**Production of** ***Acetophenone, Alcohols, Alletrhin, Fine Chemicals, Formaldehyde, Granulated Fertilizers, Anthracene, Barium Potassium Chromate Pigment, Chlorophyll, Chemicals from Acetaldehyde, Fats, Milk, Oranges, Wood, Calcium Cyanamide, Carboxymethylcellulose, Carotene, Manufacture of Dye Intermediates and Dyes, Granulated Triple Superphosphate and Hydroquinone***

# Introduction

**Industrial chemicals are chemicals related to the production of chemical compounds. Basic and industrial chemicals are produced in huge quantities and are critical ingredients for products used by both industry and the general consumer. They include chemical raw materials derived from oil (petrochemicals), basic inorganics and intermediates for chemical processes.**

**The Indian chemical industry stands as the third largest producer in Asia and 12th in world, in terms of market volume. The estimated size of Indian chemicals sector stands at approximately USD 139 billion. Fourth largest global producer of agro chemicals. Total production of the major chemicals including petrochemicals was 23.9 million tons during 2015-16 while production of polymers stood at around 9 million tons. Chemicals sector also acts as a key enabling industry and provides support for variety of other sectors like agriculture, construction, leather etc.**

**Chemical Industry is one of the oldest industries in India, which contributes significantly towards industrial and economic growth of the nation. Since this industry has numerous forward and backward linkages, it is called the backbone of the industrial and agricultural development of the country and provides building blocks for many downstream industries.**

**India accounts for approximately 15% of the world production of dyestuff and dye intermediates. Total production of the major chemicals including petrochemicals was 23.9 Million tons in 2015-16.**

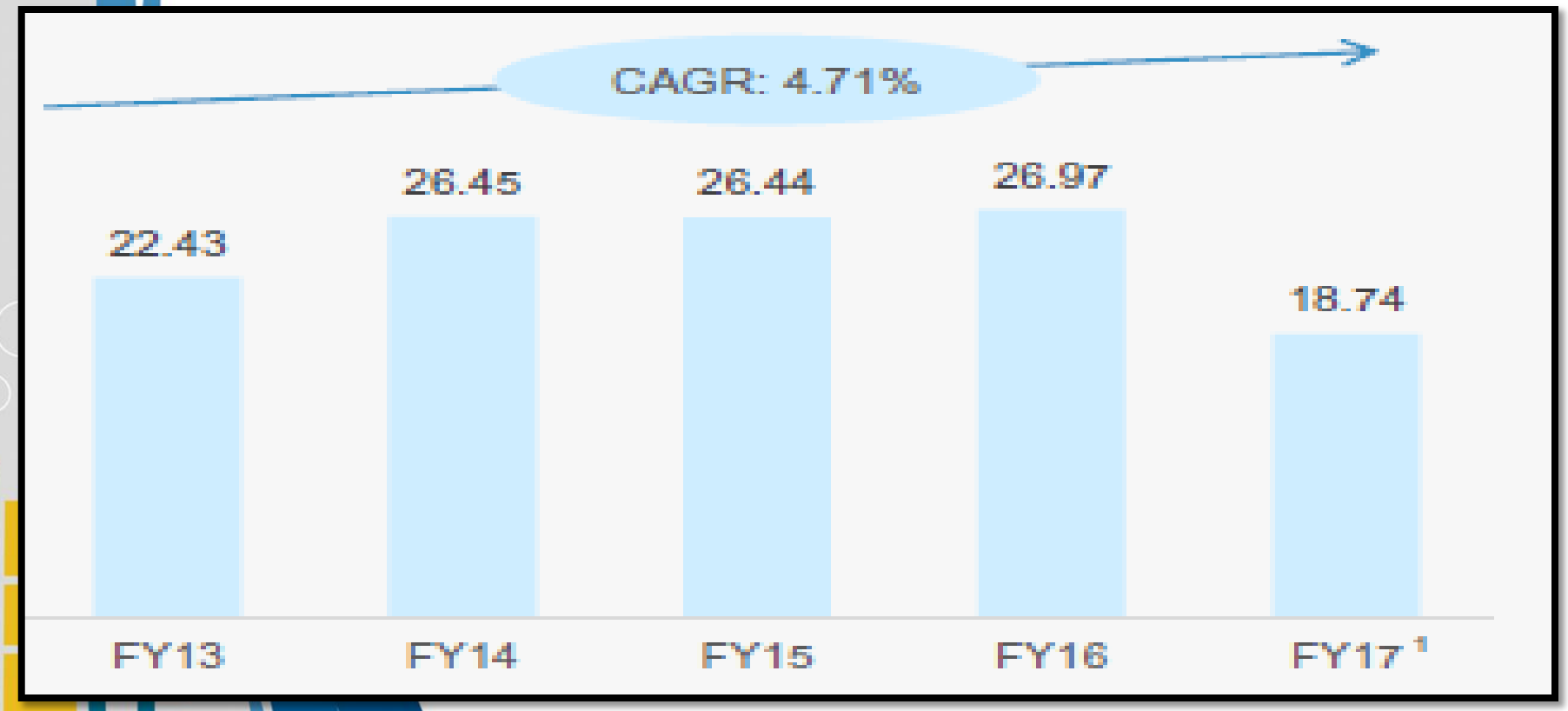
**Polymer demand is expected to grow by 8-10% with healthy growth in industries such as clothing, automobiles etc. Chemicals is one of the most diversified in the world, covering more than 70,000 commercial products.**

**India's chemical industry is likely to touch $214 billion (approx 13, 91,000 crore) in the next four years from $139 (approx 9, 03,500 crore) in fiscal 2014 with estimated growth of around 9 per cent a year amid growing demand scenario.**

