



FLAVOURS, FRAGRANCES & NUTRACEUTICAL INGREDIENTS IN INDIA

Strong growth on the back of indigenous supply chain and increased focus on research & development

Avendus[^]



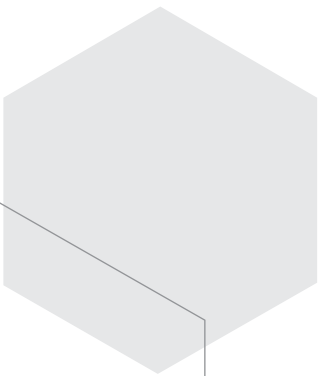
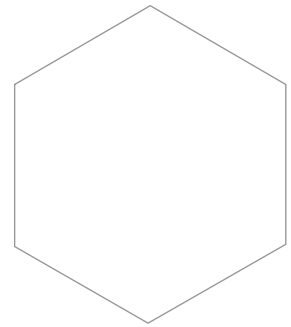
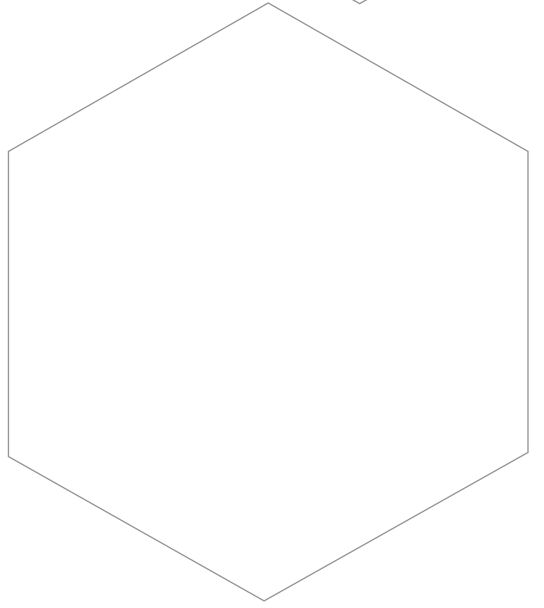
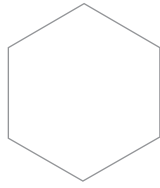
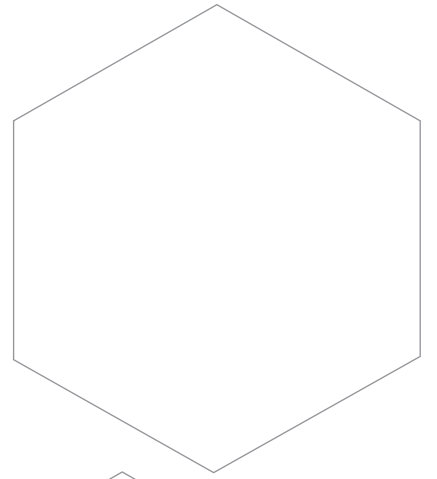
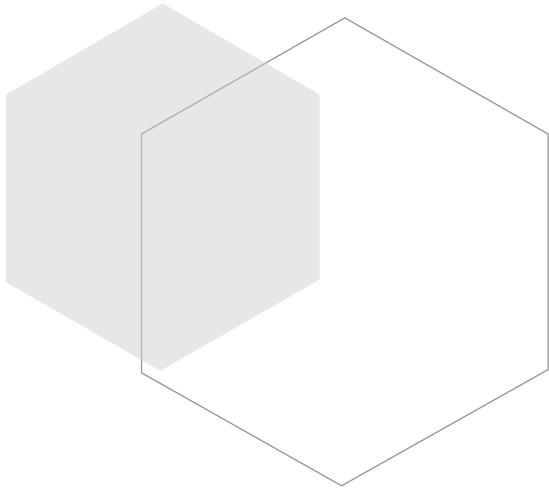
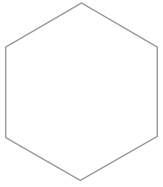


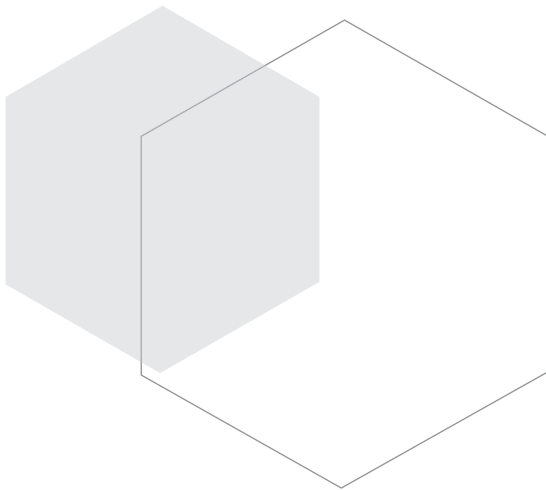
TABLE OF CONTENTS

- A. Specialty Chemicals in India – A quick recap | *page 04*
- B. Flavours, Fragrances & Nutraceutical Ingredients -
An overview | *page 08*
- C. Base Ingredients – A segment offering natural advantages
to India | *page 12*
- D. Flavours & Fragrances Blends – A high value-add segment | *page 24*
- E. Nutraceutical Ingredients – An export driven growth story | *page 34*
- F. Key trends shaping the industry | *page 44*
- G. Conclusion | *page 49*



ACKNOWLEDGEMENTS

This report is a fructification of the efforts of several people who contributed their valuable views and opinions on the industry. We have been in touch with several promoters and top management executives in companies operating in this space, to gather insights on the sector as well as their respective companies. We would especially like to thank the management of Anthea Aromatics, Arjuna Natural Extracts, Eternis Fine Chemicals, OmniActive Health Technologies, Privi Organics, Sami Labs and Ultra International, for sharing their views on this subject. Without their insights, this report would not have been complete.



DISCLAIMER

This report is not an advice/offer/solicitation for an offer to buy and/or sell any securities in any jurisdiction. We are not soliciting any action based on this material. Recipients of this report should conduct their own investigation and analysis including that of the information provided. This report is intended to provide general information on a particular subject or subjects and is not an exhaustive treatment of such subject(s). This report has been prepared on the basis of information obtained from publicly available, accessible resources. Company has not independently verified all the information given in this report. Accordingly, no representation or warranty, express, implied or statutory, is made as to accuracy, completeness or fairness of the information and opinion contained in this report. The information given in this report is as of the date of this report and there can be no assurance that future results or events will be consistent with this information.

Any decision or action taken by the recipient based on this report shall be solely and entirely at the risk of the recipient. The distribution of this report in some jurisdictions may be restricted and/or prohibited by law, and persons into whose possession this report comes should inform themselves about such restriction and/or prohibition, and observe any such restrictions and/or prohibition. Company will not treat recipient/user as customer by virtue of their receiving/using this report. Neither Company nor its affiliates, directors, employees, agents or representatives, shall be responsible or liable in any manner, directly or indirectly, for the contents or any errors or discrepancies herein or for any decisions or actions taken in reliance on the report. No part of this report may be copied or redistributed in any form without the prior written consent of Avendus.

MESSAGE FROM THE AUTHORS

Flavours, fragrances and nutraceutical ingredients are important sub-segments of the Indian specialty chemicals space. With a strong linkage to consumer facing industries, including personal care, food and beverages and nutraceuticals, these segments are witnessing strong market demand. Also, segments like nutraceutical ingredients, which have traditionally been exports-focused, will now reap the benefit of a strong upsurge in the domestic market, as a fledgling end-user market like nutraceuticals witnesses exponential growth in India.

An abundance of raw materials, especially natural herbs and spices, gives India an inherent advantage in the natural base ingredients space. Strong chemistry skills place India in an advantageous position to become a global supplier of choice for synthetic base chemicals. A rich legacy in Ayurveda and other forms of alternate medicine, along with a strong supply chain for oleoresins and extracts, makes India a very strong contender in the nutraceutical ingredients segment. Indian players have successfully added R&D to their repertoire of strengths, and are now able to develop and manufacture products which are high quality, scientifically evidenced, globally accepted and competitively priced.

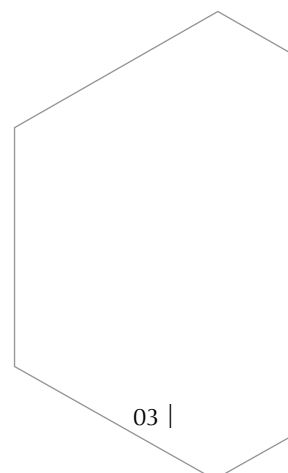
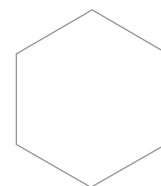
Given India's natural advantages in these segments, we expect the industry to grow at a healthy rate and high-quality Indian players to outgrow most of their global peers. In this report, we have endeavoured to look at the market landscape, delve into the key trends shaping this sector, and celebrate the outperformers in the respective segments.

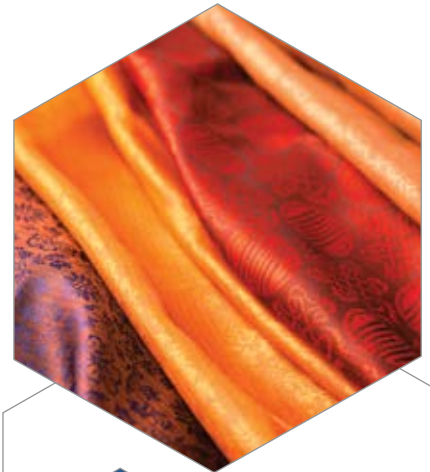


Preet Singh
Executive Director



Koushik Bhattacharyya
Director





SPECIALTY CHEMICALS IN INDIA

A.1 Overview

Specialty chemicals are generally used for highly specific applications and are tailored to suit the end-user industry and sometimes even the individual customer's requirements. Specialty chemicals differ from bulk or commodity chemicals in the fact that they generally involve a high degree of value addition and are typically produced in relatively smaller volumes. This makes R&D and product innovation key success factors for companies in this industry.

Specialty chemicals in India has witnessed high growth rates in the recent past, driven by both domestic consumption and exports. It constitutes ~20% of the overall Indian chemicals industry. The nine key segments comprising agrochemicals, dyes and pigments, base ingredients for F&F and nutraceuticals, surfactants, textile chemicals, construction chemicals, water chemicals, polymer additives and personal care ingredients cumulatively constituted a market of USD 22.7bn in 2016 and are expected to grow at 11% p.a. to reach USD 38.9bn by 2021.

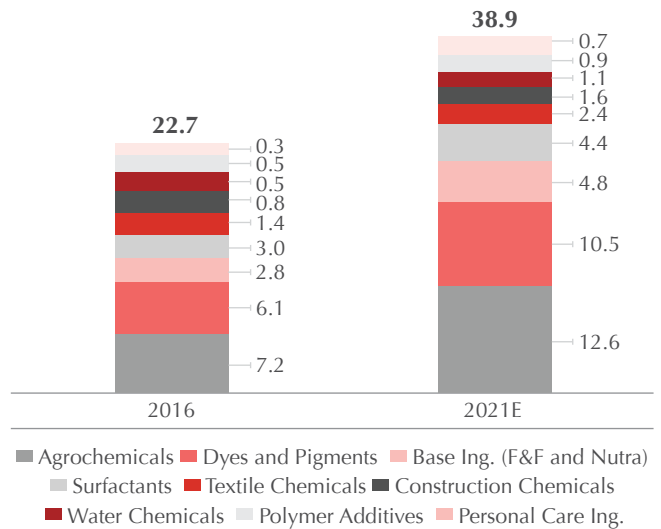


Figure 1: Indian Specialty Chemicals Market Size (USD bn)

Source: Aventus analysis

A.2 Growth Drivers of Specialty Chemicals in India

Growth in the specialty chemicals industry is buoyed by both demand and supply side factors. On the supply side, growth is driven by India's low-cost manufacturing ecosystem, a progressively increasing culture of R&D and innovation, and increasing adherence to global standards of quality and EHS benchmarks, leading to increased product acceptability across the world. Demand for these products is propelled by strong growth in the end-user segments, and premiumisation of FMCG and F&B categories, which often use more value-added chemicals. Domestic demand is driven by rising disposable income and increasing rural penetration of consumer products.

Given the macro growth drivers, several players in this space have delivered strong performances which have reflected both in the public market valuations as well as a significant increase in investor interest in such companies (both from financial as well as strategic investors).

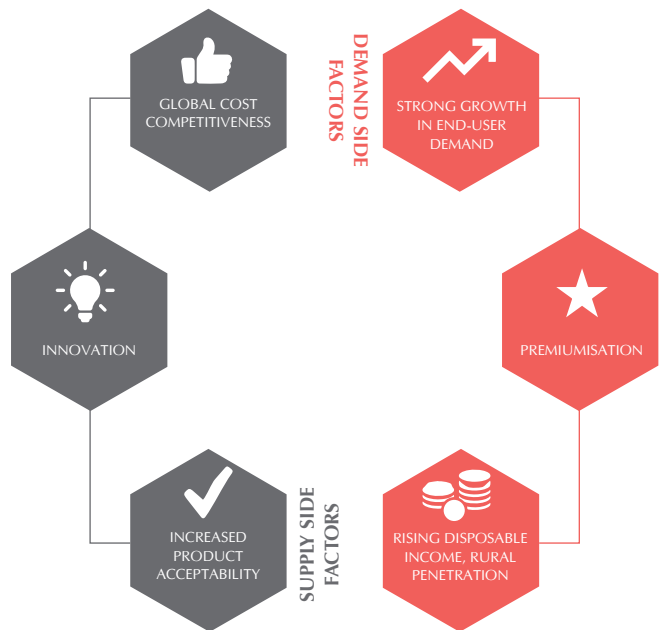


Figure 2: Growth Drivers of Specialty Chemicals in India

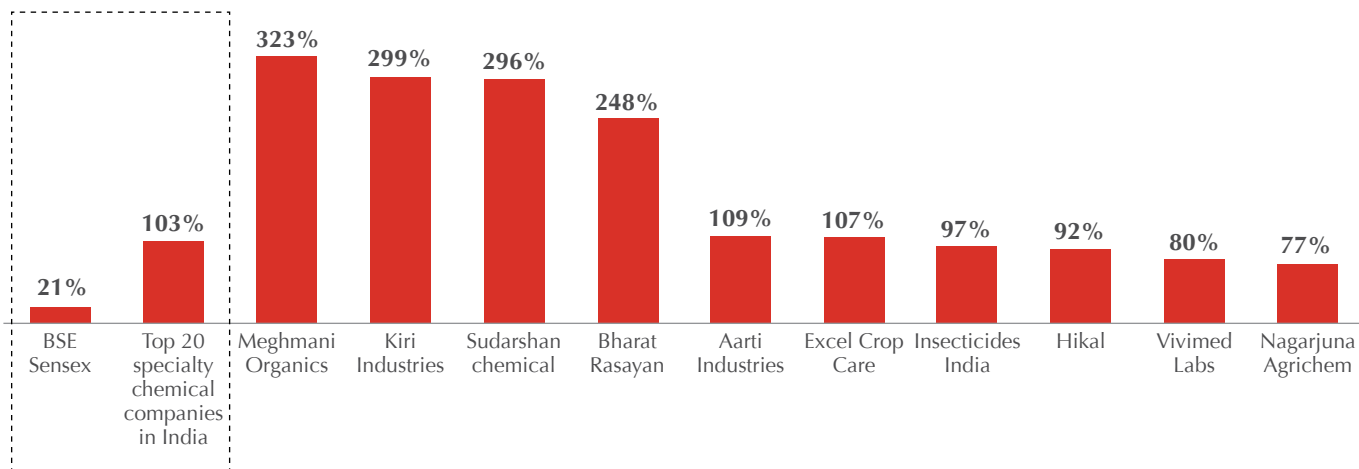


Figure 3: 2 Year Total Shareholder Return of Specialty Chemical Companies

Source: Aventus analysis

Investors have been particularly bullish on the specialty chemicals space. Listed specialty chemical companies have massively outperformed market indices over the last two years. The total returns of major specialty chemical companies average 103% in the last 2 years, between 31st August, 2015 and 31st August, 2017, while Sensex has showed a return of 21% during the same period. Companies like S H Kelkar and Sharda Cropchem, which got listed in the last 3 years, are trading at 132% and 283% above the issue price respectively. This has prompted more specialty chemical companies to go down the IPO route for investor exits and fund-raises.

