



SUBLIME FINANCIAL ADVISORY
NO COMPROMISE IN EXCELLENCE

Gujarat Alkalies & Chemicals Ltd (GACL)

Capacity expansion & product mix to drive growth

Multibagger Report

Recommendation	:	Buy
CMP	:	Rs 388
Target	:	NA
% Allocation	:	5%

Sector	:	Chemicals
Sensex	:	30922
Bloomberg code	:	GALK.IN
Reuters Code	:	GALK.BO

AT A GLANCE

52 Week High Low	:	:484.05/219.75
Mkt. Cap (Rs. in Crs)	:	:2868
Major Shareholders	:	
Promoters (%)	:	:46.28%
Free Float (%)	:	:53.72%

Background: Gujarat Alkalies and Chemicals Limited (GACL) was incorporated in 1973 by Gujarat Industrial Investment Corporation Ltd (GIC), a wholly owned company of Government of Gujarat. GACL is engaged in manufacturing Caustic Soda and various value added allied products. Company has emerged as one of the largest producers of Caustic Soda in India with present installed production capacity of 4,29,050 MT of Caustic Soda as on 31st March, 2016 and capacities for various other allied / downstream products. It has about 14% share in the domestic Chlor-Alkali market.

Capacity Closure

The caustic soda market is expected to remain tight for the coming two years, as significant capacity changes are expected by the end of 2017 as per media reports with several large Chlor alkali plants likely to be closed. On the back of closure of capacities, caustic soda prices rose sharply from US\$ 321/tonne to US\$429/tonne by the end of March 2017. We expect the prices to remain firm due to local tightness in central European and Spanish market.

Strong Volume growth

There are 34 active Chlor-Alkali Units in India. The production of Caustic Soda during the Financial Year 2015-16 has been 2.87 MT as against total capacity of 3.45 MT, implying capacity utilization of over 83%. Domestic industry in the last 5 years, operated at 79-85% capacity utilisation, while at the same time capacity utilization rate for GACL stood in the range of 85-90%. Given the higher capacity utilization and improvement in economies of scale, the company is currently having a market share of 14% in India.

Outlook & Valuation

We Initiate coverage of GACL with a **BUY** rating. Given the Increasing Capacity, Increasing Capacity Utilization, Improving product mix, and volume growth are key positives for the stock. At the CMP of INR 764, the stock trades at 31.86x EPS of FY16. **Key Risks** to our recommendation include any steep increase in competition from peer companies and increase in imports are key risks which might adversely impact the company.

Investment Arguments

Company Profile: Gujarat Alkalies and Chemicals Limited (GACL) was incorporated in 1973 by Gujarat Industrial Investment Corporation Ltd (GIC), a wholly owned company of Government of Gujarat. GACL is engaged in manufacturing Caustic Soda and various value added allied products. Company has emerged as one of the largest producers of Caustic Soda in India with present installed production capacity of 4,29,050 MT of Caustic Soda as on 31st March, 2016 and capacities for various other allied / downstream products. It has about 14% share in the domestic Chlor-Alkali market.

GACL has two units located at Vadodara and Dahej, both in the State of Gujarat. It has integrated manufacturing facilities for Caustic Soda, Chlorine, Hydrogen Gas, Hydrochloric Acid, Chloromethanes, Hydrogen Peroxide, Phosphoric Acid, Potassium Hydroxide, Potassium Carbonate, Sodium Cyanide, Sodium Ferrocyanide. The Dahej unit also has 90 MW Captive Power Plant (CPP) for regular and economical power supply.

It has marked its presence across the globe even against stiff international competition by exporting its World class products viz. Caustic Soda Flakes, Caustic Soda Prills, Potassium Hydroxide Flakes, Hydrogen Peroxide, Liquid Chlorine, Aluminum Chloride, PAC, Hydrochloric Acid and CPW to Europe, West Asia, South East Asia, Africa, Middle East/Far East, SAARC countries, etc.

Installed Capacity (Tonnes)			
Products	Vadodra	Dahej	Total Capacity
Caustic Soda Lye	1,69,950	2,59,050	4,29,000
Caustic Soda Flakes/Prills	53,000	1,65,000	2,18,000
Chloromethanes	37,950	-	37,950
Caustic Potash Lye	18,810	-	18,810
Potassium Carbonate	13,200	-	13,200
Hydrogen Peroxide – 100%	12,540	26,540	39,080
Phosphoric Acid – 85%	-	26,400	26,400
Aluminium Chloride (Jobwork/O&M)	10,800	26,300	37,100
Poly Aluminium Chloride	-	41,250	41,250
Chlorinated Paraffin (CPW) – (Jobwork)	12,000	-	12,000
Stable Bleaching Powder	-	15,000	15,000
Sodium Chlorate	-	20,000	20,000
Caustic Soda Lye	1,69,950	2,59,050	4,29,000

Capacity closure - Growth Driver

The caustic soda market is expected to remain tight for the coming two years, as significant capacity changes are expected by the end of 2017 as per media reports, with several large Chlor alkali plants likely to be closed as a result of phasing out of mercury cell technology in December 2017 in Europe. Net caustic soda capacity closures between 863,000 tonnes/year and 1.1m tonnes/year is expected in Europe during 2017. Few of the capacities would be coming back on stream in 2017, as they were closed either due to conversion work (Changing Mercury Cell Technology), which can impact the prices in the near term.

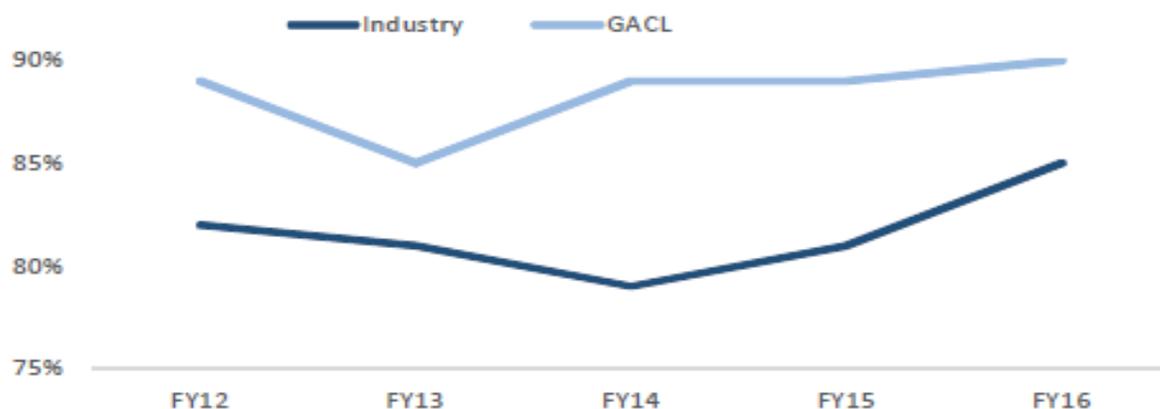
On the back of closure of capacities, caustic soda prices rose sharply from US\$ 321/tonne to US\$429/tonne by the end of March 2017. We expect the prices to remain firm due to local tightness in central European and Spanish market. Other major plants scheduled to close in 2017 are Spolana, Czech Republic site owned by Unipetrol, (which will switch to imported feed stocks to produce polyvinyl chloride (PVC) in June) and Ercros (also closing capacity at two of its sites in Spain towards the end of 2017).