**The global chemical industry is estimated at $4.3 trillion, with Indian chemical industry accounting for $147 billion in 2015. The Indian chemical industry is expected to grow to $226 billion by 2020.**

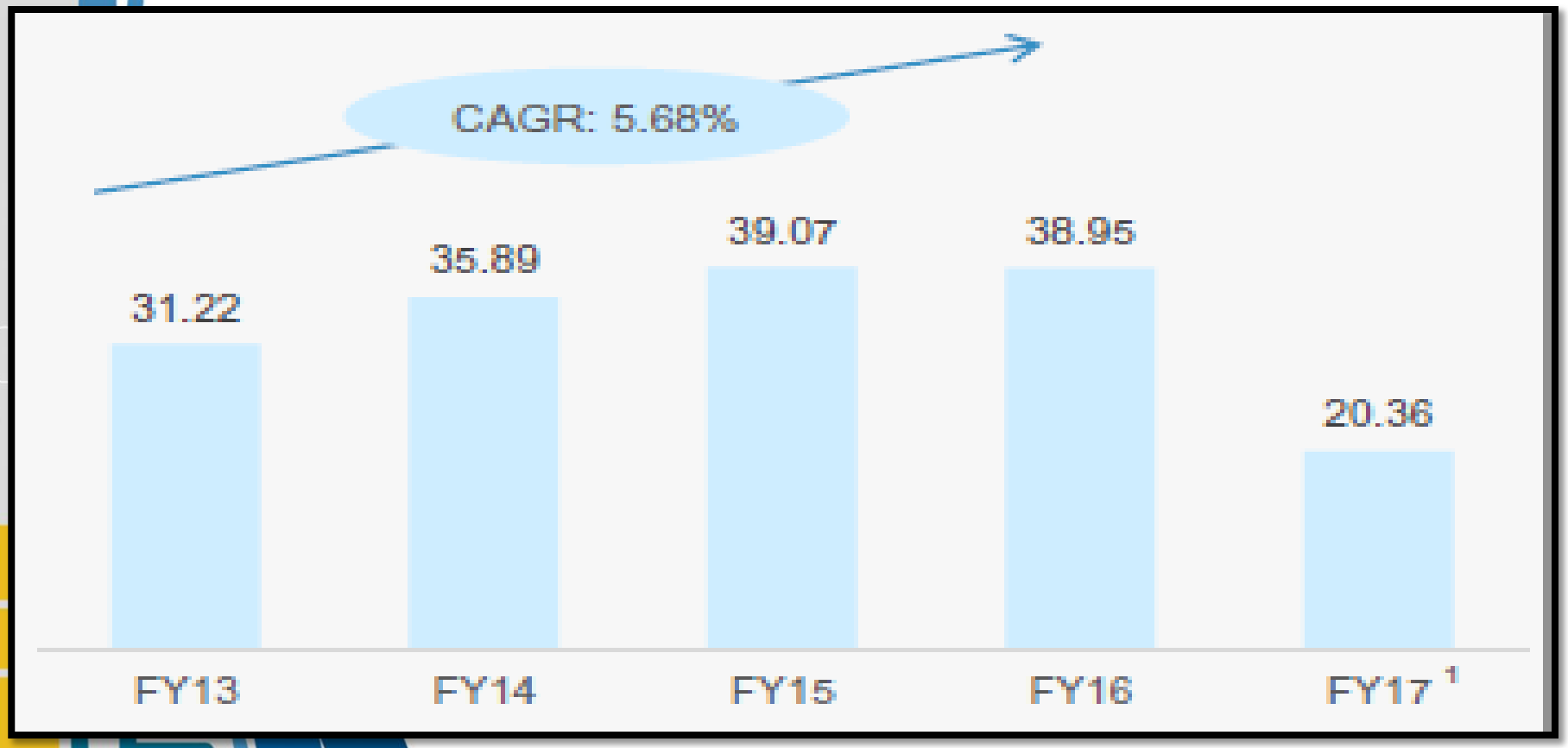
**Chemical exports from India stood at USD18.74 billion for FY17. Exports in the chemical industry grew from USD22.43 billion in FY13 to USD26.97 billion in FY16, registering a growth of 4.71 per cent.**

# Chemical Exports of India (USD Billion)



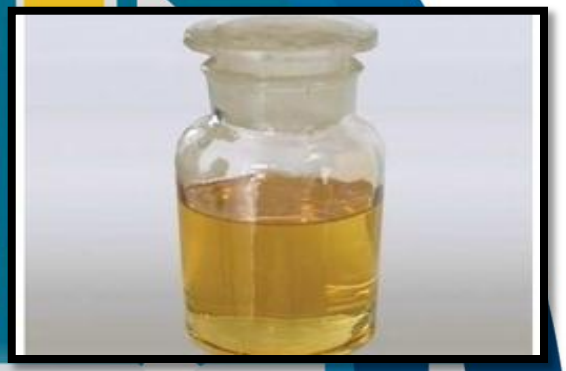
**Total imports of chemicals grew from USD31.22 billion in FY13 to USD38.95 billion in FY16, a CAGR of 5.68 per cent Total imports of chemicals reached USD20.36 billion in the FY17.**

# India's Chemical Imports (USD Billion)



## *Acetophenone*

**Acetophenone is an organic compound and one of the simplest forms of ketone. Acetophenone is a viscous colorless liquid and is an important precursor in the production of fragrances and resins. The applications of acetophenone include resin precursors, pharmaceuticals, fragrances, chewing gums and it is also used as a laboratory reagent.**