The number of private equity transactions in this space has also gone up significantly with a number of private equity funds expecting to see strong growth from this sector in the future.

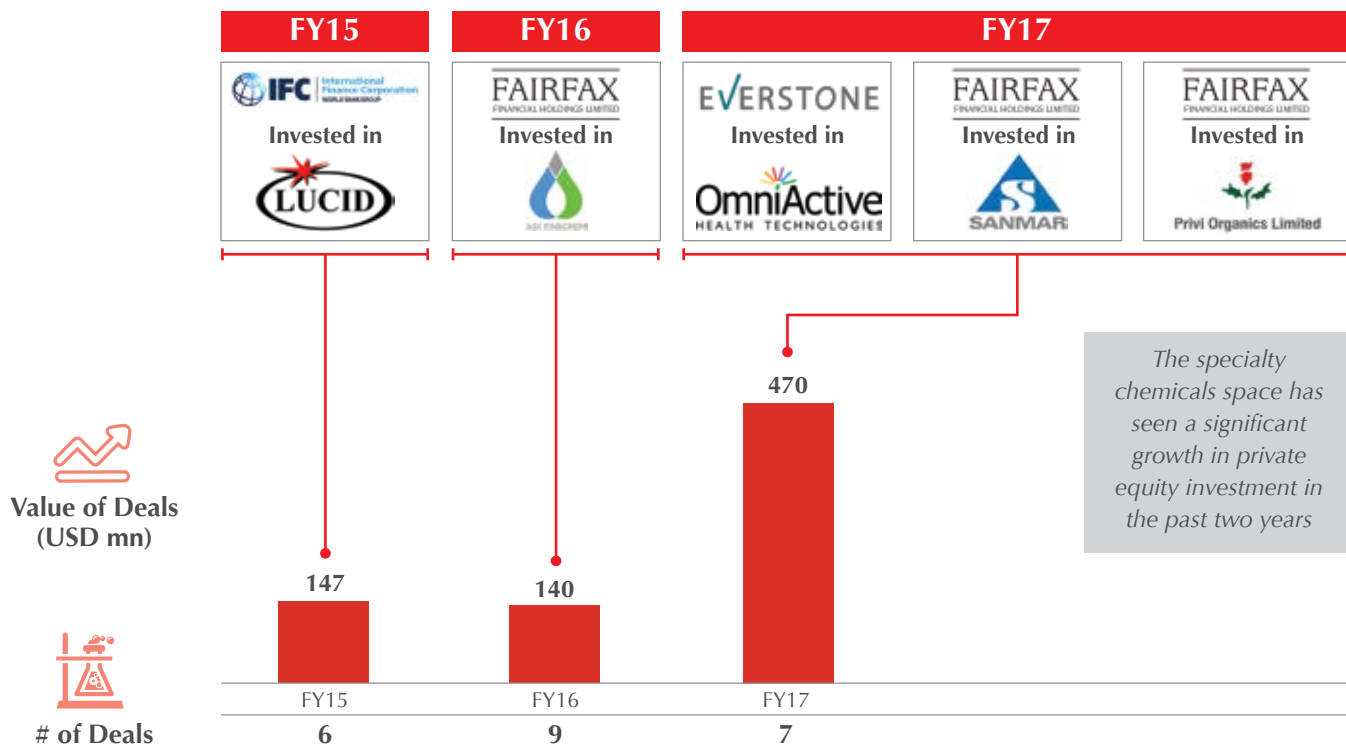
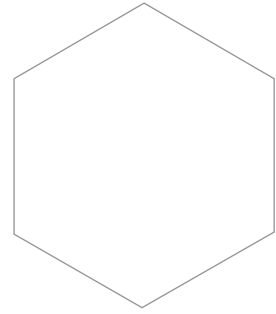
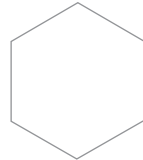
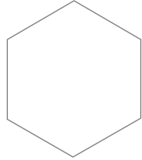
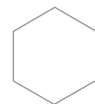
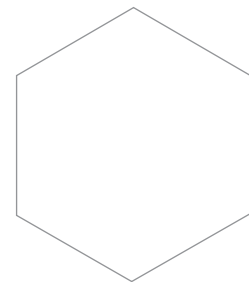


Figure 4: Private Equity Transactions in Specialty Chemicals in India

Source: Aventus analysis



“Listed specialty chemical companies have massively outperformed market indices over the last two years. The total returns of major specialty chemical companies average 103% in the last 2 years”





FLAVOURS, FRAGRANCES & NUTRACEUTICAL INGREDIENTS

B.1 Overview

Impressive growth and increasing investor interest prompted us to landscape the Indian specialty chemicals market in our report titled “Specialty Chemicals in India – A sum of disparate parts, segment leaders poised to create value”, published last year. As highlighted in that report, we see flavours and fragrances as one of the most attractive segments within the specialty chemicals space with a high growth rate, healthy margins and returns, and a number of scaled up assets. Given the attractiveness of this segment, we decided to delve deeper into this space, trying to capture the market size and growth drivers, competitive landscape in each of the sub-segments, key trends being witnessed both in India and globally, and identify star performers who we expect to beat the market growth rate.

Very broadly, the F&F and nutraceutical value chain has four key stakeholders – (a) raw material suppliers (b) base ingredient manufacturers (c) functional ingredient manufacturers and (d) end-consumer industries. Figure 5 below depicts the value chain for these segments:

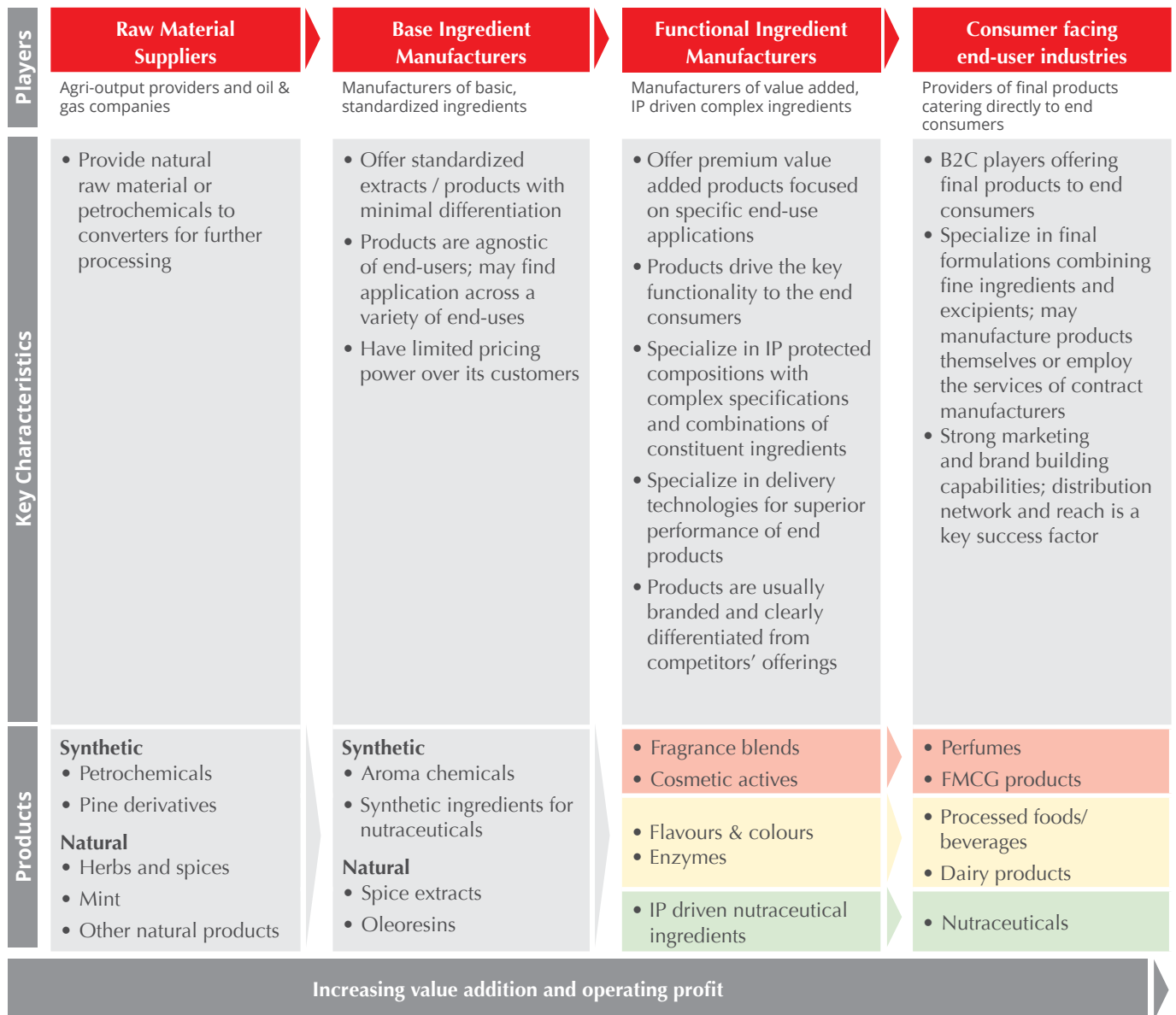


Figure 5: Value Chain of F&F and Nutraceutical Ingredients

For the purpose of our report, we have considered three sub-segments of the F&F and nutraceutical value chain – (a) base ingredient manufacturers (b) F&F blenders and (c) nutraceutical ingredient manufacturers. We see a significant overlap between the supply chain of the F&F and the nutraceutical segments. Nutraceutical ingredients and F&F are often manufactured from the same starting blocks which we have referred to as base ingredients. A natural extracts player could be supplying extracts and essential oils into the F&F industry as well as extracts and oleoresins to nutraceutical ingredients companies. Similarly, a synthetic ingredient manufacturer could be supplying aroma chemicals to F&F blenders as well as synthetic vitamins/synthetically derived compounds to the nutraceutical value chain. Figure 6 depicts the interlinkages between these two sectors. This is why we have included F&F and nutraceutical ingredients within the same report.

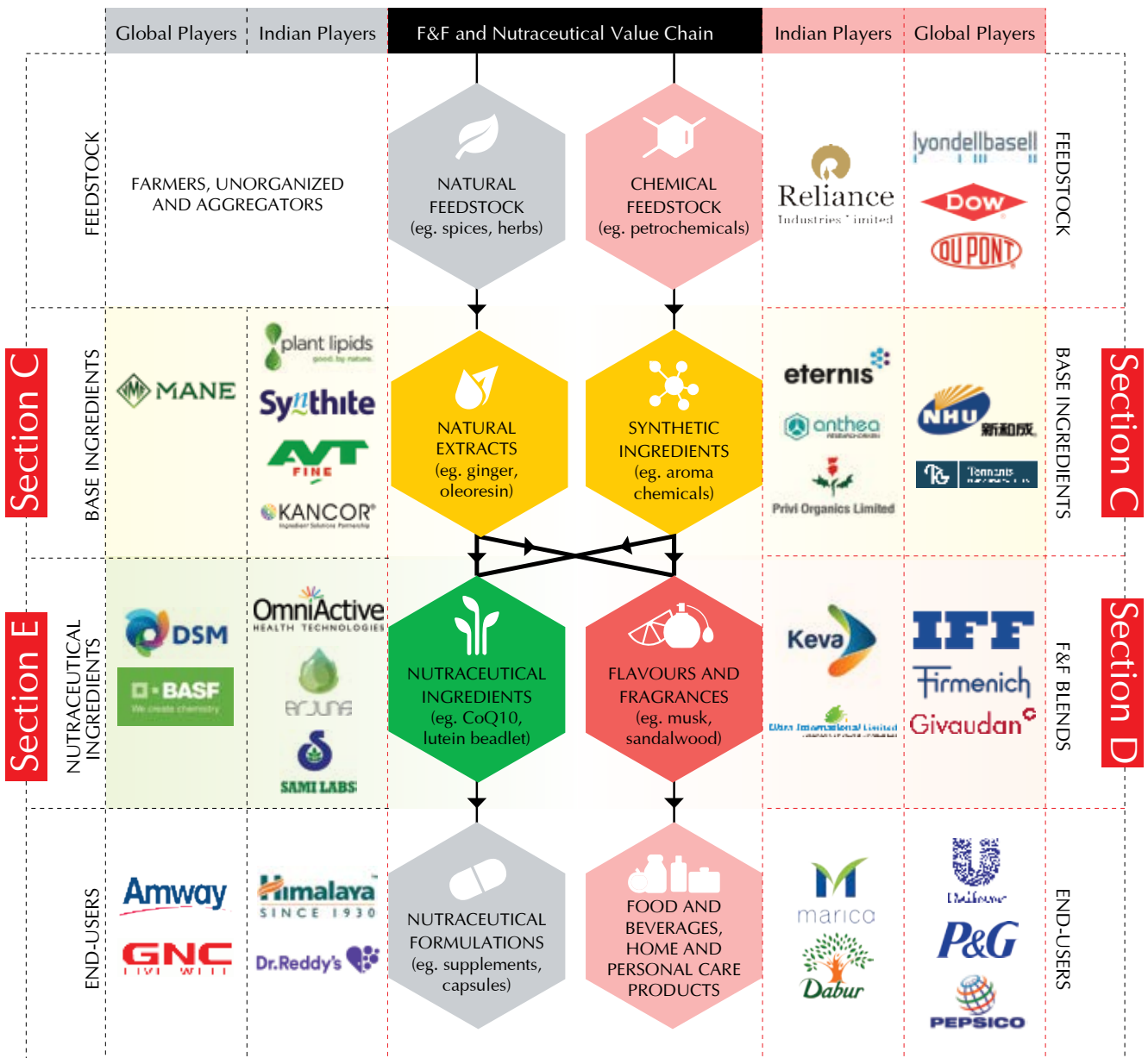


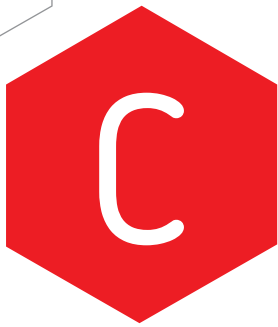
Figure 6: Interlinkages between F&F and Nutraceutical Value Chain