Strong Volume Growth

There are 34 active Chlor-Alkali Units in India. The production of Caustic Soda during the Financial Year 2015-16 has been 2.87 MT as against total capacity of 3.45 MT, implying capacity utilization of over 83%. Domestic industry in the last 5 years, operated at 79-85% capacity utilisation, while at the same time capacity utilization rate for GACL stood in the range of 85-90%. Given the higher capacity utilization and improvement in economies of scale, the company is currently having a market share of 14% in India.

As the company is already operating at over 90% capacity utilization, volume growth is likely to remain in the range of 3-4% for FY18E & FY19E. Post this, the benefit of expansion plan would flow in. The company management expects net sales to grow at a CAGR of 10% during FY16-FY19E, supported by higher realisation. EBITDA margins is also expected to remain strong at 27.5% for the next two years.

GACL utilisation rate higher than industry (%)



Higher Prices to sustain margins

The key thing to watch out while setting up caustic soda facility, is effective use or disposal of chlorine, as 0.89 tonnes of chlorine is produced for every 1 tonne of caustic soda production. Effective use of chlorine for value added products or disposal of the same in the best cost effective manner would help caustic soda producer to earn better margin.

Economics of Plant

Details	Rs/t
Caustic Soda Realisation	27,000
Raw Materials	
Salt (1.6 tonnes = 1 tonne of Caustic Soda)	1,000
Power (2,000 - 2,250 units)	12,000 - 13,500
Other Costs	1,500
Total Variable Costs = 60%	16,000
Fixed Cost	5,000 - 6,000
EBITDA	5,000 - 6,000

At times, the company needs to dispose off the chlorine liquid by paying the end users in the range of Rs2,000-3,000/tonne. GACL, has effectively managed to either use or dispose off the chlorine produced. Out of the total chlorine production, the company sells 60% directly in the market to the end users and of the remaining is partly consumed captive for manufacturing higher value added products and partly is given outside for Job Work. The company manufactures total 18 products of them 3 are outsourced (Aluminium Chloride, Chlorinated Paraffin Wax and Chloro Toluene Products). Post the completion of its expansion plan, the company believes the direct sell proportion of Chlorine should come down below 25% from 60% currently.

The diversified product basket helps the company to insulate itself from high volatility in the raw material prices and make effective use of chlorine. Diversified product basket and effective use of chlorine, has helped the company enjoy an average EBITDA margin of ~20% in the last 5 years. Besides diversified product mix, GACL's installed capacity is based on Membrane Cell Technology, which is power efficient (as power requirement for a tonne of production is 2,300-2,450 units as compared to 3,150-3,300 units required in Mercury Cell Technology). Energy efficient process also helps the company to report strong margin as compared to its peers.

Capex to improve product mix

GACL has undertaken an aggressive capex plan to further strengthen its product mix and increase the capacity of value added products to consume chlorine captively. Strengthening the product basket, with higher consumption of chlorine in-house would help the company to garner better margins. Currently, the company is highly dependent on a single product i.e Caustic Soda, which accounts for 60% of the company revenue.

The company has undertaken an aggressive capex plan of Rs30 bn, spread over the next 3 years to increase the capacity of Phosphoric acid, Caustic Potash and few other products. The capex also includes setting up the new Chloromethane plant with a capacity of 300 tonnes per day.

The capex also includes Rs20 bn towards setting up a new unit of Caustic Soda at Dahej with a capacity of 800 tonnes per day along with 130 MW captive power plant, in 60:40 joint venture with NALCO. The said capex would be funded in the Debt: Equity ratio of 70:30. The management expects the plant to come on stream in 2HFY19. Of the total production, 50,000 tonnes of caustic soda would be sold to NALCO on an arm's length basis and the remaining would be merchant sale.

Capex break-up

Details	Capacity (TPD)	Cost (Rsbn)
JV with NALCO		
Caustic Soda	800	20.00
Coal based power plant	130 MW	
CLM (New)	300	6.83
CLM Expansion	60	1.20
Phosphoric Acid (New)	100	3.00
New Hydrogen Peroxide Plant	42	1.43
Hydrazine Hydrate	30	1.63
Caustic Potash Expansion	60	0.40
New Wind Farm	14.7 MW	1.00
Solar Power Plant	15.0 MW	1.00

Indian Chemical Industry

Chemicals industry is a diversified industry and covers more than 80,000 commercial products. It provides key building blocks to a host of downstream industries such as automobiles, textiles, papers, paints, soaps, detergents, pharmaceuticals among many others.

Indian chemical industry is estimated to be valued at \$147 Bn in 2015 and contributes 3% to the global chemical industry. It ranks 14th in exports and 8th in imports of chemicals (excluding pharmaceutical products) globally. India's chemical's trade balance is negative with imports being significantly higher than the exports. Net imports have grown at 17% per annum during the 2011-15 period. Western India has been the dominant region contributing approx. 50% to the Gross Value Added (GVA) for the chemical sector.

Government of India has taken several initiatives which will support the growth of chemical industry in India. 'Make in India' is one of such initiative. The initiative is expected to foster growth in Indian chemical industry by enabling duty rationalization for feedstock, improving infrastructure and R&D & skill development along with ease of regulation for setting up "Reverse SEZs" and tax incentives for R&D investments. The other key reform is approval of the GST bill which is expected to be operational from April 1, 2017. This key tax reform is expected to lower logistics cost by 10-15% and create a unified market across the country.

Despite the government initiatives and continuous improvement efforts by industry participants, the chemical industry continues to face several challenges. Availability of feedstock at competitive cost remains a key concern. Lack of domestic manufacturing of several intermediates increases lead times and lowers competitiveness of downstream producers. Lack of adequate physical infrastructure and sub-par chemical logistics infrastructure makes material production and movement cost intensive. Uninterrupted power supply remains a challenge for the energy intensive chemical industry. To add to above, significant glut in global chemical capacities has led to growth of imports in India.

Large capacity additions in Middle East and USA are another cause of concern for the domestic players. The duty structure needs rationalization for several products value chain in order to boost domestic value addition. PCPIRs implementation is yet to take off as expected. Only four states, Gujarat, Andhra Pradesh, Orissa and Tamil Nadu have so far shown interest in developing PCPIR regions.

Chemical industry can be classified into 9 key segments including process, plant and machinery. The key segments are

Bulk Chemicals: Bulk chemical include basic organic chemicals (methanol, acetic acid, formaldehyde, Phenol etc.) and basic inorganic chemicals (caustic soda, Chlorine, Soda Ash etc.). Bulk chemicals (including intermediates) market is estimated at \$39 Bn in FY15 and has seen subdued growth despite the growth in consumption, due to falling commodity prices. It is expected to grow at 5% per annum during the next 5 years. Feedstock availability is a major concern area. Improving feedstock supply and exploring Coal and other alternate feedstock are the key opportunity areas.