**Acetophenone are used in applications such as perfumes and fragrances while it also acts as a precursor in the production process of various chemicals. This makes acetophenone a major form of ketone to be produced commercially. In, terms of demand the demand for acetophenone is high from the perfumes and fragrances market where acetophenone is an essential ingredient for creating fragrances resembling cherry, almond, jasmine, honeysuckle and strawberry fragrances. Acetophenone is also used as a fragrance ingredient in detergents, soaps, lotions and creams. It is also used as a flavoring agent in nonalcoholic beverages, tobacco and some foods.**

**Acetophenone as a product is also used in chewing gums and forms one of the various additives to be used for making cigarettes. Naturally, acetophenone occurs in many food products such as apple, apricot, cheese, beef, banana, and cauliflower. Earlier, acetophenone was used in medicines as an anticonvulsant and hypnotic. Acetophenone can also be used as a catalyst in olefin polymerization.**

**Increasing consumption of Acetophenone in various applications such as ingredient of fragrances in food & beverages, specialty solvent soaps in plastics and resins and in polymerization of olefins as a catalyst has resulted in growing demand for global acetophenone market.**

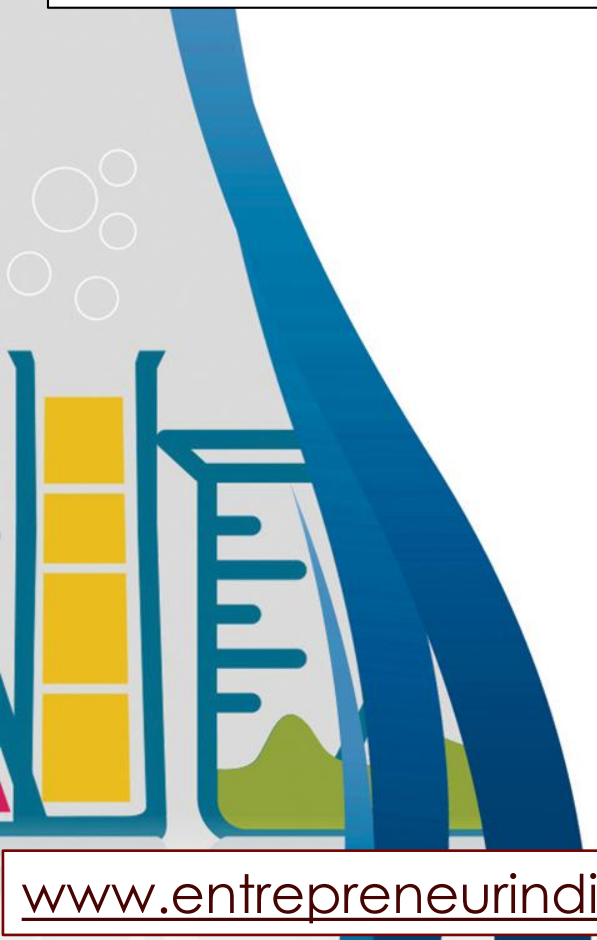
**Acetophenone (formula: C6H5C (O) CH3) is an organic compound and the simplest form of sweet-smelling ketone. It is a thick colourless liquid and is an important precursor to useful fragrances and resins. It naturally occurs in apple, cauliflower, apricot, cheese, banana and beef. By different methods, acetophenone can be obtained. Acetophenone is accomplished by reaction of ethyl benzene with oxygen, which is also one of the key manufacturing methods for acetophenone in the industry.**

**One of the key drivers for the global acetophenone market can be attributed to the application of precursor to resins. Also, increasing demand from end use industries such as use in pharmaceuticals, food & beverages, consumer goods (detergent, soaps, lotions and creams) and others (tobacco, chewing gum and cigarettes) are fuelling the growth of the acetophenone market. Increasing disposable income and inclination towards luxury goods in emerging economies is also expected to drive the global acetophenone market in coming five years. However, transient corneal injury and skin irritation in human's as well as numerous regulations concerns act as restraints in the growth of global acetophenone market.**

**Acetophenone Market size is estimated to register a notable growth in the forecast timeframe owing to its rising consumption in perfume & fragrance production. It is an extension of ketone with improved sweet smelling properties. Natural presence in substantial number of sources including apricot, apple, banana, beef, cauliflower and cheese has enhanced the product development.**

**Strong application outlook in fragrances, pharmaceuticals, resins, laboratory reagent and chewing gums will drive the acetophenone market growth. Increasing product usage as precursor in manufacturing process of several chemicals has enhanced the industry demand. Optimum viscosity, colorless and pungent fragrance are key properties encouraging the product scope.**

**Extensive product usage as perfumery ingredient in detergents, soaps, lotions and creams and as specialty solvent in resins and plastics will drive the acetophenone market.**



# *Industrial Alcohol*

**Industrial alcohol is a distilled form of ethyl alcohol that is produced and sold for varied beverage purposes. Industrial alcohol is usually distributed in the form of pure ethyl alcohol. Pure ethyl alcohol is used in the chemical laboratories or industries for the purpose of sanitizing, cleaning and other solvent usage. Moreover, this type of ethyl alcohol is also used in medicines, as food ingredient, flavoring and other cosmetic products. In medical sector, industrial alcohol is used in the process of manufacturing vaccines, syrups and antiseptics. Ethyl alcohol, popularly termed Ethanol is volatile, flammable and colorless liquid and is the most widely used biofuel globally**

**The production of industrial alcohol is through fermentation and distillation process that requires a certain temperature of heat as energy to develop. Initially industrial alcohol out broke from the growth of alcoholic beverages but now a days it is used as a solvent and synthesizing other chemicals.**

