Vinylidene Chloride (VDC) and Polyvinylidene Chloride (PVDC) Manufacturing Industry.

Investment Opportunity for Entrepreneurs

The predominant demand for VdC / PVdC is in the food and pharmaceutical packaging sector
Introduction

Vinylidene Chloride (VDC)

Vinylidene chloride, also called 1,1-dichloroethylene, a colourless, dense, toxic, volatile, flammable liquid belonging to the family of organic halogen compounds, used principally in combination with vinyl chloride, acrylonitrile, or methyl methacrylate for the manufacture of a class of plastics called saran. Vinylidene chloride is also used as a starting material for making methylchloroform, or 1, 1, 1-trichloroethane, and a solvent useful in cleaning electrical machinery.

\[
\begin{align*}
\text{CH}_2=\text{C} & \quad \rightarrow \quad \{\text{CH}_2=\text{C}\}_{n} \\
\text{Cl} & \quad \text{Cl} \\
\text{Cl} & \quad \text{Cl}
\end{align*}
\]

vinylidene chloride \quad poly(vinylidene chloride)
Vinylidene chloride is used as an intermediate in chemical synthesis and to produce polyvinylidene chloride copolymers. The primary acute (short-term) effects in humans from vinylidene chloride exposure are on the central nervous system (CNS), including CNS depression and symptoms of inebriation, convulsions, spasms, and unconsciousness at high concentrations. Low-level, chronic (long-term) inhalation exposure of vinylidene chloride in humans may affect the liver. Animal studies indicate that chronic exposure to vinylidene chloride can affect the liver, kidneys, CNS and lungs. Human data are considered inadequate in providing evidence of cancer from exposure to vinylidene chloride. The most recent cancer classification for vinylidene chloride can be found on IRIS.
Uses

- Vinylidene chloride is used as an intermediate for organic chemical synthesis.
- Vinylidene chloride is also used in the production of polyvinylidene chloride copolymers. The major application of these chloride copolymers is in the production of flexible films for food packaging.
- These copolymers are also used extensively in many types of packing materials, as flame retardant coatings for fiber and carpet backing and in piping, coating for steel pipes, and adhesive applications.
Market Outlook

The global Vinylidene Chloride market is valued at million US$ in 2017 and will reach million US$ by the end of 2025, growing at a CAGR of during 2018-2025.

The Vinylidene Chloride market is expected to witness high growth owing to the high growth in the Paint Industry, the food & beverage industry and the Semiconductor industry. The paint industry is projected to see more than 6% CAGR growth in the next seven years due to the increasing end use demand for architectural & decorative wall paints, increasing industrial demand especially in automobile industry, and global economic development.
The Food & beverage industry is expected to see growth of more than 7% CAGR by 2022 due to the growing end user consumption, similarly the Semiconductor industry is expected to see growth of more than 10% CAGR over the forecasted period mainly due to the growing demand of electronic components applications in automobile industry, smartphone industry, and other digital type industry.

On the basis of end-user industry, the vinylidene chloride market is segmented into pharmaceutical, food & beverage, agriculture, manufacturing, construction, automotive, electronic, and cosmetic. In terms of volume, the food & beverage segment accounted for the largest share of more than 40%, while, the market share for pharmaceutical was estimated to be more than 25%. In the forecasted period, the market is expected to grow largely by the demand from pharmaceutical industry and from construction industry.
The less growth is expected from the food & beverage industry due to the increasing awareness about its restraints in food packaging and growing substitutes such as EVOH (Ethylene Vinyl Alcohol). Thus, the expected growth rate is less than 6% CAGR by 2022, in terms of volume.

| Vinylidene Chloride (Thousands Units) and Revenue (Million USD) | Market Split by Product Type | such as Vinyl Chloride-Chlorine Process, Vinyl Chloride-Chlorine Hydride Process, 1,2-Dichloroethane-Chlorine Process, Others. Furthermore, the research study is segmented by Application such as Polyvinylidene Chloride Industry, Organic Synthesis Intermediates, Others & Other with historical and projected market share and compounded annual growth rate. |
## Indian import

<table>
<thead>
<tr>
<th>Period (April to March)</th>
<th>In metric tonne</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-14</td>
<td>5215</td>
</tr>
<tr>
<td>2014-15</td>
<td>5863</td>
</tr>
<tr>
<td>2015-16</td>
<td>5863</td>
</tr>
<tr>
<td>2016-17</td>
<td>6266</td>
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</tbody>
</table>
Polyvinylidene Chloride (PVDC)

Polyvinylidene chloride (PVDC), a synthetic resin produced by the polymerization of vinylidene chloride. It is used principally in clear, flexible, and impermeable plastic food wrap.