Petrochemicals: Major segments for petrochemicals are basic petrochemicals and end product petrochemicals. The total petrochemical market is valued at \$28 Bn in FY15 and had registered a growth of 11% per annum during the FY11-FY15 period. It is expected to grow at rate of 9% to reach \$44 Bn by FY20 driven by current low per capita consumption and rise in polymer demand. Volatility in raw material prices, increase in competition from middle-east & China and high entry barriers remain key challenges for the petrochemical industry.

Intermediates: It includes derivatives of ethylene, propylene, toluene, xylene and benzene. High import dependency, focus on bulk end products, lack of specialized infrastructure and technology changes are critical challenges. It is critical for companies in India to create an integrated petrochemical intermediates plan which would match feedstock availability with downstream and end-use demand. This segment is expected to provide significant growth opportunities for Indian players.

Fertilizers: It includes all types of N, P & K based fertilizers like Urea, DAP, Complex fertilizers etc. It plays a critical role in Agriculture sector which is critical for social and economic development of India. Market is estimated at \$16 Bn in FY15 and has been stagnant in last 5 years due to decline in DAP and NPK consumption, increase in retail prices of DAP and reduction in government subsidy. It is expected to grow moderately at 2.5% in the next 5 years driven by low International prices for Urea, DAP & MOP and continued government support.

Pharmaceuticals: It includes formulations and APIs. Market in India is estimated at \$17 Bn in FY16, having grown at 7.2% per annum from \$10 Bn in FY11. India is a world leader in production of generic drugs and is an exporter of pharmaceuticals to more than 200 countries. Compliance with global cGMP standards, high level of fragmentation, government control on prices, lower spend on R&D, lack of skilled manpower are key challenges for pharmaceuticals. Despite the same, pharma sector is

expected to grow at 12% over the next 5 years driven majorly by demographics, better diagnostic facilities, increased government spending and increased penetration of health insurance.

Agrochemicals: It includes insecticides, fungicides, and herbicides. Market in India is estimated at \$4.4 Bn in FY15. Prevalence of spurious products, stringent regulations, low focus on R&D, inefficient distribution system and lack of awareness among farmers remain key challenges. Market is expected to grow at 7.5% in next 5 years. This growth is primarily driven by increased planned expenditure, formation of Farmer Producer Organizations and increase in exports.

Specialty Chemicals: Specialty Chemicals are targeted towards specific end-use application and includes Polymer additives, Personal care ingredients, Water treatment chemicals, Construction chemicals, Paints and coatings and Colorants. These chemicals are R&D intensive, high value and low volume chemicals. Market estimated at \$28 Bn as of FY15. Market is expected to continue to grow at 13% p.a. to reach \$52 Bn by 2020 driven by growth in end use industry (textiles, automotive, glass, construction, paints etc).

Biotechnology: Biotechnology uses biological processes, organisms or systems to develop products for improvement of human life. It includes segments like Biopharma, Bio-services, Bio-Agri, Bio-Industrial and Bio-informatics. India is one of the top 12 Biotech destinations in the world and accounts for about 3% of the global market. It has grown from \$ 4.4 Bn in FY11 to \$ 11 Bn in FY16 growing at a rate of 20%. This segment is expected to grow rapidly at 23% in the next 5 years primarily driven by Indian demographic factor, higher healthcare expenditure, increasing acceptance of bio products and strong growth in exports demand.

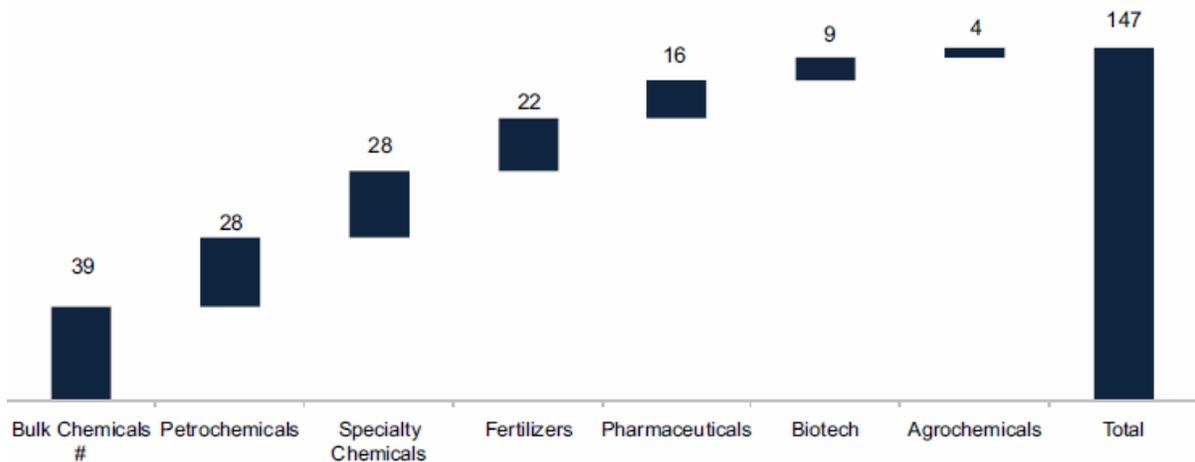
Process, plant and machinery: The process plant machinery sector in India caters to a wide range of process industries like oil and gas, petroleum refining, fertilizers, chemicals, petrochemicals, oleochemicals, pharmaceuticals, metal processing, cement, paper, sugar, food processing and water treatment. The demand for Process machinery was \$3.6 Bn in FY15. Industry has remained flat for the last 3 years due to slow growth in world economy leading to slowdown in investment cycle and delays in government clearances for major project. It is expected to register a modest growth of 5% in the next 5 years driven by growth in Indian economy and possible uptrend in the capital expenditure cycle.

Indian Chemical Industry at a Glance



Of the five segments, a Bulk chemical (27% share) is the largest followed by petrochemicals (19%) and then specialty chemicals (19%). In terms of potential growth, a specialty chemical is the fastest growing segment followed by bulk chemicals.

Sector-wise Breakdown of Indian Chemical Sales in FY15 (In \$ Bn)



Note: # Bulk Chemicals includes Intermediates

Continuous availability of feedstock at a competitive cost is a key concern for the companies operating in this sector. Feedstock (naphtha and natural gas) are critical inputs for both organic and inorganic chemicals industry. Costs of these raw materials are high as compared to countries like China, Middle East and other South East Asian countries such as Thailand and Malaysia, which makes the products uncompetitive in the International markets.

More than 50% of global petrochemical capacities are based on naphtha, a crude oil derivative product, thereby making petrochemical prices highly volatile.

The chemical industry faces a major challenge in the availability of cheaper imported chemicals from low cost manufacturing hubs like China. Under various multilateral and bilateral agreements (FTAs), India has committed to gradually eliminate the tariffs on various chemical products in addition to non-tariff import barriers such as quotas based on amount and source. Also, many of the chemicals are placed in Open General Licence (OGL) of imports. This has increased the import of various chemicals, intermediates and end products. If the government decides to reduce the import tariffs further to meet the increasing demand of the country, then the level of competition in the Indian chemical industry will further intensify.