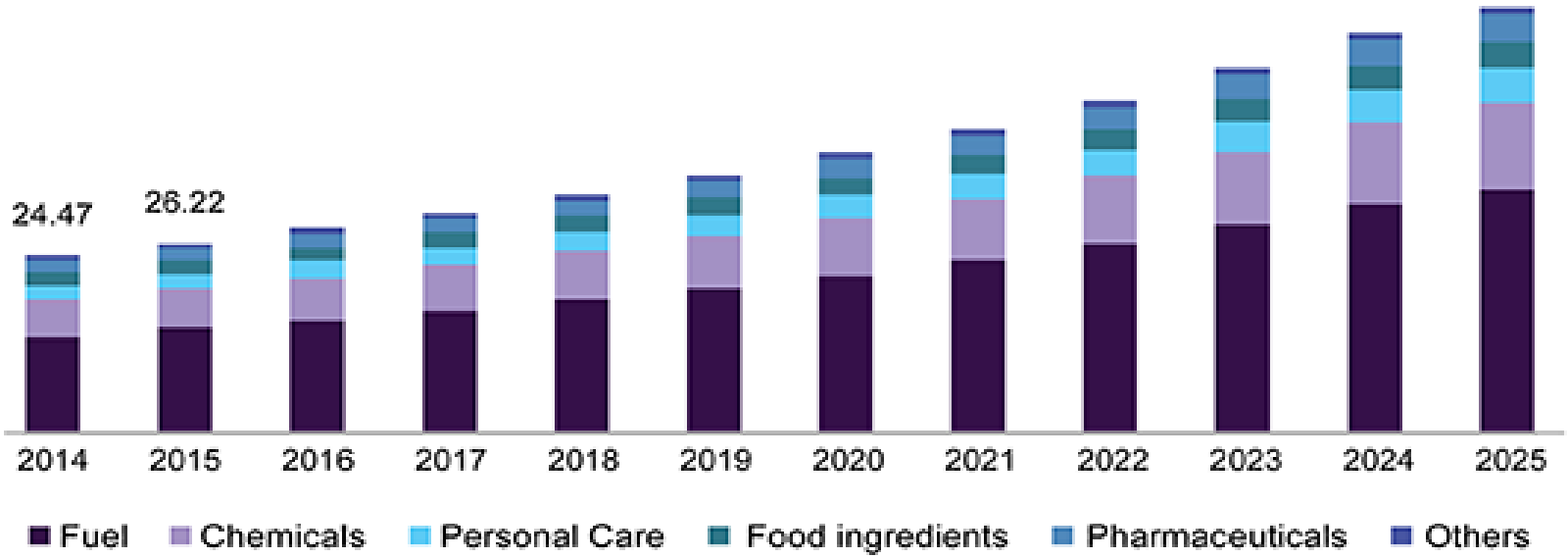
**Industrial Alcohol Market size is witnessing a significant growth owing to surge in demand for petrochemicals, alternative fuels and other major applications including production of cosmetics, pharmaceuticals, paints, and coatings. Recent development of biofuels due to growing concern for energy security and demand for low-priced feedstock in chemical industry will drive of industrial alcohol market size in forecasted time frame.**

**Rising demand of organic solvents due to efficient properties including high octane number and flammability characteristics will lead to increase in demand of the industrial alcohol in transportation sector. It is a cleaner burning fuel which are blended with gasoline and diesel fuels to reduce the fuel consumption and emissions.**

**The industrial alcohol market is projected to grow at a CAGR of 9.8% from 2017, to reach USD 180.83 billion by 2022. The demand for industrial alcohol is projected to be on the rise, owing to factors such as the increase in demand for petrochemicals, commercialization of alternative fuels such as bioethanol and bio-butanol, and growth in several applications such as cosmetics, pharmaceuticals, and paints & coatings, due to their multi-functionality.**

**Growth in consumer awareness regarding utilization of low carbon alternate fuels, coupled with governmental mandates for the blending of biofuels in gasoline and diesel in several countries, is fueling the increase in demand for industrial alcohol in the biofuel industry. The fluctuations in prices of raw materials are the major restraints for the industrial alcohol market.**