The applications of Polyvinylidenechloride (PVDC), are predominantly packaging and barrier films, often as the barrier layer in multi-layer structures.

The outstanding property of PVDC is its low permeability to water vapour and gases—making it ideal for food packaging. Copolymers of vinylidene chloride and other monomers are also marketed. The best known is Saran, a copolymer consisting of about 87 percent vinylidene chloride and 13 percent vinyl chloride. Saran was introduced by the Dow Chemical Company in 1939 and is still a widely used transparent food wrap.
Market Outlook

PVDC plays an important role in blister packaging as coating or lamination on PVC. The gas and moisture permeability of PVC blister packaging is reduced to certain extent with the use of PVDC. Moreover, it provides an excellent barrier to both water vapor and oxygen.

The global PVDC food packaging market is expected to register decent growth during the forecast period driven by the middle class of developing countries. Demand for packaged food is rising in emerging regions due to the rapid urbanization and growing disposable income. Growth in such regions in expected to impact the food packaging industry positively.
Specialty material such as PVDC is gaining importance in the food packaging market. The increasing demand for packaged food and beverages together with growing use of packaging material in various food service outlets and expanding working population has given impetus to PVDC food packaging market. The feasible properties of PVDC make is one of the most favored raw material for food packaging. The PVDC material meets the requirements of the governing authorities of North America and European region as it has lower environmental impacts. This factor acts as a driver for the global PVDC food packaging market. The PVDC film is environment-friendly which makes it suitable for the use of food packaging. The PVDC increasing demand of PVDC films in the packaging of processed meat, cheese, bread, snacks and the instant food is anticipated to grow the market during the forecast period.
The market for PVDC food packaging can be segmented on the basis of application as dairy products, fruits and vegetables, pet food, baby food, confectionary, Meat, Poultry & Seafood, and others. The meat, poultry and seafood segment is expected to grow at a higher CAGR during the forecast period.

The global PVDC market in terms of value is expected to reach above $xx million by 2019, growing at a significant CAGR from 2014 to 2019. North America, Europe, Asia-Pacific and Rest of the World (RoW) have been segmented in the global PA 46 market report.
Polyvinylidene Chloride (PVDC) Market Regional Segment Analysis:

- North America
- Europe
- China
- Japan
- Southeast Asia
- India
1. What is Vinylidene Chloride / Polyvinylidene Chloride Manufacturing industry?

2. How has the Vinylidene Chloride / Polyvinylidene Chloride Manufacturing industry performed so far and how will it perform in the coming years?

3. What is the Project Feasibility of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Plant?

4. What are the requirements of Working Capital for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?
5. What is the structure of the Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business and who are the key/major players?

6. What is the total project cost for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?

7. What are the operating costs for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

8. What are the machinery and equipment requirements for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?
9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

10. What are the requirements of raw material for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

11. Who are the Suppliers and Manufacturers of Raw materials for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?

12. What is the Manufacturing Process of Vinylidene Chloride / Polyvinylidene Chloride?
13. What is the total size of land required for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

14. What will be the income and expenditures for Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?

15. What are the Projected Balance Sheets of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

16. What are the requirement of utilities and overheads for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

17. What is the Built up Area Requirement and cost for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?
18. What are the Personnel (Manpower) Requirements for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?

19. What are Statistics of Import & Export for Vinylidene Chloride / Polyvinylidene Chloride?

20. What is the time required to break-even of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?

21. What is the Break-Even Analysis of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

22. What are the Project financials of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?
23. What are the Profitability Ratios of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Project?

24. What is the Sensitivity Analysis-Price/Volume of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

25. What are the Projected Pay-Back Period and IRR of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

26. What is the Process Flow Sheet Diagram of Vinylidene Chloride / Polyvinylidene Chloride Manufacturing project?
27. What are the Market Opportunities for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing plant?