Global F&F giants acquiring assets in the food/ nutraceutical space is testimony to the convergence of the F&F and the nutraceutical supply chains. Inorganic foray into the nutraceutical space helps these large players leverage their supply chains to serve more number of markets. For example, Symrise acquired DIANA Group, a France based company that provides nutraceutical solutions, in 2014. BASF, a major player in the specialty chemicals space strengthened its presence in the nutraceutical market in 2010 with the acquisition of Cognis, a Germany based nutraceutical ingredients company. Some of the major forays by F&F players into the nutraceutical space are as follows:

2016	2015	2014	2014
<p>Acquirer:</p> 	<p>Acquirer:</p> 	<p>Acquirer:</p> 	<p>Acquirer:</p> 
<p>Target:</p> 	<p>Target:</p> 	<p>Target:</p> 	<p>Target:</p> 
<p>Target Description: Producer of natural superoxide dismutase and health ingredients with expertise in biosciences and encapsulation technology</p> 	<p>Target Description: Produces cosmetic active ingredients with a strong R&D pipeline and complementary products in the skin care and hair care segments</p> 	<p>Target Description: Produces functional solutions for food and cosmetic ingredients with comprehensive raw material access and a platform for natural ingredients</p> 	<p>Target Description: Specializes in supercritical extraction of active ingredients for cosmetics</p> 

Figure 7: Acquisitions made by F&F players in the Nutraceuticals space

In the subsequent sections of the report, we will delve into each of the 3 sub-segments highlighted in Figure 6, touching upon the global market, Indian market and its growth drivers, key success factors and star performers to watch out for.



BASE INGREDIENTS

C.1. Introduction

Base ingredients are chemicals used in the F&F or nutraceutical value chain, obtained either from a feedstock using a synthetic process or from naturally occurring spices, herbs, fruits and flowers using an extraction process. These ingredients are then further processed by F&F blenders or nutraceutical ingredient manufacturers to be supplied to the FMCG or F&B, and nutraceutical sectors respectively.

C.1.1. Natural Base Ingredients

Natural flavour and fragrance ingredients are derived from spices, herbs or other naturally available crops through a process of extraction, either solvent-based or supercritical. While natural base ingredient manufacturers sell predominantly to the F&F industry, a few of them (especially the larger ones) also make products that go into nutraceutical ingredients (eg: lutein, a nutraceutical ingredient, is manufactured from marigold oleoresin, which is supplied by base ingredient players). It is for this overlap with the nutraceutical space that we have called this category of players “base ingredient” manufacturers (and not “F&F ingredient” manufacturers).

India is a leading producer of natural base ingredients, given the abundance of the raw materials within the country. India is an important supplier to the global market in this space, catering to 60% of the global spice oleoresin demand and 80% of the global mint extracts demand. In multiple critical ingredients (including mint, ginger, chilly, pepper, star anise, fennel, coriander, lemongrass, nutmeg, mace, cardamom), India ranks among the top 3 producers in the world.

Ingredient	India's Global ranking	Production (MT)	Comments
Mint	1	32,000	India produces 80% of the world's mint oil
Ginger	1	703,000	Indian dry ginger, known in the global market as 'Cochin Ginger', is considered the best in the world
Chilly and Pepper	1	1,299,940	The world's hottest chilly "Naga Jolokia" is cultivated in the hills of Assam in North-East India
Spices	1	1,496,990	India contributes 70% of the global spice production
Star Anise, Fennel and Coriander	1	537,330	The essential oil from star anise is used to flavour soft drinks, bakery products and liquors
Lemongrass oil	1	1,000	This oil is used in imparting scent to soaps, detergents and insect repellent preparations
Nutmeg, Mace and Cardamom	3	18,070	Cardamom is the world's third-most expensive spice after saffron and vanilla
Eucalyptus oil	3	1,000	It is used in small quantities to impart a fresh and clean aroma in soaps, detergents, lotions and perfumes

Figure 8: Production of Natural Ingredients in India

Source: UN

There are several scaled up Indian players in this space, with 70%+ of the Indian production being exported to global markets. Demand for these products is increasing globally, with natural ingredients gaining prominence and being preferred across the F&B, FMCG and nutraceutical space. India's inherent sourcing advantage and a plethora of large players with strong systems, processes and access to capital has made this an interesting area where we can expect some high-quality companies breaking out from the crowd. Some of the leading players in the market are Synthite, Plant Lipids and Kancor Ingredients.

C.1.2 Synthetic Base Ingredients

Synthetic base ingredients typically start from a petrochemical derivative or derivatives of other raw materials like pine oil. The final ingredient is arrived at through a series of chemical reactions (as opposed to extraction in the case of natural base ingredients). Almost all of the output here goes into F&F blending (except a handful of synthetic or semi-synthetic products that go into nutraceutical ingredients like synthetic lutein).

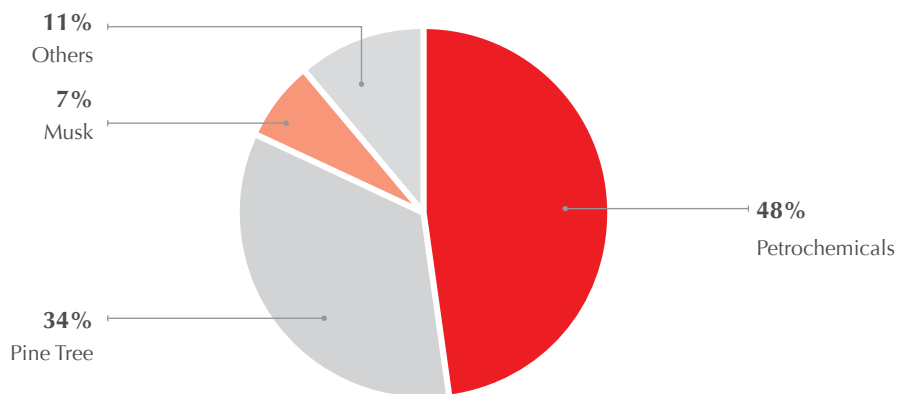
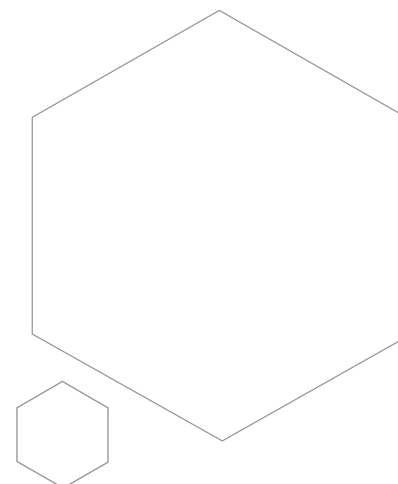


Figure 9: Production of Aroma Chemicals by Raw Material (by Volume)

Source: Industry Reports

India relies heavily on its chemistry skills (akin to the Active Pharmaceutical Ingredients industry) to create differentiation in this space. However, because of the facts that (1) several of the starting inputs for this industry are imported and (2) this industry is heavily dependent on scale, process optimization and pricing, India faces significant competition from other exporters (predominantly in China) in this space. Despite this, we have seen the emergence of a few large players of global repute in India within this segment. There have also been multiple investments (Fairfax – Privi, ICICI Venture – Anthea) and inorganic expansions (Oriental Aromatic – Camphor and Allied), illustrating the confidence of promoters and investors in the growth opportunity in this space.



C.2 Market Size

C.2.1 Global Market

The global base ingredients market for both F&F and nutraceutical ingredients is close to USD 13.5bn, poised to grow at a CAGR of ~6% till 2021. Almost half of the base ingredients go into the F&F value chain, a space currently dominated by synthetic ingredients. The other half, going into the nutraceutical value chain, is dominated by natural base ingredients. Given an almost-universal inclination of consumers towards natural and natural-like ingredients, the natural ingredients market is expected to grow faster than its synthetic counterpart.

Globally, there are very few scaled up companies outside of India and China, which focus solely on the manufacture of base ingredients. Most of the major F&F blenders like Firmenich, Givaudan, IFF, Symrise are backward integrated. They manufacture base ingredients for captive consumption, especially proprietary ingredients which are critical for their blends, and also sell a part of their produce in the market. We estimate that over 70% of the production in the ingredients space comes either from one of the top 10 F&F blenders or from pure-play base ingredients companies in India or China.

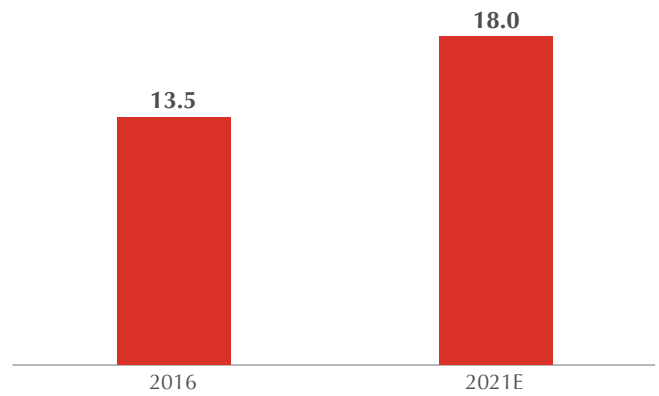


Figure 10: Global Base Ingredients Market Size (USD bn)

Source: Avendus analysis

C.2.2 Indian Market

The Indian base ingredients market is currently sized at about USD 2.8bn, growing at a CAGR of 11% and expected to reach USD 4.8bn in 2021. Within this segment, spice extracts and oleoresins is the fastest growing sub-segment and is expected to grow at a CAGR of 16%. 75% of India's base ingredient production is being exported. Over 75% of this market is constituted by natural ingredients.

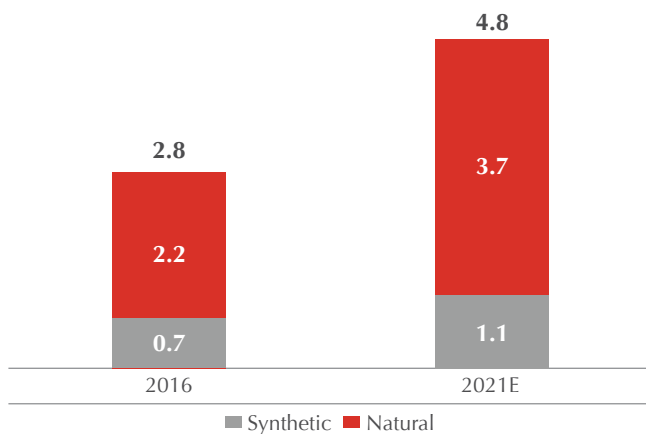


Figure 11: Market Size of Base Ingredients in India (USD bn)

Source: Avendus analysis

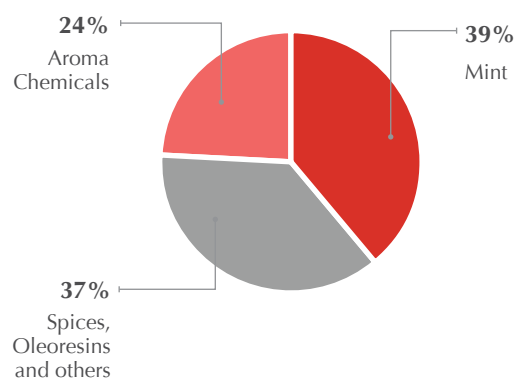


Figure 12: Break-up of Base Ingredients Market (2016)

Source: Avendus analysis

The top 10 companies in the ingredients space are presented in the table below. A large number of the natural base ingredient players on this list are based in Kerala, given the proximity to the raw material source and the rich history of Ayurveda and other alternate medicine in this part of India.

S No	Company	HQ	FY16 revenue (USD mn)	5 year CAGR	Product range
1	Sharp Mint	Delhi	254	6%	Mint
2	Synthite	Kerala	203	15%	Spices Oleoresins and others
3	Plant Lipids	Kerala	134 [^]	18%	Spices Oleoresins and others
4	Privi Organics	Mumbai	93*	9%	Aroma Chemicals
5	Eternis Fine Chemicals	Mumbai	73*	8%	Aroma Chemicals
6	Kancor Ing. (Mane)	Kerala	70	14%	Spices Oleoresins and others
7	KV Aromatics	Noida	65	27%	Mint
8	Camphor & Allied	Mumbai	54*	NA	Aroma Chemicals
9	AVT Natural	Kerala	49*	6%	Spices Oleoresins and others
10	Anthea Group	Mumbai	46*	NA	Aroma Chemicals

* Refers to FY17 revenues | ^ Standalone

Figure 13: Top 10 Base Ingredient Manufacturers in India

Source: MCA, Discussion with Companies

Growth in the base ingredients market is largely driven by the end-user growth in the F&F segment or the nutraceutical segment, which have been discussed separately in the subsequent sections.