# U.S. Industrial Alcohol Market, by Application, 2014-2025 (USD Billion)

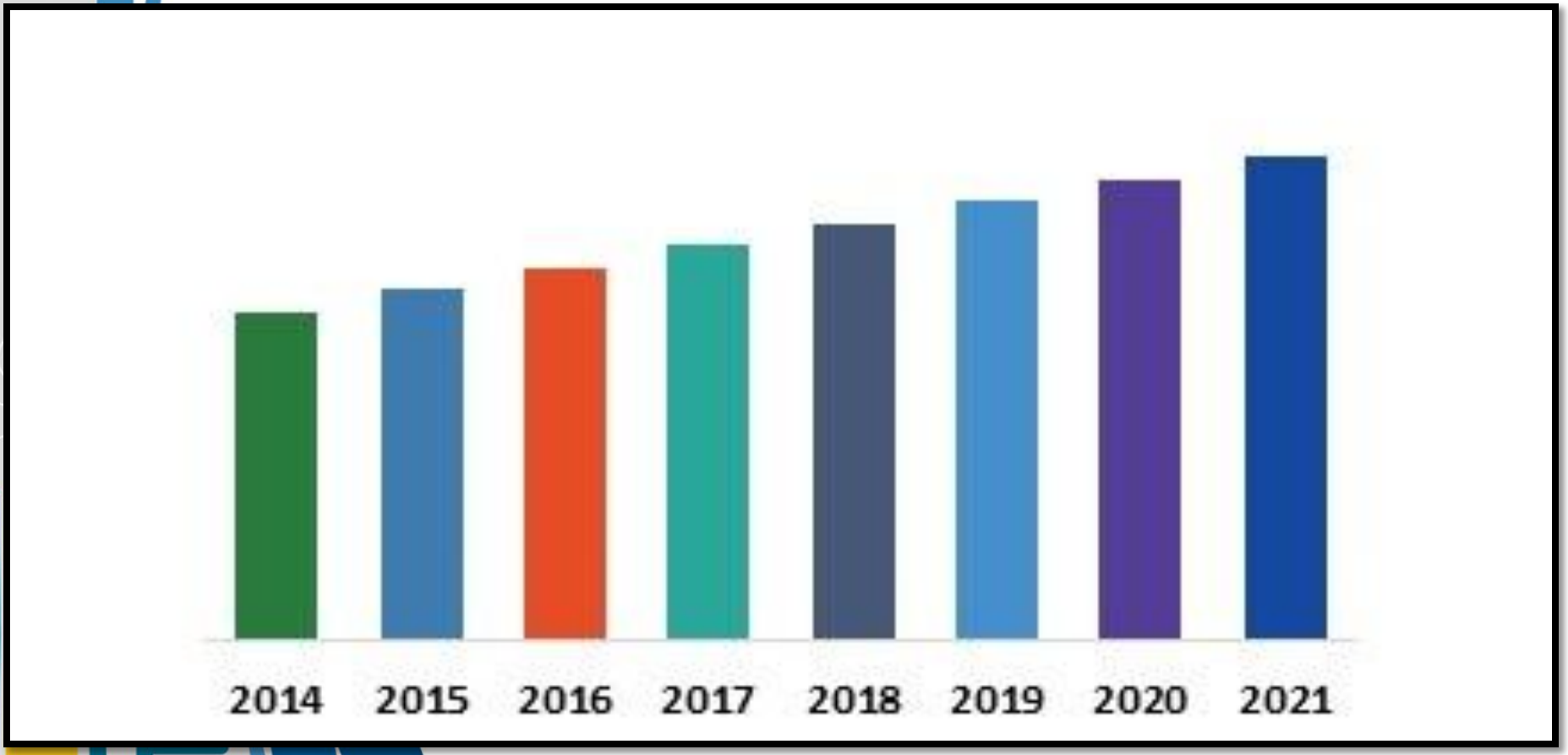


# *Anthracene*

**Anthracene is a colorless, polycyclic aromatic hydrocarbon (PAH) and a product of coal tar, a by-product formed by carbonization of coal. It is used in the production of dyes. Anthracene is converted into anthroquinone, which is used in the manufacture of dyes. Anthracene being an organic semiconductor is used as a luminescent material in the detection equipment of high-energy photons, alpha particles, and electrons. Polyvinyltoluene and other plastics are doped with anthracene to create plastic luminescent material, which is ideal for usage in dosimetry radiation therapy. Anthracene is also used in the production of wood preservatives, coating materials, and insecticides.**

**Anthracene is a tricyclic aromatic hydrocarbon derived from coal tar which is insoluble in water but is soluble in most organic solvents such as carbon disulphide, alcohols, benzene, chloroform, and hydronaphthalenes. It is used as an intermediate compound for the manufacturing of dyes and polyradicals used to make resins. Anthracene is to also be used as a diluent for wood protection products, an insecticide, or a fungicide and as an organic crystallized photoconductor used in electrophotography.**

# Anthracene Market Value, 2014 - 2021 ($ Million)



# *Fine Chemicals*

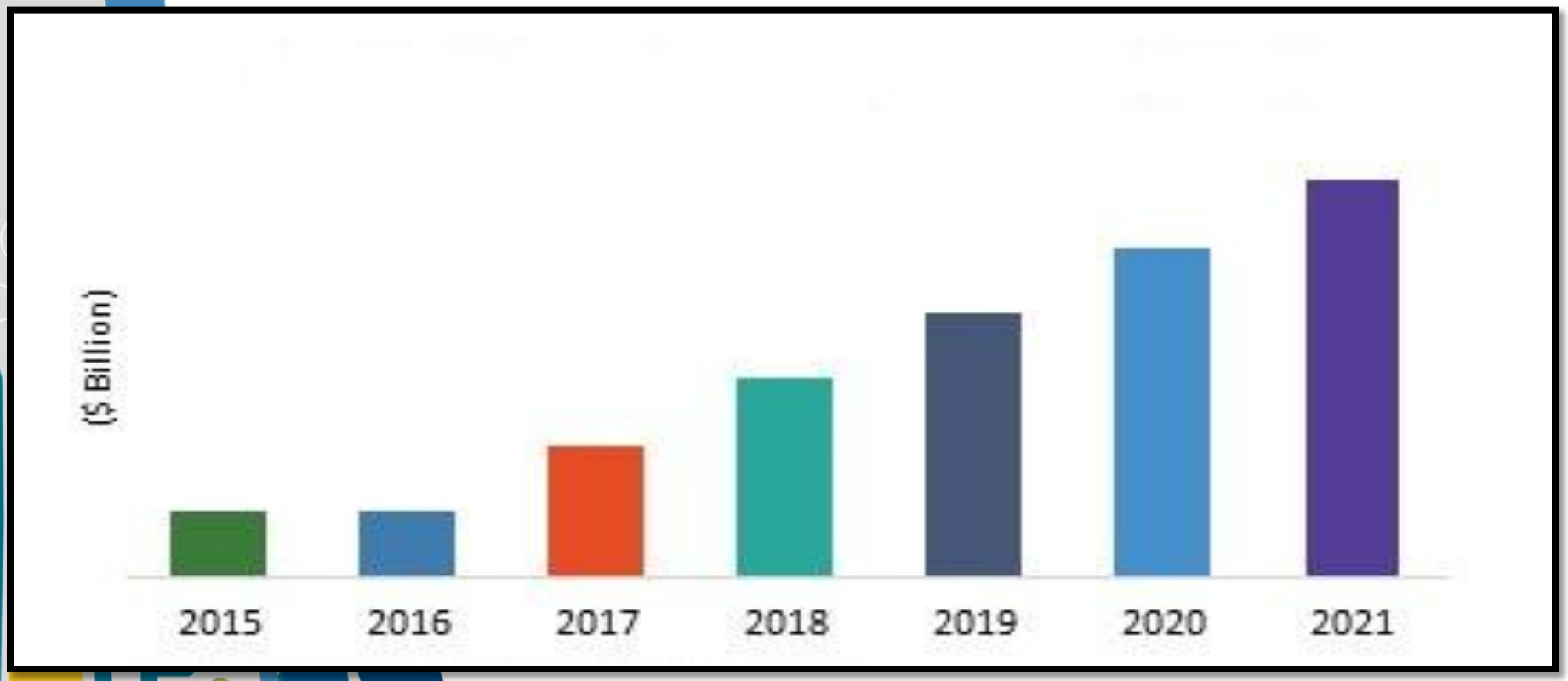
**Fine chemicals are basically high purity organic compounds manufactured in small volumes by complex manufacturing processes/routes and are sold at high prices for use in specialized application including the manufacturing of pharmaceuticals, plastics, agrochemicals, food, dyes, electronics, flavors and fragrances and cosmetics. Production of these chemicals is mainly based out in**