28. What is the Market Study and Assessment for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?

29. What is the Plant Layout for setting up Vinylidene Chloride / Polyvinylidene Chloride Manufacturing Business?
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- Introduction
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- Uses & Applications
- List of Plant & Machineries
- Miscellaneous Items and Accessories
- Instruments, Laboratory Equipments and Accessories
- Electrification, Electric Load and Water
- Maintenance, Suppliers/Manufacturers of Plant and Machineries
- Process of Manufacture
- Flow Sheet Diagram
- List of Raw Materials
- Availability of Raw Materials
- Requirement of Staff & Labour
Skilled & Unskilled Labour
Requirement of Land Area
Built up Area
Plant Layout.

Along with financial details as under:

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• Indigenous Machineries
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Reasons for Buying our Report:

• This report helps you to identify a profitable project for investing or diversifying into by throwing light to crucial areas like industry size, market potential of the product and reasons for investing in the product.

• This report provides vital information on the product like its characteristics and segmentation.

• This report helps you market and place the product correctly by identifying the target customer group of the product.
• This report helps you understand the viability of the project by disclosing details like machinery required, project costs and snapshot of other project financials.

• The report provides a glimpse of government regulations applicable on the industry.

• The report provides forecasts of key parameters which helps to anticipate the industry performance and make sound business decisions.
Our Approach:

- Our research reports broadly cover Indian markets, present analysis, outlook and forecast for a period of five years.
- The market forecasts are developed on the basis of secondary research and are cross-validated through interactions with the industry players.
- We use reliable sources of information and databases. And information from such sources is processed by us and included in the report.
The report titled “Market Survey cum Detailed Techno Economic Feasibility Report on Vinylidene Chloride / Polyvinylidene Chloride.” provides an insight into Vinylidene Chloride / Polyvinylidene Chloride market in India with focus on uses and applications, Manufacturing Process, Process Flow Sheets, Plant Layout and Project Financials of Vinylidene Chloride / Polyvinylidene Chloride project. The report assesses the market sizing and growth of the Indian Vinylidene Chloride / Polyvinylidene Chloride Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line. And before diversifying/venturing into any product, they wish to study the following aspects of the identified product:
Good Present/Future Demand
Export-Import Market Potential
Raw Material & Manpower Availability
Project Costs and Payback Period

We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in the Vinylidene Chloride / Polyvinylidene Chloride sector in India along with its business prospects. Through this report we have identified Vinylidene Chloride / Polyvinylidene Chloride project as a lucrative investment avenue.
Niir Project Consultancy Services (NPCS) can provide Detailed Project Report on Vinylidene Chloride (VDC) and Polyvinylidene Chloride (PVDC) Manufacturing Industry. Investment Opportunity for Entrepreneurs

The predominant demand for VdC / PVdC is in the food and pharmaceutical packaging sector.

See more

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NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

Our Market Survey cum Detailed Techno Economic Feasibility Report provides an insight of market in India. The report assesses the market sizing and growth of the Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line.
And before diversifying/venturing into any product, they wish to study the following aspects of the identified product:

- Good Present/Future Demand
- Export-Import Market Potential
- Raw Material & Manpower Availability
- Project Costs and Payback Period

The detailed project report covers all aspect of business, from analyzing the market, confirming availability of various necessities such as Manufacturing Plant, Detailed Project Report, Profile, Business Plan, Industry Trends, Market Research, Survey, Manufacturing Process, Machinery, Raw Materials, Feasibility Study, Investment Opportunities, Cost and Revenue, Plant Economics, Production Schedule,
Working Capital Requirement, uses and applications, Plant Layout, Project Financials, Process Flow Sheet, Cost of Project, Projected Balance Sheets, Profitability Ratios, Break Even Analysis. The DPR (Detailed Project Report) is formulated by highly accomplished and experienced consultants and the market research and analysis are supported by a panel of experts and digitalized data bank.

We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in India along with its business prospects......Read more
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- Turnkey Project Consultancy/Solutions
- Entrepreneur India (An Industrial Monthly Journal)
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- We help catalyze business growth by providing distinctive and profound market analysis
- We serve a wide array of customers, from individual entrepreneurs to Corporations and Foreign Investors
- We use authentic & reliable sources to ensure business precision
Our Approach

Requirement collection

Thorough analysis of the project

Economic feasibility study of the Project

Market potential survey/research

Report Compilation
Contact us

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