Large capacity additions in countries such as ethane rich Middle East and shale gas rich USA is another cause of concern for the domestic players as it may affect their market. It is estimated, that out of the 30 Mn Tonnes of ethylene capacity additions expected during period FY15-FY19, 12 Mn Tonnes is expected to be in US alone. Since, ethane and petrochemical products are cheaper than petrochemical products in India, it will affect the margins of domestic players due to underutilization of their capacities.

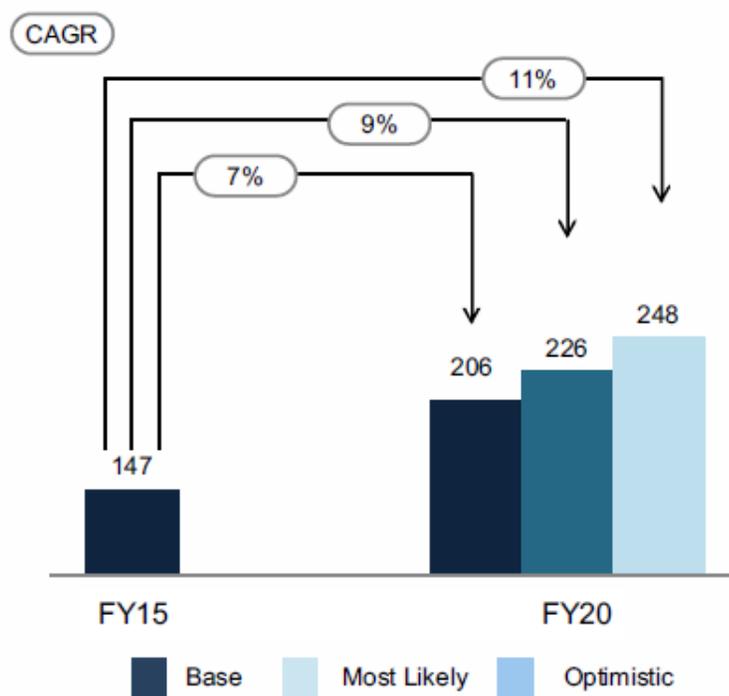
Commodity chemicals can enhance their product portfolio by adding specialty chemicals such as polymer additives, water treatment chemicals, lubricating additives etc. For example, the demand for performance plastics such as biodegradable polymers is expected to be on rise across the world including India.

Given the environmental concerns with traditional plastics, companies should look at expanding their portfolio and include more value add products.

The domestic organic chemical players lack pricing power on account of lack of opportunities for backward integration. However, with new finds of natural gas reserves in the country, the manufacturers should be able to leverage stable pricing going forward. Similarly, petrochemical companies producing benzene and propylene can look for forward integration opportunity given the demand supply deficit in the phenol market. An opportunity exists for companies with better access to natural gas supply to venture into the methanol market facing continuous supply deficit. For example, RIL successfully backward integrated from refining and petrochemical company to gas oil and gas exploration.

In the base case, the market size is estimated at \$206 Bn by FY20. The most likely case growth rate is pegged at 9% with a market size of \$226 bn. And the optimistic case is likely to achieve a growth of 11% p.a. over the next five years resulting in an industry size of \$248 bn.

Growth projections of Indian chemical industry market size (In \$ Bn)



Indian Chemical Industry: Segment Analysis

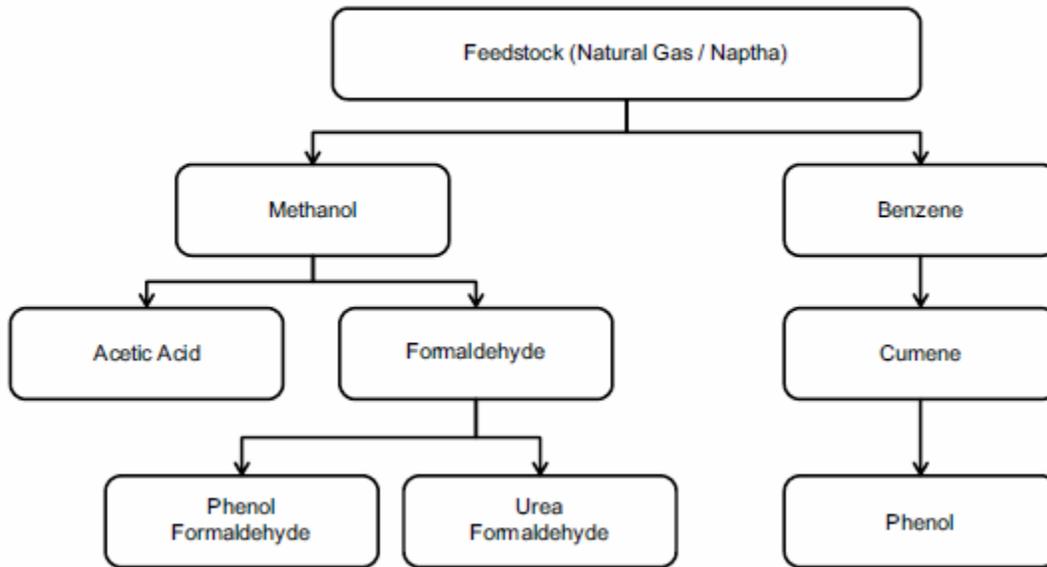
Bulk Chemicals

Bulk chemicals are a group of chemicals that are made on a large scale and act as inputs to downstream industries. These chemical compounds are often classified into two classes, organic and inorganic. Both are produced on a large scale. Basic organic chemicals primarily include chemicals such as methanol, acetic acid, formaldehyde, acetic acid among many others. Basic inorganic chemicals primarily include chlor-alkali (Soda ash, Chlorine and caustic soda) and other inorganic chemicals such as carbon black, calcium carbonate among many others. Indian bulk chemical market (including intermediates) is estimated at \$39 Bn. It has grown strongly in volume terms (8-10%) in the last 5 years but the value-wise growth was subdued because of low commodity prices.

Basic organic chemicals

Organic chemicals are a significant part of the Indian chemical industry. Availability of natural gas for use as a feedstock is a critical part of the entire production process. Formaldehyde and acetic acid are important methanol derivatives and are used in numerous industrial applications. Phenol is an aromatic compound and derived from Cumene, benzene and propylene derivatives. The chart below shows select major organic chemicals.