**The fine chemicals industry is a typical processed and intermediary materials industry that procures basic chemicals to supply raw materials and auxiliary materials to the downstream industries.**

**Fine chemicals manufacturing is typically carried out in batch processes, with synthesis being followed by separation and purification steps. Pharmaceutical sector has always been the largest market for fine chemicals industry. Moreover, it is estimated that pharmaceutical intermediates will account for over 70% of the fine chemicals market by 2017.**

**On the basis of end-users, the fine chemicals market is segmented into pharmaceuticals, agro chemicals, polymer additives, food and feed, electronics, dyes and pigments, perfumes and fragrances, and others.**

# ***Fine Chemical Market Revenue, 2015-2021 ($ Billion)***



# *Hydroquinone*

**Hydroquinone also known as quinol is an aromatic organic compound that features two hydroxyl groups bonded to a benzene ring. This aromatic organic compound is a white granular solid and derivatives of this parent compound are also referred to as hydroquinones. In the past hydroquinone was derived from the dry distillation of quinic acid. Hydroquinone exists in many forms naturally as well. It is present in the defensive glands of the bombardier beetle, it is one of the chemical constituents of the natural product propolis and it is a chemical compound found in castoreum, which is gathered from beaver plant food.**

**Hydroquinone is an aromatic compound, a derivative of benzene, and belongs to the class of phenols. It is industrially produced either through cumene process or hydroxylation of phenols. The market has been segmented based on application and end-user. In 2016, based on application, polymerization inhibitors accounted for the largest share, followed by cosmetics. Polymerization inhibitors are widely used in the production of antioxidants, inhibitors, medicines, dyes, and others, owing to their strong reducing nature. They also find use in skin de-pigmentation creams, black and white photographic films, etc. In the end-user segmentation, paint industry accounted for the largest share, as hydroquinone is extensively used as a stabilizer.**

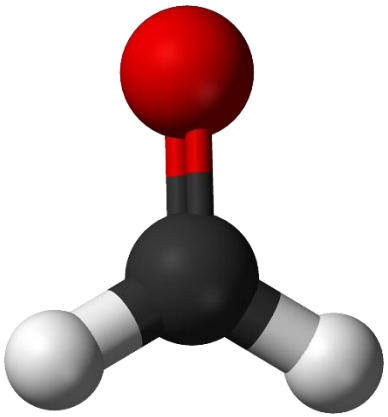
**The global market for hydroquinone is mainly driven by various factors, which include the high and rapid growth of a particular industry such as paint, construction and the cosmetic market. Its use as a skin depigmenter is what increases its demand especially among female population.**

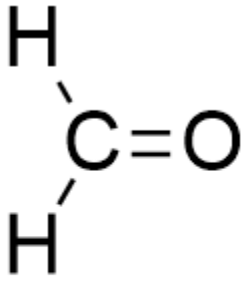
# *Formaldehyde*

**The market of formaldehyde in India is anticipated to grow at a CAGR of over 4% during 2016 – 2025. Flourishing furniture industry along with growing focus on infrastructure-based development are the major factors propelling the India formaldehyde market. In addition to this, various capacity expansion projects announced by formaldehyde derivatives producing companies in India are boosting the demand for formaldehyde in the country. Moreover, growing consumption of formaldehyde by multiple end user industries including construction, furniture, paints & coatings, textiles, fertilizers & pesticides, etc., is expected to drive the India formaldehyde market during forecast period.**

**Formaldehyde is tailored for utilization as the crucial raw material and a key ingredient in construction sector with applications in wood-based panel items such as plywood, particleboard, etc. In addition to this, it is also used to make sheathing & cladding in houses, furniture, insulation and flooring systems. Thus, increasing government expenditure on infrastructure-based development and growing furniture market are expected to drive India formaldehyde market during 2016 – 2025.**