C.3 Key Success Factors

The base ingredients space in India, while having its own strengths, is subject to competition (varies by products) and some degree of pricing pressure. The key success factors in this space are:

- Raw material procurement** – Raw materials make up almost 60-70% of the cost of a product. This makes access to high quality raw material at stable prices a very important success factor for base ingredient manufacturers. For natural base ingredient manufacturers of spice oleoresins and essential oils, seasonality of the raw material harvest is the major challenge. To overcome this, companies like Kancor, Synthite and Sharp Mint have contract farms which ensures that they have a continuous supply of raw material to process. Similarly, in the case of synthetic base ingredients like aroma chemicals which are petroleum derivatives, price fluctuation due to oil prices is a key area of concern. Synthetic base ingredient manufacturers are some of the smallest customers for petroleum /petroleum derivative players, thereby commanding very low bargaining power over the price. This makes it important to have arrangements with the customers to be able to pass on the increased raw material prices.
- Relationship with customers** – The customer set for base ingredients used for F&F is limited to the major F&F houses globally. For base ingredient players supplying into the F&F value chain, the customer set is largely concentrated to the top 10 players who dominate the global market. Hence, their customer concentration is high, with 50%+ often coming from the top 3-4 customers. This makes managing large customers and growing key accounts an important success factor for base ingredient manufacturers.
- Cost optimization and process efficiencies** – India is the leading manufacturer of natural base ingredients globally due to the abundance of raw materials. ~60% of the supply is managed by the 3 major players in Kerala and there is less competition in this space. However, the synthetic base ingredients space is seeing increasing competition, especially from Chinese manufacturers. The increasing pricing competition has made it important to manage the cost of raw materials, increase the focus on process innovation to optimize costs on a continuous basis, optimize energy and other utility usage, in order to increase profitability.

Synthite

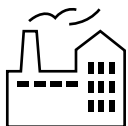
Established in 1972, Synthite is the largest multi-product base ingredient manufacturer in India. Based in Kochi, and promoted by Mr. C.V. Jacob, Synthite is a leading producer of spice extracts and oleoresins, and is one of the few Indian companies to have set up a manufacturing presence in China

BUSINESS OVERVIEW



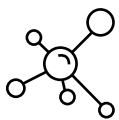
Products and End Markets

- Manufactures oleoresins, essential oils, green spice extracts, marigold extracts & lutein, herbal extracts, tea and coffee extracts
- Over time, Synthite has forayed into the F&F blends space (through its subsidiaries - Symega and Aromco)
- 60%+ revenues come from exports, with presence across all major geographies globally



Manufacturing Capabilities

- Has eight manufacturing facilities in India (across Kerala, Andhra Pradesh, Tamil Nadu and Karnataka) and one in China
- Apart from conventional extraction techniques, Synthite extensively uses modern methods like supercritical extraction, spinning cone column and freeze drying in its manufacturing facilities



R&D Focus

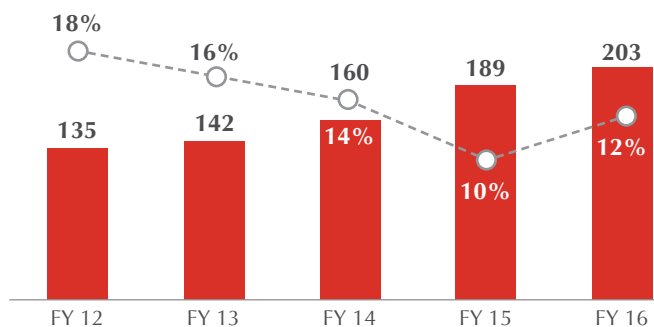
- Has an R&D team focused on product development and process optimization
- Helps in enhancing its product basket, and reducing the cost of existing products
- Liaises with customers to deviate from standard products and help develop new products and applications as per their demands



Key Highlights

- Market leader in the natural base ingredients space in India, with global leadership in the products of choice
- Has a completely integrated platform with Farmtech, their raw material sustainability initiative, providing backward integration. Gradually getting into F&F blends
- Strong track-record of top-line growth, well poised to ride the growth in the natural base ingredient space

FINANCIAL OVERVIEW



■ Revenue ---○--- EBITDA margin (%)

Note: All financials in USD mn



COMPANIES
TO WATCH OUT
FOR



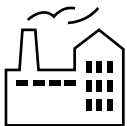
Founded in 1979 by Mr. C.J. George, Plant Lipids is the second largest natural base ingredient manufacturer in India. The Company is headquartered in Kochi and clocked a turnover of ~USD 150mn in FY16

BUSINESS OVERVIEW



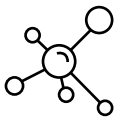
Products and End Markets

- Manufactures oleoresins, essential oils, natural food colours, specialty extracts and micro-encapsulated products
- 65% of revenues come from exports; supplies more than 500 products to over 80 countries worldwide



Manufacturing Capabilities

- Has fifteen manufacturing units in India (including 10 units in Kochi) and one in Sri Lanka
- Manufacturing facilities comply with ISO 9001:2008, ISO 22000:2005, Spice House Certification, Kosher, Halal, etc.



R&D Focus

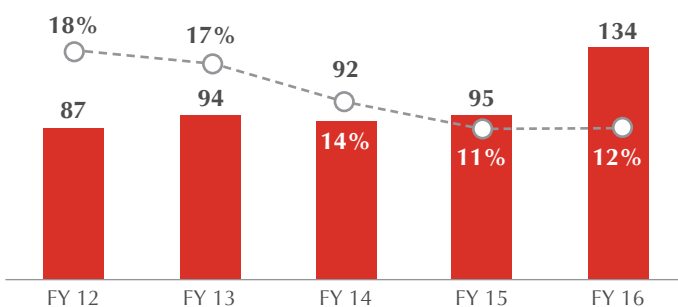
- Has an R&D centre consisting of state-of-the-art labs, instrumentation, bench and pilot scale plants.
- Leads R&D efforts on several natural bio-active ingredients, isolating and standardizing these active principles from nature; also helps establish efficacy of new products through clinical studies.



Key Highlights

- One of the largest Indian players in the natural base ingredients space
- Wide product basket spanning across spices, extracts, formulated products and natural colors
- Large network of regulatorily compliant facilities

FINANCIAL OVERVIEW



■ Revenue ---○--- EBITDA margin (%)

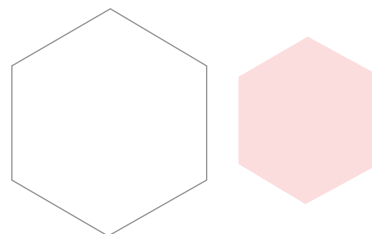
Note: All financials in USD mn | Figures refer to standalone numbers. Consolidated numbers are higher. FY16 consolidated revenues stood at ~USD 150mn



**COMPANIES
TO WATCH OUT
FOR**



Privi Organics Limited



Privi Organics is the largest aroma chemicals manufacturer in India. Incorporated in 1992, Privi has grown fast into a market leader with USD 93mn of revenues in FY17. In 2016, Fairbridge Capital took a majority stake in the company, and subsequently restructured it to make it a wholly owned subsidiary of Fairchem Specialty, a publicly listed holding company

BUSINESS OVERVIEW



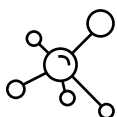
Products and End Markets

- Manufactures 50+ aroma chemicals; major products include Amber Fleur, Dihydromyrcenol (citrus character), Citral derivatives, etc.
- ~60% of Privi's revenues come from products based on pine chemistry
- Supplies to all the major F&F houses globally



Manufacturing Capabilities

- Has 4 manufacturing facilities with a total capacity of 22,000 TPA
- Fully integrated to process Crude Sulfate Turpentine (CST) - a waste from pulp mills – to make α and β Pinene – key building blocks for pine based products



R&D Focus

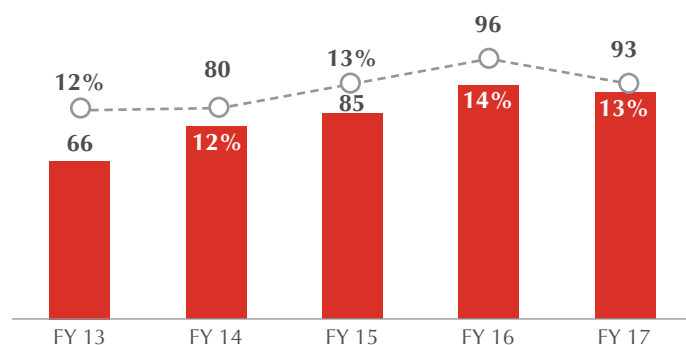
- Has a state-of-the-art R&D lab approved by DSIR, Government of India
- R&D team developing process to convert by-products from CST and other manufacturing processes
- R&D team developing processes to add new products like Privimoss, Rose alcohol, etc.



Key Highlights

- Scaled up manufacturer, enjoys economies of scale
- Backward integrated, helping secure raw material supply at more stable prices
- Expected to witness growth from expansion of infrastructure and new product launches

FINANCIAL OVERVIEW

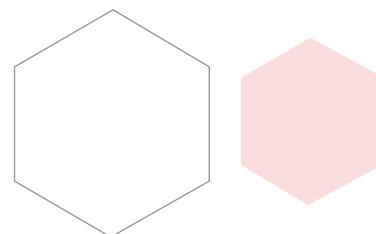


■ Revenue ---○--- EBITDA margin (%)

Note: All financials in USD mn



COMPANIES
TO WATCH OUT
FOR



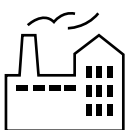
Eternis Fine Chemicals is the second largest Indian aroma chemical manufacturer. Wholly owned by the Mariwala group and led by Rajen Mariwala, the company started selling aroma chemicals in 1988. Apart from the organic growth in the business, Eternis is actively looking at inorganic opportunities to bolster growth

BUSINESS OVERVIEW



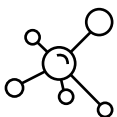
Products and End Markets

- Engaged in the manufacture of aroma chemicals for fragrance solutions
- Key products include hexyl cinnamic aldehyde, Hamber, benzyl salicylate, PTBCHA, OTBCHA, Coumarin, etc.
- Supplies to all major global F&F players; 80% of its revenues come from exports



Manufacturing Capabilities

- Two manufacturing facilities in Maharashtra, located close to ports to serve international F&F houses efficiently
- All main products are registered with the EU and are Kosher certified



R&D Focus

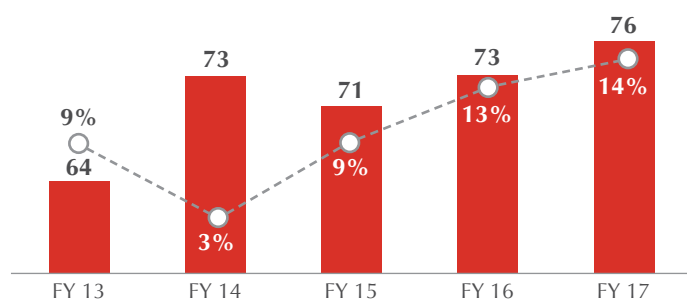
- State-of-the-art R&D centre located in Navi Mumbai, approved by DSIR, Government of India
- Works on process optimization, development of new products and technology platforms



Key Highlights

- Large scaled up player, with best manufacturing practices and economies of scale through product focus
- High focus on R&D with a healthy product pipeline to supplement growth from existing products

FINANCIAL OVERVIEW



■ Revenue ---○--- EBITDA margin (%)

Note: All financials in USD mn



COMPANIES
TO WATCH OUT
FOR



Established in 1991 by Dr. Vincent Paul and headquartered in Navi Mumbai, Anthea Aromatics is a leading Indian manufacturer of aroma chemicals. It is one of the most profitable aroma chemical companies in India, which is attributed to efficient raw material sourcing strategies, process efficiencies and the high quality of its products, which enables it to command a premium in the market. The company received PE funding of USD 18mn from ICICI Ventures in 2016. In FY17 the company had revenues of ~USD 45mn

BUSINESS OVERVIEW



Products and End Markets

- Manufactures a range of fragrance chemicals and intermediates
- Sells to large F&F players (IFF, Givaudan); has strong presence in global markets with exports to North America, Europe and Asia



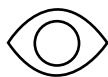
Manufacturing Capabilities

- Currently operates 4 manufacturing facilities close to Mumbai, capable of handling a range of complex chemistries
- Setting up 2 new greenfield projects in Mangalore for the production of specialty chemicals
- Significant logistical advantage as it is located close to major ports and airports
- Over 11,000 MTPA of manufacturing capacity



R&D Focus

- In-house R&D assets include both bench-scale laboratory and pilot plant facilities
- Works on optimizing process technologies as well as expanding product range



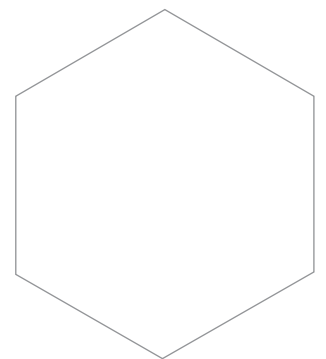
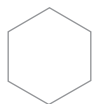
Key Highlights

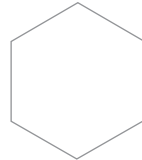
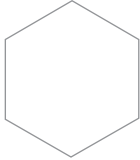
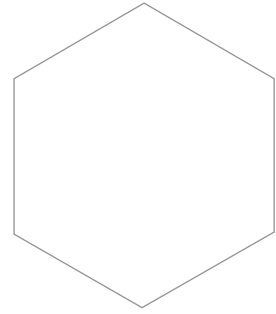
- Has a secure, cost-effective and high-quality source of raw material (for a large part of its business) through its tie-up with DRT, a major French aroma chemicals business
- Focuses on a select number of products where it has a competitive edge, resulting in high margins
- High focus on R&D resulting in an ability to develop best-in-class products



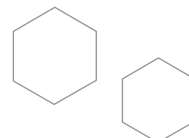
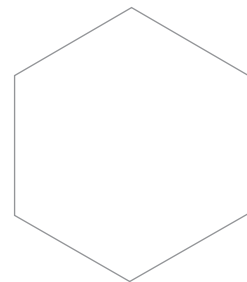
C.4 Closing Thoughts

Base ingredients are a critical part of the F&F and nutraceutical value chain. India is well positioned in the natural ingredients space because of the abundance of raw materials and a rich legacy of using natural products as alternate forms of treatment for several centuries. At the same time, several Indian synthetic ingredient/aroma chemicals manufacturers have chosen specific niches and molecules within them, and mastered the chemistry, created a robust supply chain, and optimized processes to become leading players in these chosen molecules globally. Overall, these strengths have played out well for the Indian base ingredient players, with some very large and attractive businesses having been built in this space. These businesses are expected to grow significantly going forward, at a CAGR of 11% over the next 5 years. This growth will mostly be driven by growth in the end-user industries both globally and in India. Rising disposable income, rural penetration and premiumisation are leading to an increasing demand for flavours and fragrances in India. Globally, increasing acceptance of Indian products is a major growth driver for the base ingredient manufacturers, with an increasing amount of products being exported.





