised in shoe soles because of its wear and tear durability, non-scuffing properties, and the ability to create compounds with light colours or even transparent materials.

3. Conveyor Belt & Transmission Belt: Due to its small particle size and complex aggregate structure, silica is employed to improve tear strength.

4. PVC Sheets: Silica improves pigment dispersion, acts as a separating agent and an absorbent to increase flow, and gives the compound a dry feel.

5. Railway Pads: Silica is utilised in railway pads for the following reasons:

7. Rubber Products and Rubber Hoses: In industrial rubber, silica gives higher strength and durability, as well as improved heat resistance and tear strength, to industrial Rubber Belts and Rubber Hoses.

8. Silicon Tubes: Silicone rubber is utilised in a variety of applications where its distinct qualities are advantageous. Many of these characteristics are heavily influenced by the type and amount of filler used in the compound.

In 2019-20, the India silica market was worth USD 46.8 million. It is expected to grow at a CAGR of 6.5 percent in the next years. Because of its anti-caking and super absorption qualities, strong product demand in the food industry has helped the market gain traction in recent years.

PROJECT COST ESTIMATE

CAPACITY :

Silica	*: 5.80 MT Per Day*
Activated Carbon (by product)	*: 0.64 MT Per Day*
Sodium Carbonate (by product)	*: 0.96 MT Per Day*
Plant & Machinery	: ₹ 745 Lakhs
Cost of Project	: ₹ 1121 Lakhs
Rate of Return	: 27%
Break Even Point	: 45%

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