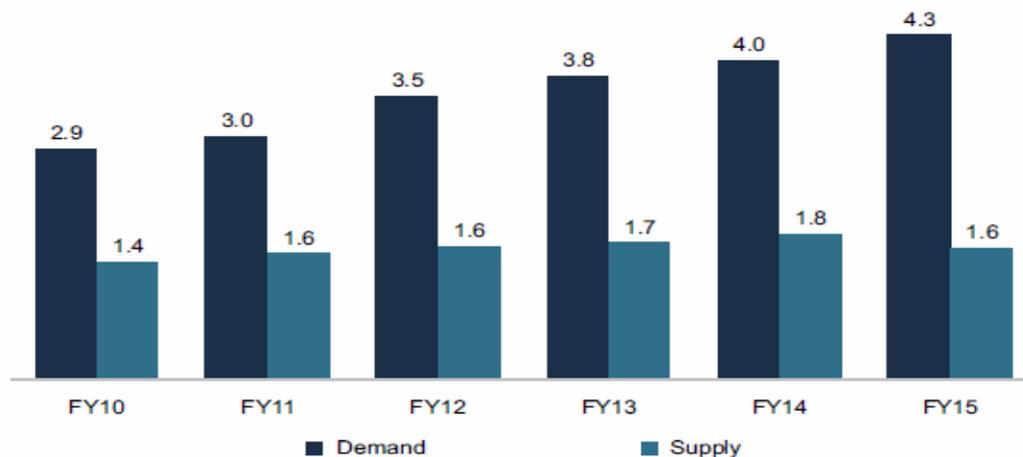
Major Bulk Organic Chemicals



Indian Organic Chemical Industry

The consumption of organic chemicals in India has increased at a CAGR of 8.4% from 2.9 Mn metric tons per annum (mmtpa) in FY10 to 4.3 mmtpa in FY15. The domestic supply however, has grown at a CAGR of 2.3% from 1.4 mmtpa in FY10 to 1.6 mmtpa in FY15. The deficit has been met by a large increase in imports over the years. The net imports have grown at a CAGR of more than 13% from 1.5 mmtpa in FY10 to 2.9 mmtpa in FY15. The major reason of lower domestic production of organic chemicals has been oversupply in global markets leading to cheaper imports of organic chemicals into India. As a result, the capacity utilization levels of domestic producers have been in range of 55% to 65% during the FY10- FY15 period.

India bulk organic chemicals- Demand and Supply (in MMTPA)



The major organic chemicals are methanol, acetic acid, formaldehyde and phenol. The four chemicals contribute 75% of total organic chemicals produced in India in FY15.

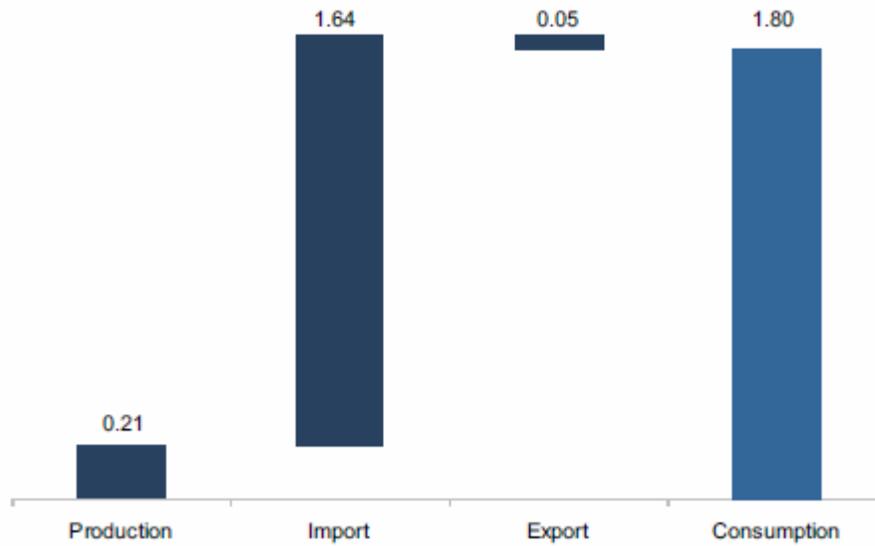
Consumption details of major organic chemicals in India (in 000's MT)

Sr. No	Organic Chemical	Consumption (TMT)			Share in FY15, %
		FY13	FY14	FY15	
1	Methanol	1,469	1,536	1,802	42%
2	Formaldehyde	271	262	249	6%
3	Acetic Acid	801	815	868	20%
4	Phenol	234	258	240	6%
5	Others	991	1,082	1,105	26%
Total		2,775	2,871	3,159	

A. Methanol

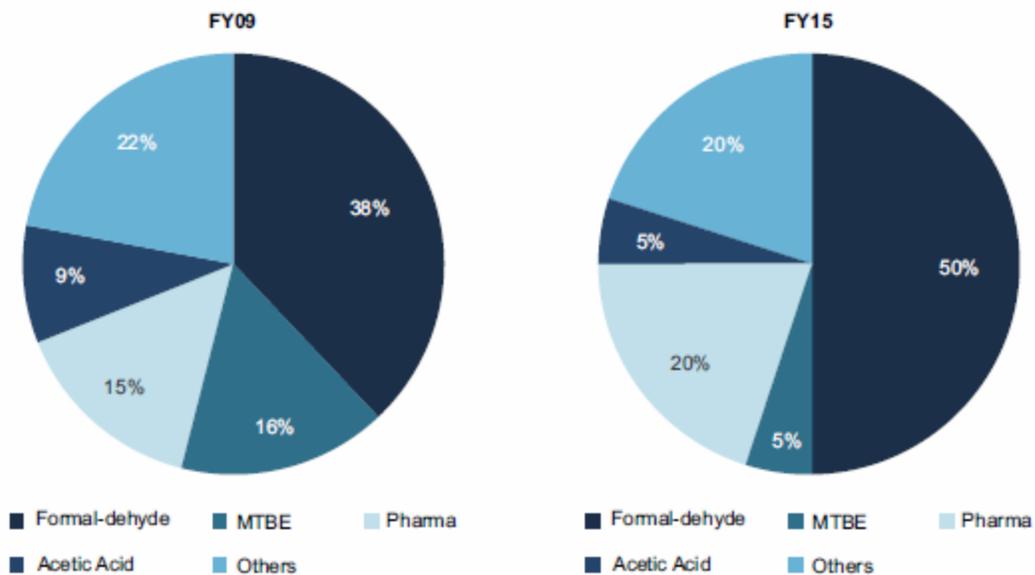
Methanol, a very versatile chemical is primarily produced from natural gas or naphtha. Demand for methanol has increased at a CAGR of 10% from 1.1 mmtpa in FY10 to 1.8 mmtpa in FY15. The domestic production of methanol is not sufficient to meet the demand of methanol in India. As a result, in FY15, net import of methanol was 1.64 mmtpa i.e. more than 7 times the domestic production of 0.21 mmtpa. Import of methanol has increased at a high CAGR of 15% from 0.83 mmtpa in FY10 to 1.64 mmtpa in FY15.

Methanol-Demand and Supply (in MMTPA)



The two main end-user industries of methanol are chemicals and energy. In the chemicals industry, methanol is used mainly to manufacture formaldehyde, acetic acid, di-methyl terephthalate (DMT) and some solvents. In the energy industry, methanol goes into the manufacture of methyl tertiary butyl ether (MTBE), tertiary amyl methyl ether (TAME), dimethyl ether (DME) and bio-diesel among other chemicals. Methanol is also used for blending with petrol.

Sectorial usage of methanol (% share)



Over the years the usage pattern of methanol has changed. The share of formaldehyde in sectoral usage of methanol has improved from 38% in FY09 to 51% in FY15 primarily due to increase in demand of formaldehyde from plastic and paints industries. The demand of methanol for production of MTBE has fallen primarily due to competition from Ethanol.

Indian manufacturers have small capacities compared to global standards. GNFC (Gujarat Narmada Valley Fertilizers Co Ltd), the largest producer of Methanol in India has a capacity of 269 kilo tons per annum (kta) followed by GSFC (Gujarat State Fertilizer & Chemical Co Ltd) with a capacity of 173 kta and Deepak Fertilizers with capacity of 100 kta.