“The Indian base ingredients market is currently sized at ~ USD 2.8bn, growing at a CAGR of 11% and expected to reach USD 4.8bn in 2021. The natural ingredients market is expected to grow faster than its synthetic counterpart”





FLAVOURS AND FRAGRANCES BLENDS

D.1 Introduction

Flavours and fragrances are very critical components of food & beverage, home and personal care products as they create a strong sensorial impact on the customer, contributing to a positive or negative brand recall. F&F blends use a large number of ingredients which can either be natural or synthetic, or a combination. Blending involves mixing of different flavours or fragrances to obtain the desired flavour or fragrance. The major end-users of F&F blends are personal care (soaps and shampoos, skin care products), household care (detergents), food and beverages (dairy, confectionery, and bakery) and perfume manufacturers.

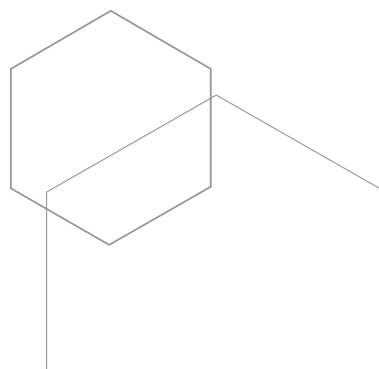
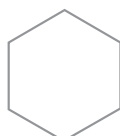
The fragrance of a perfume is described by the notes that it is made up of. Notes are the descriptors of scents that can be sensed upon application of a perfume. These are of three classes - top/head notes, middle/heart notes and base notes. These notes differ with respect to the time that they can be sensed after application of the perfume.

- **Top/head note:** This is generally the lightest note of a fragrance which is recognised immediately upon application. They have a light molecular structure and are the first to fade away. Common top notes include citrus (lemon, orange zest), light fruits (grapefruit, berries) and herbs (clary sage, lavender)
- **Middle/heart note:** This note is sensed once the top note evaporates. It lasts longer than the top note and has a strong influence on the base note. Typical middle notes include geranium, rose, lemongrass, coriander, nutmeg and jasmine
- **Base note:** This is the final fragrance note that appears and leaves a lasting impression. It mingles with the middle note to create the full body of the fragrance. Common base notes include cedarwood, sandalwood, vanilla, amber, patchouli and musk

There are three major flavours in a blending process – main, enhancing and accent. **Main** is the dominating flavour in the formulation forming the core of the blend and is supported by **enhancing** flavours. **Accent** flavour is added in a small quantity which serves to round up the flavour of the other two types and is normally very strong and assertive in its sensorial impact.

Flavours are segmented on the basis of the industry they serve. These include savory flavours, fruity flavours, cheese and other dairy flavours and meat flavours.

- **Savory flavours:** These are used in snacks, cooking sauces and ready-to-eat meals. Demand for savory flavours is driven by increased consumer demand for convenience food and drinks
- **Fruity flavours:** These are used in fruit-flavoured drinks such as alcohol and fruit juices. The demand is driven by increasing innovation in the F&B industry
- **Cheese and other dairy flavours:** These are used by flavoured milk, yoghurt, cheese and other dairy product manufacturers. The demand is driven by increasing health consciousness of customers



D.2 Market Size

D.2.1 Global Market

Globally the F&F market is USD 27.1bn in size, expected to grow at 6.4% over the next 5 years, to reach USD 37.0bn by 2021. The growth drivers for this market are as follows:

- Strong growth in healthy variants within the F&B industry –** Increasing levels of obesity, especially in developed nations like USA has led to an increasing demand for low-fat and low-carbohydrate foods and beverages. Consumers are getting more health conscious and with increasing lifestyle changes, confidence in these products is increasing. This requires greater added flavours to enhance the taste of these products and is a major growth driver.
- Growth in processed foods –** With an evolving lifestyle and increase in disposable income, more people are moving towards processed foods. This growth is especially pronounced in the developing markets which has witnessed a growth of 3% in this category as compared to 2% globally. This has led to a significant increase in demand for flavours for these foods.
- Consumers’ inclination to experiment –** Consumers in developed markets with rising disposable income are more willing to experiment with different flavours and fragrances. They are more willing to spend on unconventional non-essential products across food and personal care categories. For example, there is a wide variety of shampoos available today – ranging from dry shampoos to beer shampoos which are increasingly being purchased by customers globally.
- Change in perception of fragrances –** Fragrances have traditionally been considered as a good-to-have rather than a must-have attribute for products. This perception is slowly changing, especially with the advent of premium personal care products. The fragrance of a product has a huge impact on its perception and has gradually become more of a necessity than a luxury. This has helped to significantly open up the market for F&F blenders.

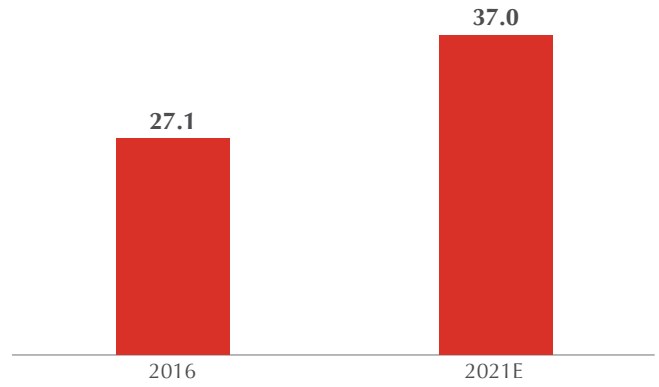


Figure 14: Global F&F Market Size (USD bn)

Source: Industry reports, Avendus analysis

The growth in the F&F market is largely driven by the Asian market as illustrated in the graph presented alongside:

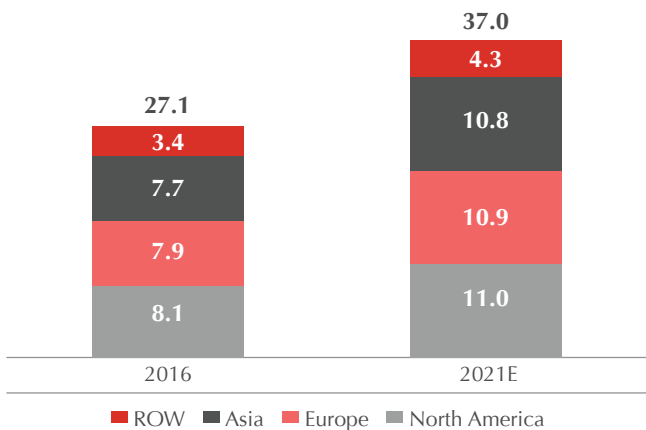


Figure 15: Global F&F Market Size by Region (USD bn)

Source: Industry reports, Avendus analysis

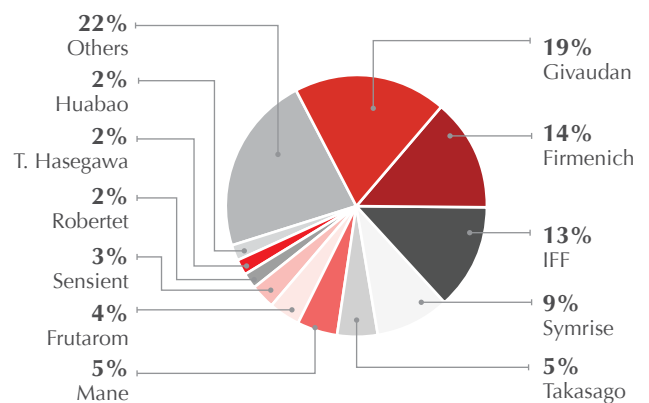


Figure 16: Market Share of Major F&F Players (2016)

Source: Industry reports, Avendus analysis

The global F&F market is a reasonably consolidated market, with the top 5 players constituting ~60% and the top 10 players constituting ~80% of the market.

Like the base ingredients market, the global F&F market is largely constituted by synthetic F&F blends with 32% of the flavours, 38% of fragrances and over 70% of the overall market being comprised of synthetic products.

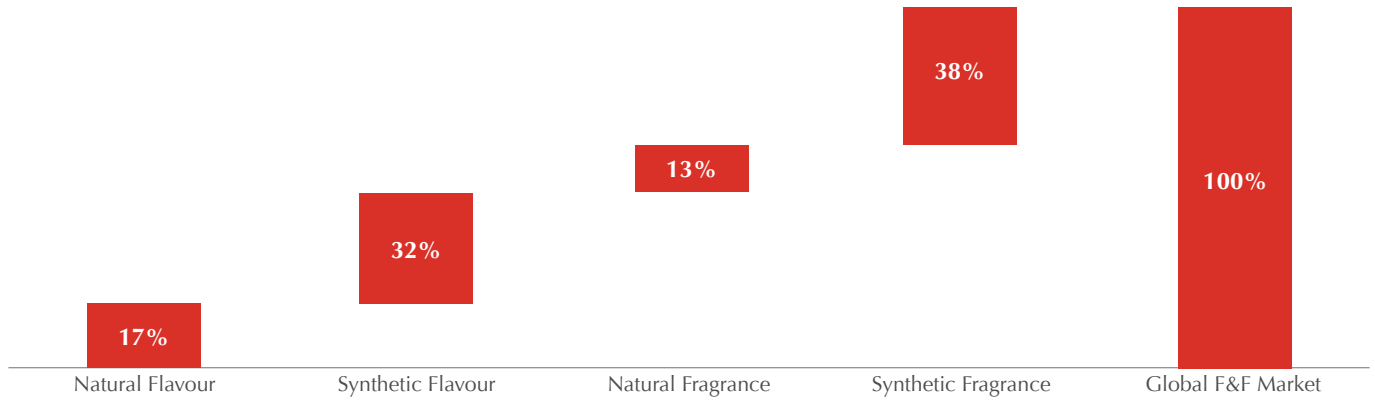


Figure 17: Break-up of the Global F&F Market

Source: Avendus analysis

D.2.2 Indian Market

The organized Indian F&F production market is USD 1.1bn in size, close to 30% of which is exported. The Indian market, just like the global F&F market is dominated by the MNCs, with the top 4 global players (Givaudan, IFF, Firmenich and Symrise) constituting over 50% of the market. S H Kelkar is the only Indian player of scale, with the Ultra group having created a sizeable business as well. After these two, the scale of Indian companies drops off sharply, with the remaining F&F outfits being USD 30mn or lesser in size.

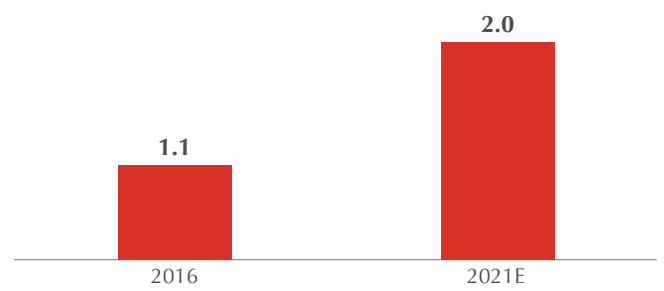


Figure 18: F&F Production Market in India (USD bn)

Source: Avendus analysis

The growth drivers of F&F in India are as follows:

- **Strong end-user growth, driven by increased penetration, rising affordability** – F&F blends are mainly used by industries like F&B and FMCG. In the recent past, with rising disposable income in India, these segments have seen explosive growth. Penetration of FMCG majors like HUL, P&G in rural areas has also been a significant contributing factor.
- **Premiumization of FMCG products** – Indian consumers are moving towards using high end personal care products like hair gels, lotions, skin creams and so on. These products, on an average, use a higher quality of flavours and fragrances than the usual soaps and detergents. Segments like fruit based drinks and air care market are expected to grow at +30% p.a.
- **Rising exports** – Most of the major F&F houses have manufacturing plants in India from where they supply blends to their customers across the world. Even Indian players like S H Kelkar are increasingly supplying to customers outside India, with exports constituting 37% of their total sales.

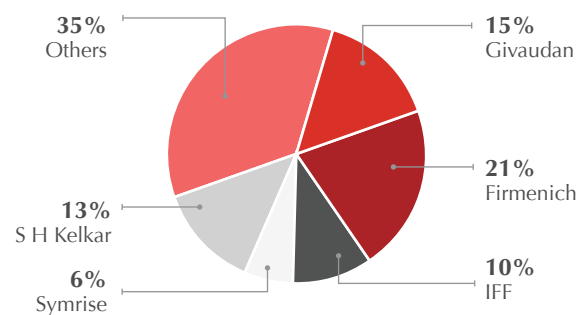


Figure 19: Market Share of Major F&F Players in India (2016)

Source: Avendus analysis

D.3 Key Success Factors

- **Ability to innovate** – Blenders create products by mixing together various base ingredients in unique combinations. This involves considerable IP and blenders need to keep innovating to create new flavours and fragrances to satisfy the demands of the market. They collaborate with end-users as well as ingredient manufacturers to come up with unique scents. The major global F&F houses spend an average of 9% on R&D, highlighting its importance to stay ahead of the curve.
- **Relationship with customers** – In some cases, customers could be large FMCG players like HUL and P&G which have significant requirements for F&F across their product basket. In such cases, most of the major F&F houses and some scaled up Indian players directly align with them to supply specific flavours and fragrances for their specific products. Customer acquisition is a long drawn out process with several customers having stringent vendor selection processes and quality norms. This makes building and maintaining relationships with these customers extremely important.