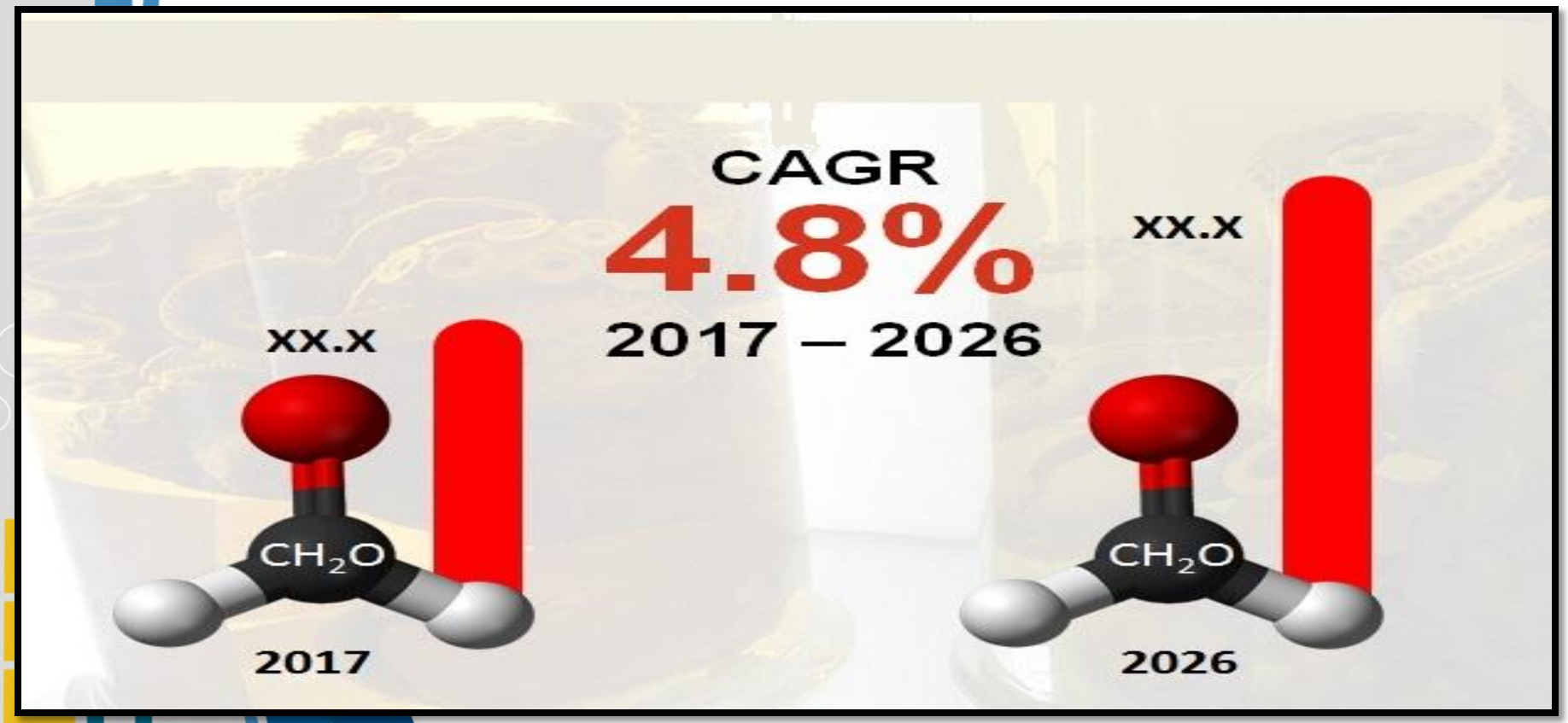
**The future of Formaldehyde will be positive in our country due to growing consumption of formaldehyde by multiple end user industries including constructions, furniture, paints & coatings, textiles, fertilizers & pesticides, etc., and is expected to increase at a CAGR of 3.9% during the forecasted period of 2016 to 2021.**





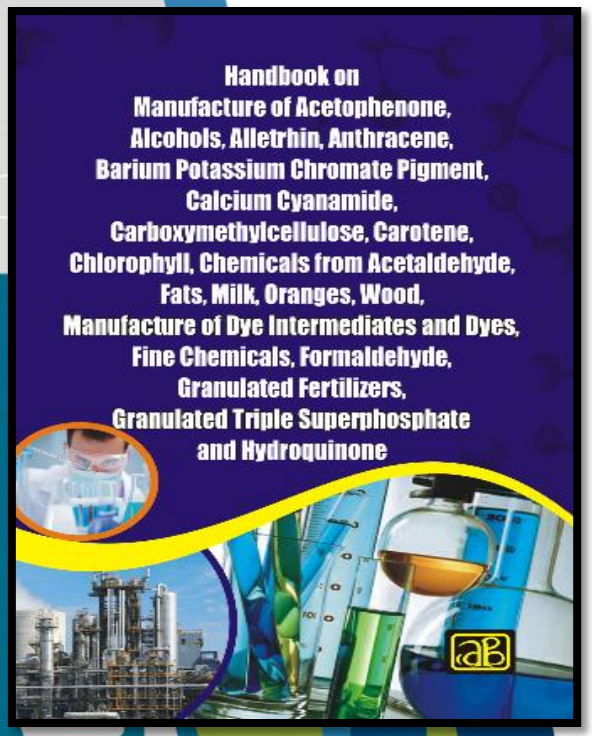

Formaldehyde

# Global Formaldehyde Market



**Growing production levels in the automotive industry globally has continued to pose significant challenges in terms of innovation and developments for the leading manufacturers. As the automotive production level is shifting back to high gear, the leading manufacturers are focusing on integrating leading technological features. In addition, growing need to manufacture various components in the aviation and construction industry is expected to contribute towards the growth of the global formaldehyde market significantly.**