B. Acetic Acid

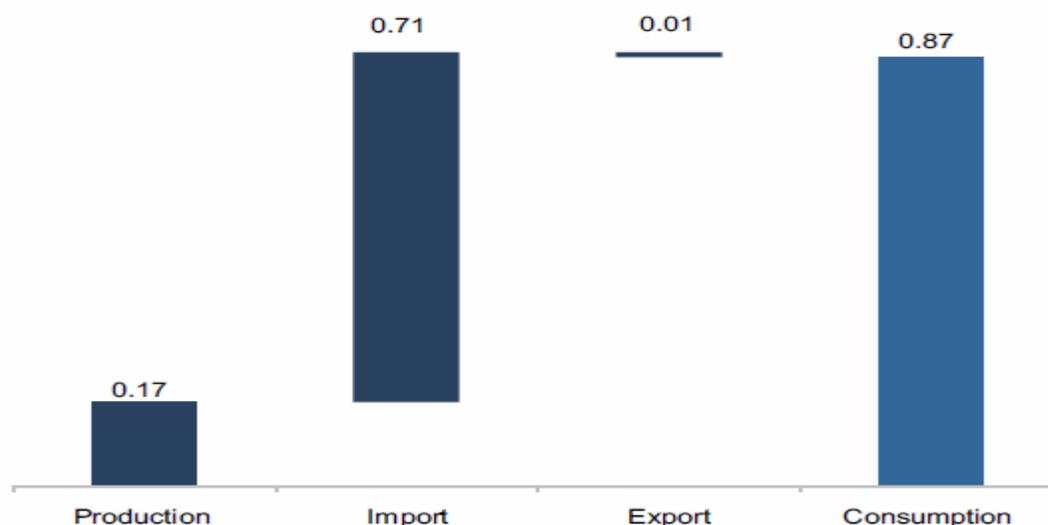
Acetic Acid is an alcohol based chemical and is primarily used in the production of Vinyl Acetate Monomer (VAM), Purified Terephthalic Acid (PTA), Acetic Anhydride and Acetate Esters. The Acetic Acid derivatives are applied in various industries as mentioned in table below

Acetic Acid Applications

SN	Derivatives	Applications
1	Vinyl Acetate Monomer	Adhesives, textiles, paints and paper
2	Purified Terephthalic Acid (PTA)	PET bottle resins, films and polyester fibre
3	Acetic Anhydride	Cellulose Acetate which goes in cigarette filters and textile applications
4	Acetate Esters	Solvents in a wide variety of paints, inks and other coatings

Demand for acetic acid has grown at a CAGR of 11% from 0.52 Mn tons in FY10 to 0.87 Mn tons in FY15. The demand growth has happened mainly due to increase usage by manufacturers of PTA and organic esters such as RIL and Vinyl Chemicals.

Acetic Acid- Demand and Supply (in MMTPA)



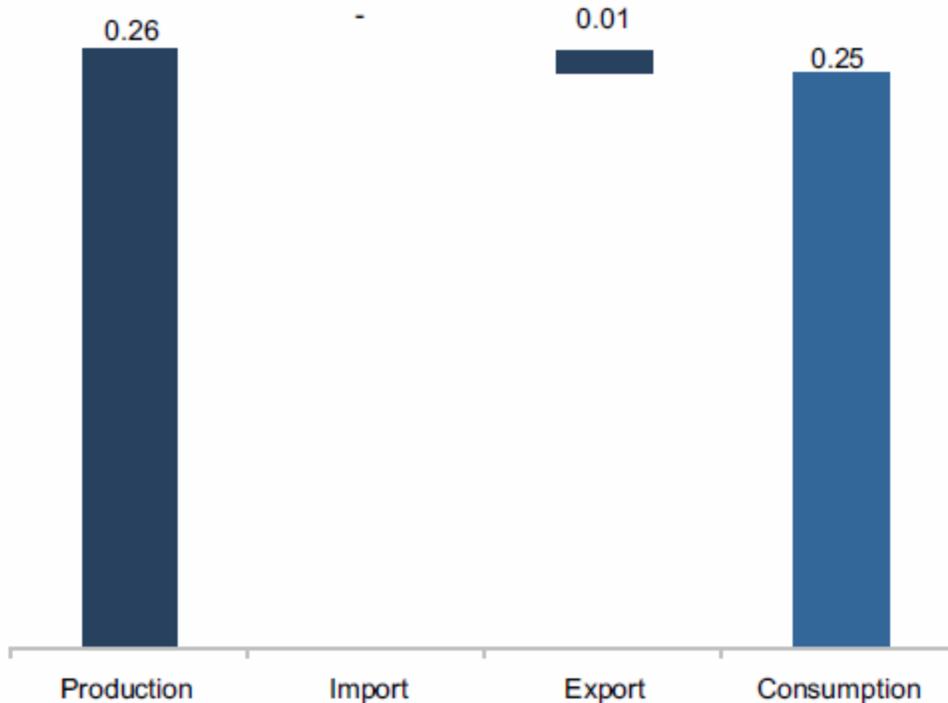
Most of the demand was met through domestic production earlier. However, due to oversupply of acetic acid in global markets and depressed prices, imports of acetic acid have grown from 0.39 mmtpa in FY10 to 0.71 mmtpa in FY15. Cheap imports have led to lower plant capacity utilization for domestic manufacturers. Utilization for domestic manufacturers stood at 44% only in FY15.

Market size of acetic acid is estimated to be around 0.87 mmtpa in India in FY15, of which imports constitute more than 80%. Major acetic acid producing companies in India are GNFC, Jubilant Organosys and IOC. Acetic acid is manufactured in India through two routes: the methanol route and the ethyl alcohol (from molasses) route. Manufacturing acetic acid using methanol is more cost-competitive and, therefore, more profitable. GNFC is the only company in India to manufacture acetic acid through the methanol route. It has a competitive advantage in acetic acid because of the assured supply of the raw material and its lower cost of production.

C. Formaldehyde

Unlike methanol, production of its derivative formaldehyde in India is sufficient to meet the domestic demand. The production of formaldehyde has marginally declined, at a similar pace as has its demand, at a CAGR of negative 0.4% from 0.265 mmtpa in FY10 to 0.26 mmtpa in FY15. Market size of formaldehyde is estimated around 0.25 mmtpa in India. Total production capacity is 0.41 mmtpa in FY15. Major formaldehyde producing companies in India are Kanoria Chemicals (Capacity of 0.18 mmtpa), Hindustan Organic, Rock Hard and Asian Paints. Asian Paints produces formaldehyde for captive consumption.