COMPANIES TO WATCH OUT FOR



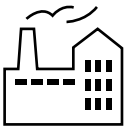
Established over 90 years back in 1922, Keva (earlier known as S H Kelkar) is the largest Indian fragrance and flavour company. With close to INR 1,000cr in revenues, it manufactures and markets 9000+ products to 4000+ customers across the world. It is one of the few publicly listed companies in this space

BUSINESS OVERVIEW



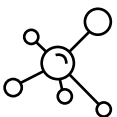
Products and End Markets

- Manufactures a range of flavours and fragrances
- Fragrance products and ingredients are used by FMCG companies in personal care, fabric care, hair care, home care, fine fragrances and blended products
- Flavours are used in baked goods, dairy products, beverages, savory snacking and pharmaceutical products



Manufacturing Capabilities

- Operates three manufacturing facilities in India (Vapi, Mumbai and Raigad) and one in the Netherlands
- Has an aggregate fragrance manufacturing capacity of 18,655 TPA, and an aggregate flavours manufacturing capacity of 3,000 TPA



R&D Focus

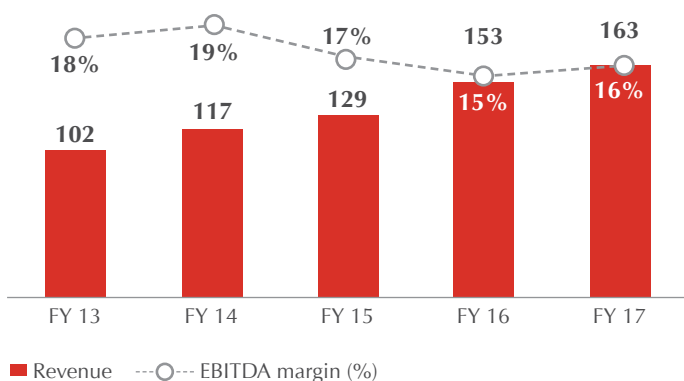
- Has two state-of-the-art R&D facilities in India and the Netherlands, engaged in developing new and better products for domestic and global markets
- Strong focus on R&D – expanded its discovery & development team by 30% in FY17, initiated long term research programmes for future products



Key Highlights

- Only scaled-up Indian F&F blender in a segment completely dominated by the MNCs – 23% market share in fragrances and 3% in flavours, overall 13% market share in the Indian F&F market
- Strong focus on R&D and product development, ~20% of its revenues come from products launched in the last 3 years
- Has acquired businesses in the past, plans to supplement organic growth with more acquisitions

FINANCIAL OVERVIEW



Note: All financials in USD mn



COMPANIES
TO WATCH OUT
FOR



Ultra International Limited

Fragrances, Flavours & Essential Oils

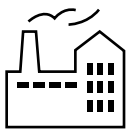
Established in 1987 by Mr. Sant Sanganeria, the Ultra Group is the second largest flavour and fragrance blender in India. With a presence across India, Indonesia, Netherlands, Australia, USA and Singapore through its own offices/facilities and several other countries through distributors/agents, and over 80% of its revenues coming from global markets, the Ultra Group has successfully created a global F&F franchise. The group clocked ~USD 125mn of revenues in FY17, with ~USD 25mn coming from the Indian market

BUSINESS OVERVIEW



Products and End Markets

- Manufactures flavours, fragrances and essential oils
- Customers include all major FMCG and F&B companies for blends and F&F players for essential oils
- Caters to most large markets across the globe, with bases in India, Indonesia, Netherlands, Australia, USA and Singapore



Manufacturing Capabilities

- Operates manufacturing and processing facilities in India, Indonesia and Australia
- Caters to various geographies through warehouses in India, USA, Australia, France, Indonesia, Netherlands, Singapore and Uruguay



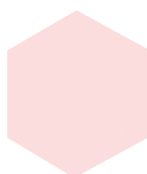
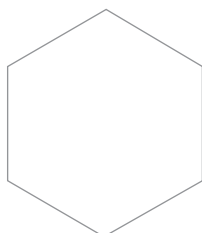
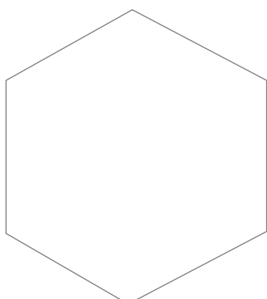
R&D Focus

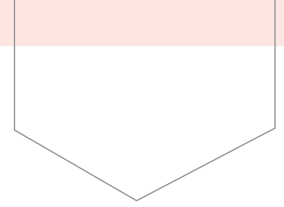
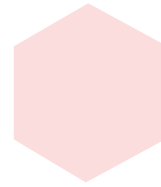
- Has a state-of-the-art 35,000 sq. ft. creative centre in Delhi
- Started in 2004, this centre houses flavour and fragrance creation and application facilities, and a consumer insights centre. The facility also features R&D, creative and analytical perfumery laboratories



Key Highlights

- Global presence, with own offices/facilities across Asia, Europe and Americas
- High focus on R&D, backed by modern infrastructure
- Excellent sourcing capabilities from across the world





Oriental Aromatics Ltd.

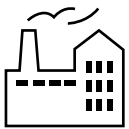
Established in 1955 by Mr. Keshavlal Bodani, and currently led by Mr. Dharmil and Shyamal Bodani, Oriental Aromatics is one of the leading F&F blenders in the country. In 2008, Oriental acquired Camphor and Allied Products (CAPL), a 5 decade old aroma chemicals company, in an effort to backward integrate its business. In its current structure, Oriental is the parent of the listed entity CAPL and is now looking to merge the two businesses

BUSINESS OVERVIEW



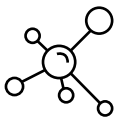
Products and End Markets

- Oriental Aromatics is one of the leading F&F blenders in India, with a standalone revenue of USD 20mn+ and a combined revenue (along with CAPL) of USD 70mn+
- CAPL produces synthetic camphor (used in incense, pain balms, insect repellents), terpene phenol resins (used in auto tyres, adhesives and coatings), terpineols and other perfumery chemicals (used in F&F which in turn are used in FMCG products)



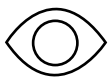
Manufacturing Capabilities

- The Group has 3 manufacturing facilities – Oriental Aromatics has an unit in Ambernath for F&F blends, CAPL has a unit in Bareilly (for synthetic camphor and terpineols) and one in Baroda (for other aroma chemicals like astrolide, astromusk, etc.)
- It is in the process of expanding its capacity at the Baroda facility



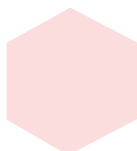
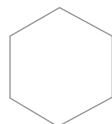
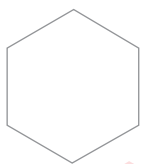
R&D Focus

- CAPL has an R&D center, established in 1974 to carry out extensive work on terpene chemistry
- It has been successful in developing and commercializing multiple new products



Key Highlights

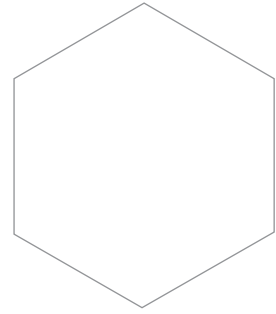
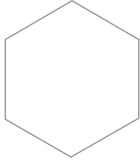
- Successfully grew CAPL post acquisition, revenue growth of 3x since acquisition
- The combination represents a fully integrated F&F platform, with a strong presence in aroma chemicals and one of the few scaled up Indian blending businesses
- Run by a young management with a long-term commitment to growing the business



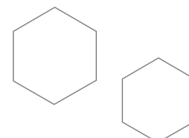
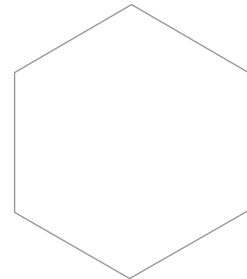
D.4 Closing Thoughts

The F&F market globally is an extremely consolidated market with Givaudan, IFF, Firmenich and Symrise constituting over 50% of the global market. These same players dominate the Indian market as well with IFF, Firmenich, Givaudan and Symrise making up over 50% of the market in India. This space has significant entry barriers around IP and product expertise which explains the strong dominance of the incumbents. S H Kelkar has been able to break into this market successfully, with Ultra and Oriental having built sizeable businesses as well. We think that the Indian players who have scaled up will exhibit strong growth, garnering market share in India and globally. However, challenges for smaller players to scale will continue, given the nature and structure of the industry.





“ The organized Indian F&F production market is USD 1.1bn in size, close to 30% of which is exported. The Indian market, just like the global F&F market is dominated by the MNCs, with the top 4 global players (Givaudan, IFF, Firmenich and Symrise) constituting over 50% of the market ”





NUTRACEUTICAL INGREDIENTS

E.1 Introduction

Nutraceutical ingredients are the active components that impart functional benefits to the nutraceutical formulation. Nutraceutical ingredients can be extracted from natural bases (herbs, spices, fruits and flowers) or can be derived synthetically (synthetic vitamins, glucosamine, etc.). They have a similar supply chain as the F&F industry. The overlap is particularly evident on the natural side where many natural base ingredient manufacturers produce extracts that go both into the F&F as well as the nutraceutical industry.

India, by virtue of having an abundance of useful herbs and spices, as well as owning a rich history in Ayurveda and related sciences, is becoming an increasingly meaningful player in the natural nutraceutical ingredients segment. Over the last decade, many of the Indian players have started innovating around this space, creating scientific, clinical evidence based products which have been able to achieve leadership positions globally. We see nutraceutical ingredients as a very interesting space where Indian players are extremely well-poised to grow and become leaders in their chosen segments.

E.2 Market Size

E.2.1 Global Market

Nutraceutical ingredients cater to the nutraceuticals segment which has seen tremendous growth over the past decade. Key growth drivers of the nutraceutical segment are:

- Increase in medical costs** – Medical costs have been growing globally. In 2014, USA saw a growth of 5.3% healthcare spending to reach USD 3 trillion. This meteoric rise in costs has prompted consumers to turn to preventive healthcare techniques to minimize the spending on medication and treatment. This has led to an increase in demand for functional foods/nutraceuticals, especially to prevent vitamin deficiency diseases like scurvy, dementia, and night blindness.
- Unhealthy lifestyle driving need for supplements** – The changing lifestyle globally is leaving people with busier work schedules and higher pressure, often resulting in poor eating habits and a sedentary lifestyle. People have become more dependent on fast food and pre-processed foods with a rapid rise in obesity and other chronic diseases like diabetes, cancer, etc. However, there is an increasing awareness of the ill-effects of such a lifestyle, which has started driving the younger generation towards various forms of supplementation in their daily diet.
- Ageing Population** - The number of people above 65 years is expected to increase by over 250% in developed nations and over 71% in developing nations by 2050. Older individuals are more prone to health issues arising from unbalanced dietary habits and lack of exercise as compared to youngsters due to lower immunity levels and inadequate absorption of nutrition from food. This has led to an increased demand for nutraceuticals from this segment of the population mainly to prevent age-related diseases and digestive disorders.
- Global focus on Ayurveda** – Recently, several companies have started looking at Ayurvedic medicine and its nutritional applications. Scientists have started experimenting with herbs like ginger, garlic, turmeric and black pepper which have been known for their nutritional and medicinal benefits in India for several centuries. These herbs are studied in great detail for effects on human health, toxicity levels, active compounds, and bioavailability in order to be used in modern nutraceuticals. There are several studies and clinical trials conducted in order to prove the benefits and determine any harmful effects of the herbs using science.

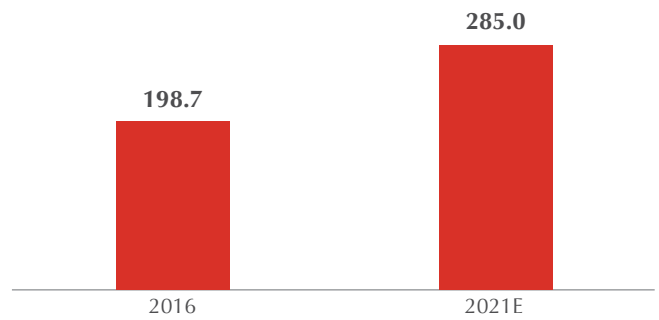


Figure 20: Global Nutraceutical Market Size (USD bn)

Source: Industry reports

The US is the largest market for nutraceuticals in the world, followed by Japan and the European Union. The global market for nutraceuticals is estimated at USD 198.7bn in 2016 and is expected to reach USD 285.0bn by 2021. The global market is dominated by players like DSM, ADM, Kalsec and Chr. Hansen. These players have managed to scale up by building strong multi-product portfolios through innovation, marketing, and strong science, enabling them to be included in the mainstream nutraceutical market.

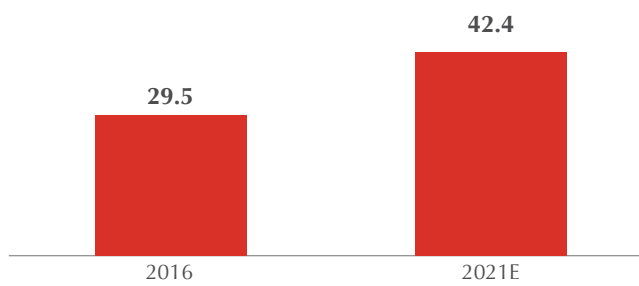


Figure 21: Global Nutraceutical Ingredients Market Size (USD bn)

Source: Industry reports

Company	Segment	Revenue* (USD mn)	3 yr CAGR	Nutraceutical Products
DSM	Human Health	2,060	3%	Carotenoids, cultures, nutrient premixes, nutritional lipids, vitamins, nutraceuticals
Chr. Hansen	NA	1,054	3%	Probiotic supplements, food cultures and enzymes
Croda	Specialty Fine Ingredients	227	16%	Natural functional food ingredients, natural pharma/nutraceutical extracts, natural algae-based biotech products, and natural antioxidants

Figure 22: Major Nutraceutical Ingredient Players Globally

*Note: Segmental revenue for the nutraceutical segment

Buoyed by the growth of the end-user (nutraceutical) segment, the nutraceutical ingredients segment is also picking up steam, and is expected to grow at a CAGR of 7.5%, to reach USD 42.4bn by 2021

E.2.2 Indian Market

The Indian nutraceutical ingredients market is a relatively nascent space, with most large companies having emerged over the last two decades. The organized market stood at ~USD 550mn in 2016, and is expected to grow at 20% to USD 1.3bn by 2021. Multiple companies have been able to leverage their strengths around raw material sourcing, process knowledge and R&D to create globally acceptable products and scale up rapidly. Given the fledgling state of the nutraceutical formulations market in India, most of the Indian ingredients manufacturers focus on exports. In many cases, over 90% of the revenues of the nutraceutical ingredients companies come from exports.