***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***




https://goo.gl/BFYg97

# About the Book:

| | |
|---|---|
| **Publisher:** | **ASIA PACIFIC BUSINESS PRESS Inc.** |
| **ISBN:** | **978-81-7833-178-2** |
| **Book Code:** | **ENI309** |
| **Book Pages:** | **550** |
| **Author:** | **NIIR Board of Consultants & Engineers** |
| **Indian Price:** | **1100** |
| **US$:** | **125** |

**Industrial chemicals are essential components of modern societies because they contribute in numerous ways to establish and/or preserve an elevated standard of living in countries at all stages of development. Chemicals play an important part in different fields such as healthcare, food production and telecommunications. Under certain conditions, the large scale production and use of certain chemicals may result in the degradation of our environment and adverse impact to human health and wildlife.**

**Acetophenone is the simplest aromatic ketone organic compound and it has a sweet taste and smell that resembles that of oranges. It is used for various purposes in the industry. Acetophenone is a colorless liquid with a sweet pungent taste. Alcohols are one of the most important molecules in organic chemistry. They can be prepared from many different types of compounds, and they can be converted into many different types of compounds. The allethrins are a pair of related synthetic compounds used in insecticides. They are synthetic pyrethroids, a synthetic form of a chemical found naturally in the chrysanthemum flower.**

**Acetaldehyde is a key raw material in the production of a wide range of chemical products such as paint binders in alkyd paints and as a plasticizer for plastics. Acetaldehyde is also used a base in the manufacture of acetic acid, another platform chemical with many applications. Acetaldehyde is also used as an aromatic agent and is found naturally in fruits and fruit juices.**

**Formaldehyde, also known as methanal, is a colorless and flammable gas that has a pungent smell and is soluble in water. Formaldehyde is used in Circuit Board Manufacture, Laboratory Chemicals, Paper Coatings, Photochemicals, Printed Circuit Board Manufacturing and Rubber Manufacture.**

**Hydroquinone is a Melanin Synthesis Inhibitor. Hydroquinone is mainly used in photosensitive materials, rubber, dyes, pharmaceutical industry.**

**The Indian chemical industry is an integral component of Indian economy, contributing around 6.7 per cent of the Indian GDP. With Asia's growing contribution to the global chemical industry, India emerges as one of the focus destinations for chemical companies worldwide.**

**This book will be a mile stone for its readers who are new to this sector, will also find useful for professionals, entrepreneurs, those studying and researching in this important area.**

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Hydroquinone Derivatives And The Future

# Tags

Production of Acetophenone, Manufacturing of Industrial Chemicals, Process for Preparing Acetophenone, Acetophenone Manufacturing Company, Acetophenone Manufacture, Organic Compound, Process for Producing Acetophenone, Acetophenone Production, Industrial Chemical Manufacturing Unit, Production of Industrial Alcohols, Industrial Alcohol Production, Manufacture of Industrial Alcohols, Industrial Alcohol Manufacturing, Industrial Alcohol Manufacturing Industry, Commercial Production of Alcohol for Industrial Purposes, How is Industrial Alcohol Made? Industrial Alcohol Manufacture, Industrial Alcohol Plant, Production of Anthracene, Process for Production of Anthracene, Anthracene Production, Calcium Cyanamide Production, Production of Calcium Cyanamide, Calcium Cyanamide Manufacture, Production of Carboxymethyl Cellulose, Carboxymethyl Cellulose Production, Production of Carboxymethylcellulose (CMC), Manufacture of Carboxymethylcellulose, Production of Fine Chemicals, Fine Chemicals Manufacturing, Fine Chemicals Manufacture, Fine Chemicals Manufacturing Company, Manufacturing of Fine Chemicals, Fine Chemicals Industry, Formaldehyde Production and Manufacturing Process, Formaldehyde Production Process, Production of Formaldehyde, Formaldehyde Manufacturing Process, Formaldehyde Production, Process for Production of Formaldehyde,

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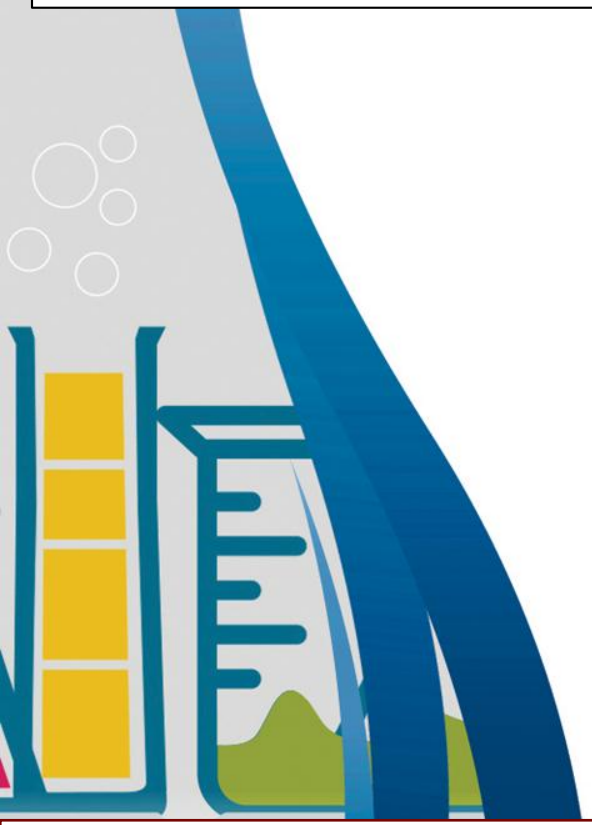

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# Our Approach

Requirement collection

Thorough analysis of the project

Economic feasibility study of the Project

Market potential survey/research

Report Compilation

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