Formaldehyde-Demand and Supply (in MMTPA)



D. Phenol

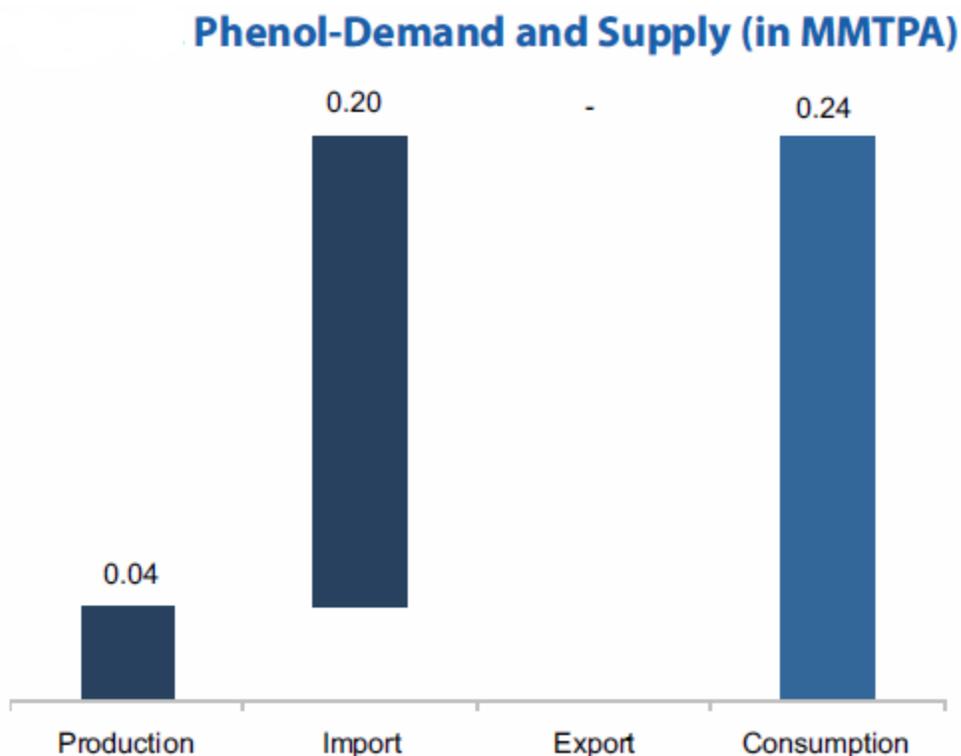
Phenol is a significant organic chemical with numerous applications as mentioned in the table below.

Phenol Applications

SN	Derivatives	Applications
1	Phenolic resins	Plywood adhesives, construction, automobile & appliance industries
2	Caprolactam	Nylon and synthetic fibre
3	Bisphenol-A	Polycarbonates in electronics and housing industries

Its demand is closely linked to end user industries like the construction and automobile industries. More than 83% of demand of phenol is met through imports with no marginal capacity addition in last three years. There are only two suppliers - Hindustan Organics and S I Group with capacity of 40 Kta and 37Kta respectively in FY15. As the consumption has grown from 0.17 mmtpa in FY10 to 0.24 mmtpa in FY15, the imports

has grown at a higher CAGR of 14% to meet the rising demand. The total market size is 0.24 mmtpa approximately in India in FY15.



Basic Inorganic Chemicals

Alkali chemicals are the oldest and the largest segment of the chemical industry. These chemicals serve as key inputs for a number of industries such as aluminium, soap, detergent, glass, tyre, rubber, pulp and paper, pharmaceutical, water treatment, textiles, leather, fibre among many others. The key chemicals in the chlor alkali industry are:

Caustic Soda

Chlorine(Including Liquid Chlorine)

Soda Ash

Indian Inorganic Chemicals Industry (including Chlor Alkali)

Industry Overview

The consumption of inorganic chemicals in India has increased at a CAGR of 5.5% from 7.1 Mn metric tons per annum (mmtpa) in FY10 to 9.3 mmtpa in FY15. The domestic supply however, has grown at a CAGR of 2.5% only from 6.6 mmtpa in FY10 to reach

7.5 mmtpa in FY15. The deficit has been met by an increase in imports over the years. The imports have grown at more than 11% p.a. from 1.2 mmtpa in FY10 to 2.1 mmtpa in FY15. The major inorganic chemicals are chlor-alkali chemicals with more than 82% of the overall Inorganic chemical demand. Chlor Alkali has three key segments, namely, caustic soda, chlorine and soda ash.

A. Caustic Soda

Caustic Soda (chemically known as sodium hydroxide) and chlorine are produced together through the electrolysis of common salt solution (sodium chloride or brine). Caustic soda and Chlorine are generated in the ratio of 1:0.89. Demand for chlorine drives caustic soda production globally, but in India the industry has developed in line with the demand-supply balance of caustic soda.

There are three alternative technologies used to manufacture caustic soda from brine. These are mercury cell, membrane cell and diaphragm technologies.

The membrane cell technology involves lower power costs compared to the other two. It is also the most environmental friendly as it does not use any hazardous materials as compared to mercury cell and diaphragm technologies which use mercury and asbestos respectively.

The diaphragm technology involves higher capital and power costs. The quality of caustic soda is also of inferior quality. However, it is popular as the purity of chlorine from this method is highest and chlorine demand is major driver for caustic soda production globally.

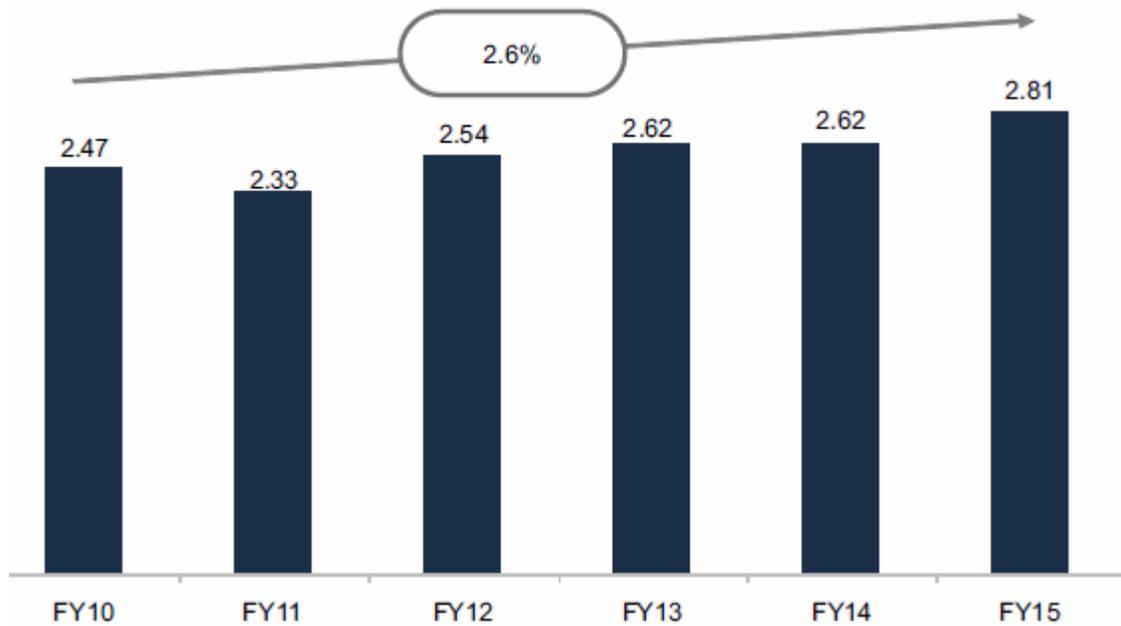
Mercury cell technology involves lower capital costs compared to membrane and diaphragm technologies. However, it is not so popular because of related pollution hazards due to use of asbestos.