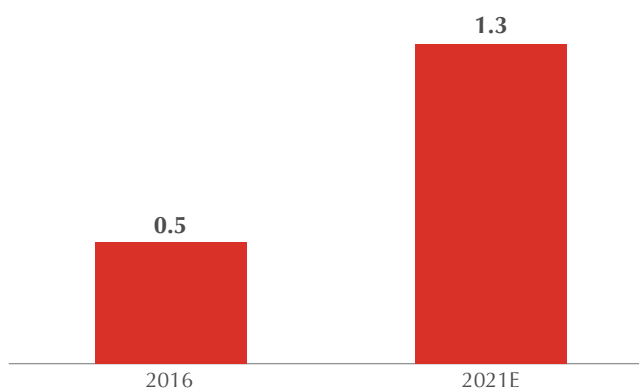


Figure 23: Indian Nutraceutical Ingredients Market Size (USD bn)

Source: Avendus analysis

History of Ayurveda in India and how India is well poised to capture its growth

Ayurveda is a traditional medical system that was developed over 5,000 years ago in India. It has mentioned several benefits of food for therapeutic use. Ayurvedic concepts promote the use of several herbal compounds, special diets based on each individual's body and other unique health practices based on its concepts of life.

Ayurvedic medicine uses a variety of products and practices that are generally abundant in the Indian subcontinent. Ayurvedic products are made either of herbs or a combination of several herbs, minerals, or other materials in an Ayurvedic practice called *Rasa Shastra*.

Some plants like ginger, emblica, garlic, black pepper, turmeric and Indian basil form an important part of the traditional diet. Research has demonstrated evidence of their antioxidant, anti-inflammatory, memory enhancing and revitalizing effects. They have also been linked to reduction in severity of many diseases, including heart diseases, gastrointestinal maladies, stroke and many more.

As the awareness of Ayurvedic medicines and their use increases in the West, demand for these products is expected to grow significantly over the next few years. The demand for Curcumin, a turmeric extract, has grown rapidly in the past decade and is expected to grow at 20% till 2020 due to its anti-inflammatory and antioxidant properties. Several other herbs like ginger and ashwagandha are also expected to grow as they become more mainstream.

In 2014, the Government of India created the ministry of **AYUSH** in order to develop and promote yoga and Ayurveda, among others. The objectives of the AYUSH ministry (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) are to upgrade the educational standards of Indian Systems of Medicines, strengthen existing research institutions and to ensure a time-bound research programme on identified diseases, draw up schemes for promotion, cultivation and regeneration of medicinal plants, and evolve Pharmacopoeial standards for Indian Systems of Medicine and Homoeopathy drugs.

AYUSH helps enforce the quality control of Ayurveda, Siddha, Unani and Homeopathy (ASU&H) drugs and the sustainable availability of raw materials by promotion of medicinal plants in states. The Government of India provides financial assistance to states to develop and promote the AYUSH systems including Ayurveda in the country through different activities.



Ayurveda is expected to lead growth in nutraceuticals in India. As the benefits of traditional medicine are studied in greater detail and supported with clinical evidence, ayurvedic herbs are expected to gain more acceptance. India, which is abundant in natural resources and ayurvedic knowledge, is expected to drive growth in the nutraceutical ingredients market.

E.3 Key Success Factors

- **R&D and innovation** – The market for nutraceutical ingredients in India is divided into large organized players, who invest in science and technology to create high-quality products, and small, mostly unorganized players who simply sell processed extracts to nutraceutical companies. Given the fact that the nutraceutical industry is still based primarily in the developed markets and 80%+ of India's production is exported, it is very critical to have a strong R&D machinery to come up with globally acceptable and efficacious products to scale up in this space. We see R&D and innovation as a strong differentiator for outperformers in this segment.
- **Marketing** – Consumption of nutraceuticals is a discretionary spend for most people as it is preventive medication and does not solve for any existing disease. This makes the marketing campaigns for such products very important to drive sales. Nutraceutical ingredient players need to invest significant time and money in clinical studies to support claims of efficacy and effectiveness. This not only helps to promote branded ingredients, but is also helpful for customers of ingredient manufacturers to promote their products. Today, consumer companies are also collecting data, analysing behaviour and lifestyle to target customers with tailor-made solutions based on their shopping habits. For example, in 2013, Tesco unveiled plans to provide tailored suggestions for healthier eating based on a person's shopping basket.
- **Product selection** – It is very important for nutraceutical players to choose products which can be scaled up easily. Parameters such as market size and expected growth rate for the product and its therapeutic segment, competitive landscape need to be kept in mind while deciding on a product strategy.
- **Raw material sourcing** – As is the case with F&F ingredient manufacturers, nutraceutical players are a very small customer for the suppliers of chemicals and command very low bargaining power. Similarly, the production of natural extracts is highly seasonal and having control over its supply is an important factor for nutraceutical ingredient manufacturers.



COMPANIES
TO WATCH OUT
FOR



SAMI LABS

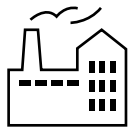
Established in 1991 by Dr. Muhammed Majeed, Sami Labs is the largest nutraceutical ingredients manufacturer in India. Sami, along with its USA subsidiary, clocked ~USD 150mn of revenues in FY17. It is an innovation driven company with a high focus on R&D, exemplified by its 150+ international patents and several differentiated and innovative products

BUSINESS OVERVIEW



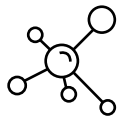
Products and End Markets

- Supplier of phyto-extracts, enzymes, probiotics, functional ingredients and cosmeceuticals
- Sells to all major nutraceutical formulators, cosmetic, personal care and F&B players



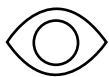
Manufacturing Capabilities

- Operates five manufacturing facilities in India (four in Bangalore and one in Hyderabad) and one in USA (Utah)
- The manufacturing units are technology/product dedicated facilities, thereby bringing out operating efficiencies
- Fully integrated supply chain with robust procurement arrangement with farmers



R&D Focus

- Significant focus on R&D, with independent divisions working on development of natural drugs, phyto-extracts, synthetic compounds and biotech products
- Strongest track-record of IP creation among Indian peers, 150+ international patents, with 60+ US patents
- Regularly spends 5% of its revenues on new product development. In addition to this, it conducts clinical trials on its products through a group owned CRO called Clinworld



Key Highlights

- Led by Dr. Majeed, one of the pioneers in the Indian nutraceutical industry, who has instilled an R&D driven culture in the organization
- Excellent global outreach through its US subsidiary Sabinsa
- A wide basket of differentiated products across multiple segments of health ingredients



COMPANIES
TO WATCH OUT
FOR



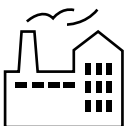
Started by Sanjay Mariwala in 2005, OmniActive is the second largest nutraceutical ingredient manufacturer in India, offering a range of innovative, quality driven active health ingredients which are scientifically validated for dietary supplementation, nutritional fortification and functional food applications. It received USD 35mn PE funding from Everstone Capital in Jan 2017, and subsequently acquired Indfrag, a Bangalore based extracts and nutraceutical ingredients company

BUSINESS OVERVIEW



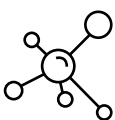
Products and End Markets

- Manufactures a range of nutraceutical ingredients, with key products being Lutemax (a range of lutein based ingredients), Capsimax (concentrated capsicum extract in a controlled-release beadlet) and CurcuWin (highly bio-available form of curcumin)
- Sells to large nutraceutical formulators globally – 90%+ of its revenues come from exports, and 80%+ from the US



Manufacturing Capabilities

- Operates three manufacturing facilities located in Maharashtra and three in Karnataka capable of producing 168 TPA of oil suspension products and 98 TPA of beadlets, handling 10,000 tonnes of raw material
- The company has been inspected and approved by US FDA and FSSAI, and by several large, global customers



R&D Focus

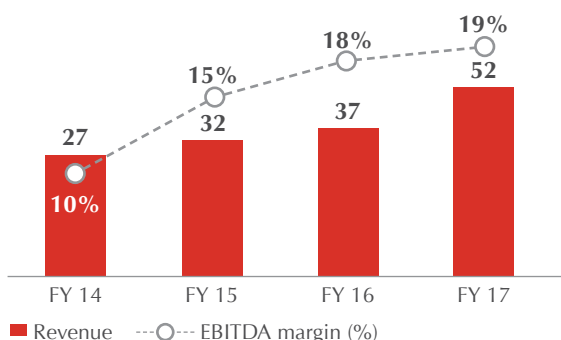
- Well equipped R&D centres at Canada and India (at Pune and Thane); 35 patents granted, 100+ patents applied for
- Strong track record of new product development & commercialization ; has a “Drug Discovery” approach to R&D



Key Highlights

- Scaled up player in a very attractive space, has a research driven approach for creating a differentiated portfolio of products
- Deep relationships with large customers (GNC, Amway, NBTY, etc.); very strong presence in the US market
- Vertically integrated supply chain, with marigold (key RM) being procured through contract farming operations

FINANCIAL OVERVIEW



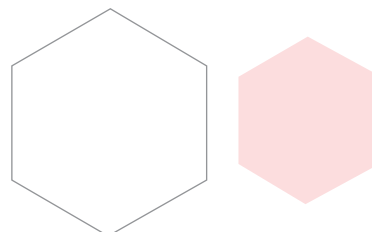
Note: All financials in USD mn | Consolidated financials | Source: Company estimates



**COMPANIES
TO WATCH OUT
FOR**



ARJUNA



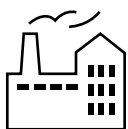
Established in 1989 by P.J. Kunjachan and Dr. Benny Antony, Arjuna Natural Extracts is a Kochi HQ-ed nutraceutical ingredients manufacturer. It is a highly R&D driven organization, having launched multiple innovative and differentiated products, and created leadership positions in products of choice

BUSINESS OVERVIEW



Products and End Markets

- Manufacturer and exporter of botanical extracts for pharmaceutical and nutraceutical industries
- Key products include turmeric extract, a combination of natural curcumin & ar-turmerone (BCM – 95), Omega 3, boswellia and amla extracts
- It has customers in India and over 40 countries across the world with international sales offices in Belgium and USA. Customers include pharma companies in India and nutraceutical formulators globally



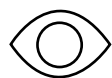
Manufacturing Capabilities

- 300 employees across four manufacturing units in South India
- Spread across 400,000 sq ft (cumulatively), these facilities are compliant with all relevant international standards



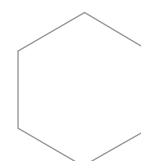
R&D Focus

- Heavily focused on R&D, invests about 10% of its turnover in conducting R&D studies on new products
- Team of 40 scientists with 32 granted patents and 36 pending patents; has R&D tie ups with universities in Australia, US and Japan
- State of the art laboratory approved by MoST, Government of India

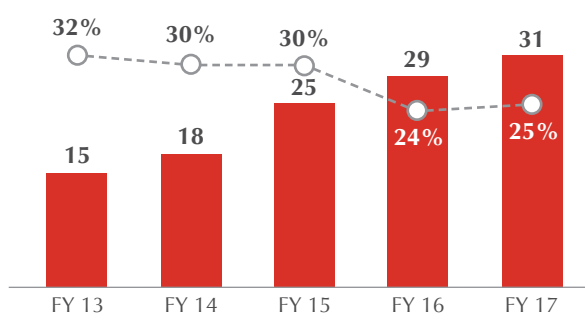


Key Highlights

- Created multiple, best-in-class, clinical science backed products
- BCM – 95 is one of the few USD 15mn+ nutraceutical ingredient brands in India
- Only manufacturer of high-purity Omega-3 fish oil in India



FINANCIAL OVERVIEW



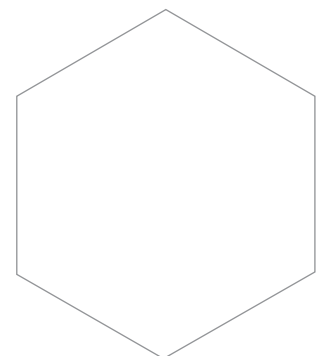
■ Revenue ---○--- EBITDA margin (%)

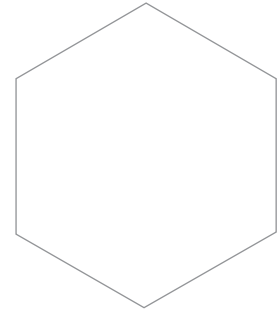
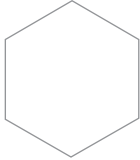
Note: All financials in USD mn



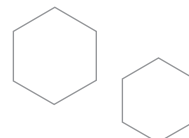
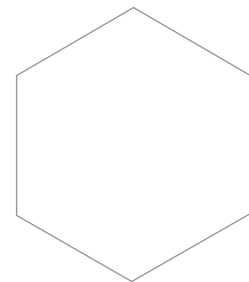
E.4 Closing Thoughts

The nutraceutical ingredients industry in India is a young industry with most of the players being established in the 1990s and 2000s and having scaled up in the last few years. This industry holds immense promise as Indian companies have started combining their strengths around raw material availability and traditional Ayurveda knowledge with solid, clinical science. The dominance of players like Sami Labs, Omniactive and Arjuna Natural Extracts in their chosen products is a testimony of the acceptance and success of these products globally. The test lies in replicating the success across a wider bouquet of products and therapies, which these players are gearing up towards. We expect this industry to witness supernormal 20%+ growth over the next 3-5 years.





“The Indian nutraceutical ingredients market is a relatively nascent space, with most large companies having emerged over the last two decades. The organized market stood at ~USD 550mn in 2016, and is expected to grow at 20% to USD 1.3bn by 2021”





KEY
TRENDS
SHAPING
THE
INDUSTRY

F.1 Changing regulations raising the bar, only high-quality players will succeed

In specialty chemicals in general, and F&F and nutraceuticals in particular, we have seen a significant increase in regulatory monitoring. Norms for both quality as well as EHS have been raised, and vendors are regularly scrutinized by agencies as well as large, global customers. We feel that the changing regulations would weed out the smaller, unorganized, non-compliant players, or at least restrict them from exporting to developed markets, or selling to large customers.

F.1.1 Regulations for Nutraceuticals

Globally, the regulations related to nutraceutical ingredients vary in terms of classification and specific requirements. As nutraceuticals are different from pharmaceuticals, several regulatory authorities have made it imperative for companies manufacturing nutraceuticals to clearly define their product and its benefits. In the US for example, the manufacturer is not allowed to claim that its product can cure or prevent diseases. In India, the FSSAI has recently introduced regulations covering health supplements, nutraceuticals, food for special dietary use and special medical purpose, functional foods and novel foods, which are expected to go into effect in January, 2018.

Geography	Regulatory Authority	Requirements
USA	Dietary Supplement Health and Education Act (DSHEA), Food and Drug Administration (FDA)	Compliance with guidelines for safety and health claims. A manufacturer cannot claim that the product will diagnose, cure, mitigate, treat or prevent a disease The manufacturer must also guarantee the identity, purity, strength and composition of its supplements
EU	European Food Safety Authority (EFSA)	Compliance with EFSA guidelines regarding product definitions, manufacturing, promotion, safety and health claims
Japan	Consumer Affairs Agency (CAA), Ministry of Health, Labour and Welfare (MHLW)	Seventeen nutrients (12 vitamins and five minerals) are permitted for use in FNFC (Food with Nutrient Functional Claims) products, with established minimum and maximum daily amounts to ensure sufficient nutrient intake and safety
India	Food Safety and Standards Authority of India (FSSAI)	The required manufacturing standards are less stringent than for pharmaceuticals

Figure 24: Regulations Around the World

This lack of harmonized rules in the nutraceutical space in different countries is also a challenge for companies as they need to adapt their marketing strategies to the regulations of each country.

F.1.2 Regulations for Aroma Chemicals

USA is a large export market for Indian aroma chemical manufacturers. In the US, aroma chemicals are regulated by the Food and Drug Administration (FDA), Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA). Aroma chemicals are also regulated by organizations such as International Fragrance Association (IFRA) and its research center Research Institute for Fragrance Materials (RIFM).

Cosmetics containing fragrance ingredients need to follow FDA regulatory standards. FDA requires that these ingredients must be present under the Fair Packaging and Labeling Act (FPLA). Other fragrance products which are not applied on the body (laundry detergents, room fresheners, fabric softeners) are regulated by Consumer Product Safety Commission.

These stringent regulations present in the market have both good and bad effects for the industry participants. They act as barriers to entry, greatly benefitting the players who already have a presence in the market with the required regulations. At the same time, it can significantly increase operating costs for smaller players and also delay product innovation.

The European Union's **REACH** (Registration, Evaluation, Authorisation and Restriction of Chemicals), which came into force on 1st June 2007, monitors the production and use of chemicals and their potential impact on human health and the environment. The law imposes obligations on downstream users and manufacturers to evaluate and control risks associated with substances. REACH will come into full effect in 2018 and its implementation is expected to be an important milestone for environmental regulation not only in Europe but also globally. REACH is considered as one of the most comprehensive regulatory frameworks and several other countries have modelled their policies around it. Under REACH, registrants are obliged to collect information on the intrinsic properties of a substance. The type and quantity of information on the intrinsic properties of a given substance that will be required as a minimum to meet the obligations of the regulation depends on the quantity of that substance that is manufactured or imported into the EU. For example, quantities between 1-10 tonnes a year will require certain physio-chemical data, toxicological information and ecotoxicological information, and quantities in the range of 10-100 tonnes a year require studies on in vivo skin irritation, in vivo eye irritation, screening for reproductive/developmental toxicity, etc. Implementation REACH is expected to adversely affect smaller aroma chemicals players for whom the cost of compliance is expected to increase significantly, and in turn benefit the larger, compliant players.

F.2 Inorganic Growth an Imperative

In the past few years, M&A activity has significantly increased in the F&F and nutraceutical ingredients sectors. Smaller players with strong competence in a single product and limited geographic presence are getting acquired by larger players giving access to a broader market and stronger distribution capabilities. Considering the overlap between the F&F and nutraceutical ingredients value chain, some of these acquisitions have allowed companies to gain access to specific customers and complementary products.

F.2.1 Enhance Product and Distribution Capabilities

Major global F&F guys have forayed to the nutraceutical segment inorganically. As discussed earlier in the report, there is significant overlap in the supply chains of F&F and nutraceutical players. They use the same raw materials – base ingredients. The acquisitions to move into the nutraceutical segment help the F&F players to gain customers. It has also helped companies build and diversify their product portfolios with multiple ingredients. Several companies have expanded into new geographies and enhanced distribution capabilities.





Figure 25: Frutarom Moving to Nutraceutical Ingredients through M&A

F.2.2 Consolidation in the Indian landscape

The bigger Indian companies are resorting to M&A led growth to quickly ramp up scale and gain access to new products and new customers. For example, S H Kelkar was traditionally weaker in the flavours segment. It has made 2 acquisitions recently which has helped to nearly double its market share.

Date	Target	Sector	Acquirer	Deal Value (USD mn)
Jan '17	Indfrag	Nutraceutical Ingredients	Omniaactive	45
Nov '16	Gujarat Flavours	F&F	S H Kelkar	2
Apr '16	High-Tech Technologies	F&F	S H Kelkar	4
Feb '13	Saiba Industries	Plant extracts	S H Kelkar	2

Figure 26: Recent Domestic Transactions in India

F.2.3 Inbound Interest

There has been some inbound interest for transactions in the F&F space in India from major global players. This is attributed to the fact that India ranks high on most of the parameters that are considered by a global company before making an acquisition in a particular geography.



Figure 27: India's Rating on Key Criteria of Consideration

Date	Target	Sector	Acquirer	Deal Value (USD mn)
Aug '16	Privi Organics (51%)	Aroma Chemicals	Fairfax India	55
May '15	Sonarome (60%)	Flavours	Frutarom	17
Nov '14	Kancor Ingredients	Natural Extracts	V. Mane Fils	21
Mar '12	Valentine	Natural Extracts	Naturex SA	7

Figure 28: Recent Inbound Transactions in India

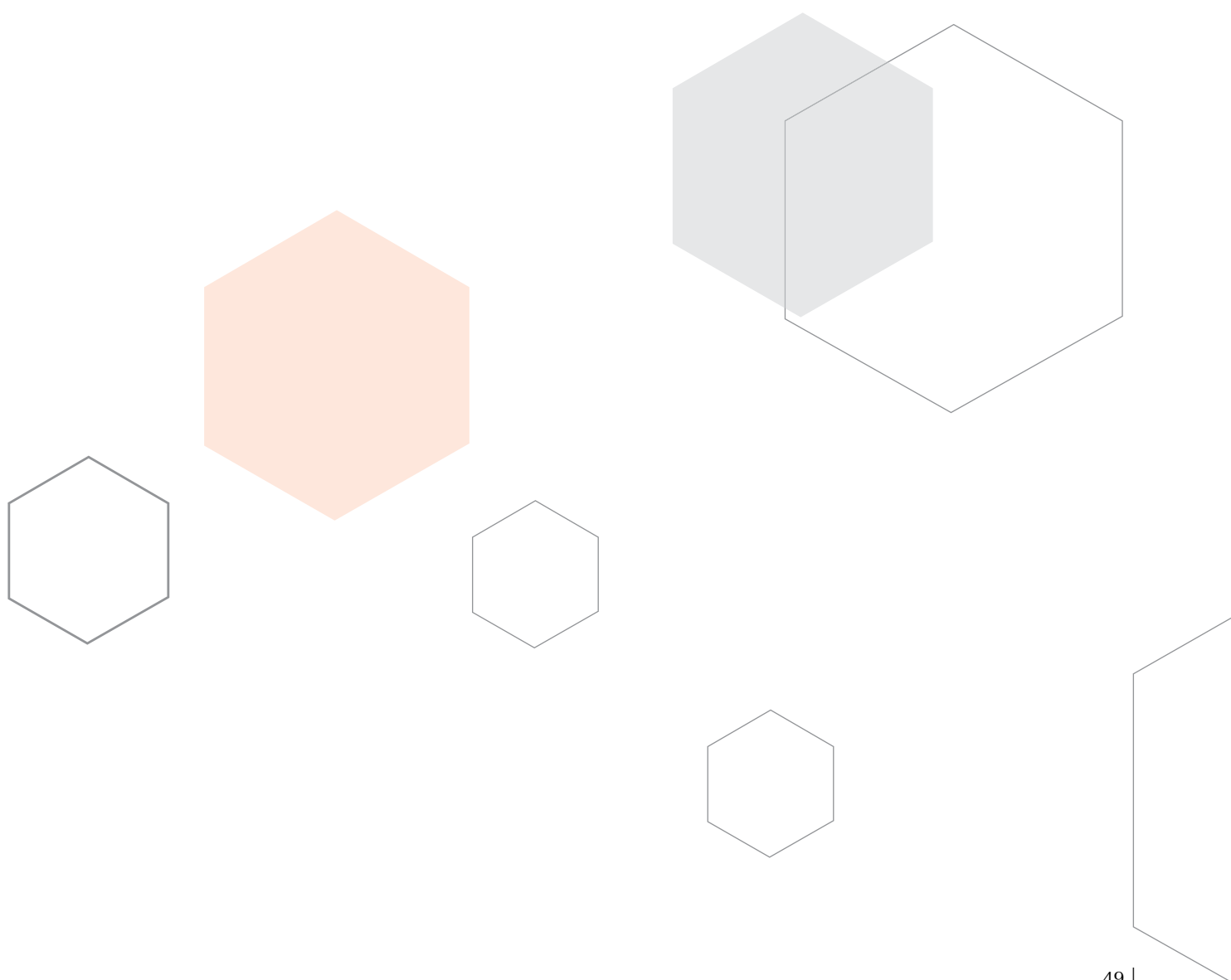
As Indian companies become bigger in size through inorganic growth, they are expected to attract strategic interest from global players to strengthen presence in the low cost manufacturing Indian landscape.



Figure 29: DSM - A Case Study in Inorganic Growth

G. CONCLUSION

The F&F and nutraceutical ingredients segment is a large constituent of the Indian specialty chemicals industry. Different components of this segment vary significantly in the industry structure, growth drivers and key success factors. Our endeavour has been to dissect each of these areas to identify the trends and the outperforming players. We feel that the select players in base ingredients, who are building up capabilities around natural extracts or specific chemistries/molecules will outgrow the market. The F&F industry will pose scale-up challenges to the Indian players, given the entry barriers, and dominance of the MNCs. Already scaled up players in this space will reap the benefits of end-user growth and can garner market share based on cost advantages. Nutraceutical ingredients present an extremely promising opportunity. It is a large global market, and Indian players have made strong inroads in this space. The domestic market, which is at a nascent stage currently, is also expected to witness explosive growth, in the wake of growing urbanization and rising awareness about nutraceutical supplementation. This will further add an impetus to the growth of this segment. We expect the nutraceutical industry to grow at the fastest rate, with high-quality Indian companies combining their process efficiencies with an increasing level of R&D, to create globally accepted products and scale up rapidly.



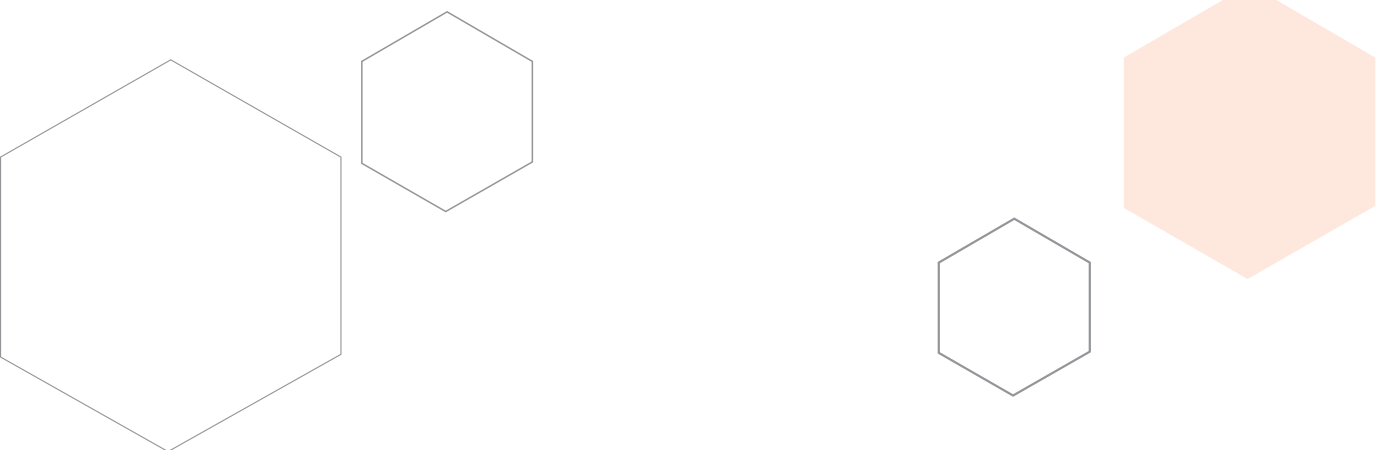
ABOUT AVENDUS

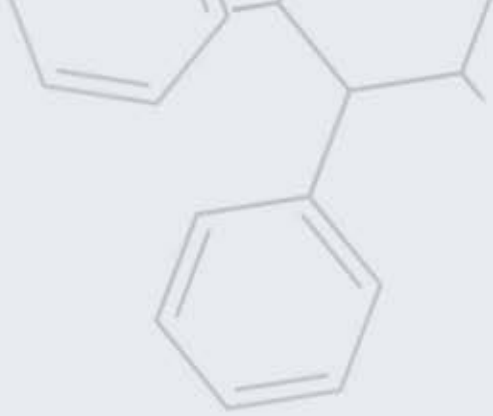
The Avendus Group (Avendus) is a leading provider of financial services with an emphasis on customized solutions in the areas of Financial Advisory, Wealth Management, Structured Credit Solutions and Alternative Assets Management. Avendus relies on its extensive experience, in-depth domain understanding and knowledge of the regulatory environment, to offer customized solutions that enable clients to meet their strategic aspirations. Avendus Capital has consistently been ranked among the leading financial advisors in terms of overall number of deals. It has a strong track record in cross-border transactions and has helped multiple clients benefit from opportunities across geographies. Avendus' wide range of clients is testimony to its ability to serve its corporate clients throughout their life cycle – from growth stage funding to complex, large sized transactions later in the cycle.

Avendus Wealth Management Pvt. Ltd. caters to investment advisory and portfolio management needs of family offices, large corporates and Ultra High Net Worth Individuals spanning all asset classes.

Avendus Finance Pvt. Ltd. provides customized financing solutions to its corporate clients through Structured Debt, Mezzanine, High Yield products and assists in capital structuring as well as arranging optimal financing solutions.

Avendus Capital Inc. and Avendus Capital (UK) Pvt. Ltd. located in New York and London respectively are wholly owned subsidiaries offering M&A and Private Equity syndication services to clients in the respective regions. For more information, please visit www.avendus.com





Avendus[^]

Mumbai | Delhi | Bengaluru | Kolkata | Hyderabad | London | New York

www.avendus.com