Globally the diaphragm and mercury cell technologies are the most widely used while in India the membrane cell technology accounts for more than 95% of the total capacity. Mercury cell is widely used in Europe and diaphragm technology is widely used in US.

Indian Caustic Soda - Market Size

Caustic soda consumption in India increased at 2.6% CAGR from 2.5 mmtpa in FY10 to reach 2.8 mmtpa in FY15.

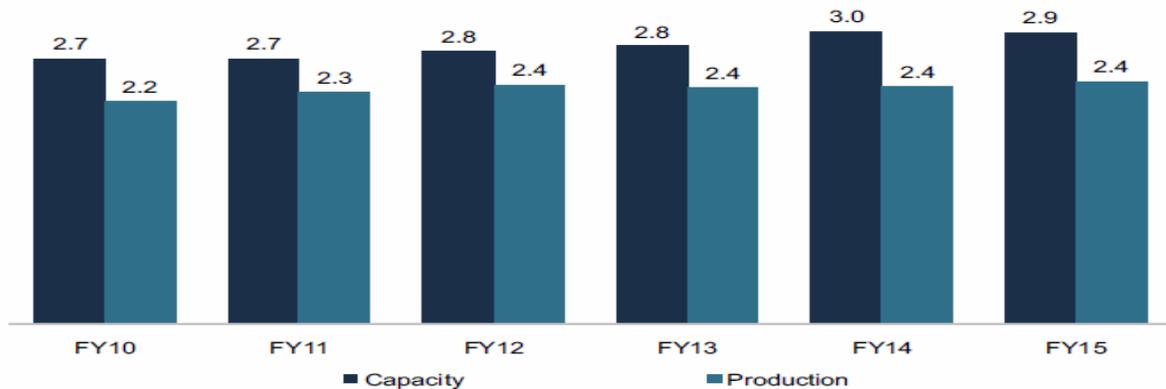
Caustic Soda Demand- (in MMTPA)



Indian Caustic Soda Capacity Additions

Total domestic caustic soda capacity increased from 2.7 Mn tons in FY10 to 2.94 Mn tons in FY15.

Caustic Soda Capacity and Production (in MnTPA)

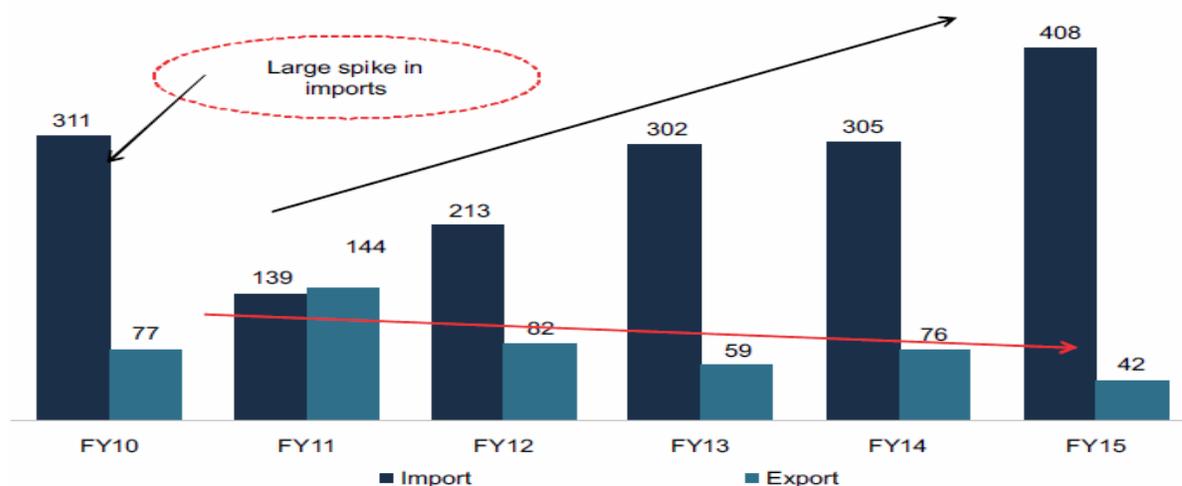


Western region accounted for approximately 57% of the estimated capacity of 2.94 Mn tons in FY15 because of its proximity to salt which is one of the key raw materials. The southern regions accounts for 20% of the total capacity. The northern and eastern regions have a share of 12% and 11% respectively.

Caustic Soda Imports (2011-15)

Imports grew rapidly at CAGR of 31% from 138.5 thousand tons in FY11 to 408.0 thousand tons in FY15, after registering a spike in FY10. Exports decreased at a CAGR of 11% from 77.0 thousand tons in FY10 to 42.2 thousand tons in FY15.

Import - Export Trend of Caustic Soda (in TMT)

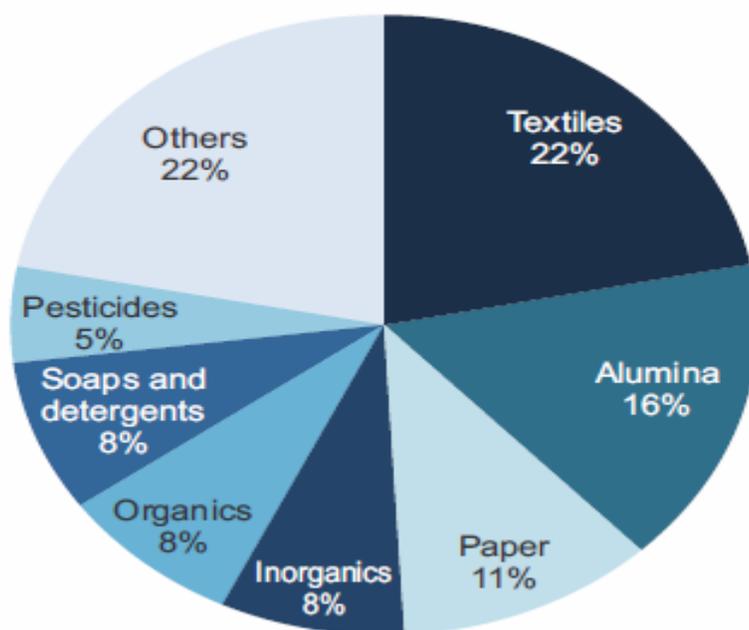


Major Caustic Soda companies in India

Gujarat Alkalies and Chemicals Ltd. (GACL) is the market leader in caustic soda segment in India accounting for 14% of the total domestic sales value in FY15.

The Aditya Birla Group, through its companies such as Aditya Birla Chemicals Ltd (ABCL), Grasim industries Ltd and Aditya Birla Nuvo Ltd (ABNL) are other major players. Other major companies are DCM Sriram, Punjab Alkalies, Sree Rayalaseema Alkalies and Allied Chemicals & Andhra Sugars. The top six companies account for almost 60% of the total domestic sales of caustic soda in India.

Caustic Soda- India Consumption FY15 (2.81 MnTPA)

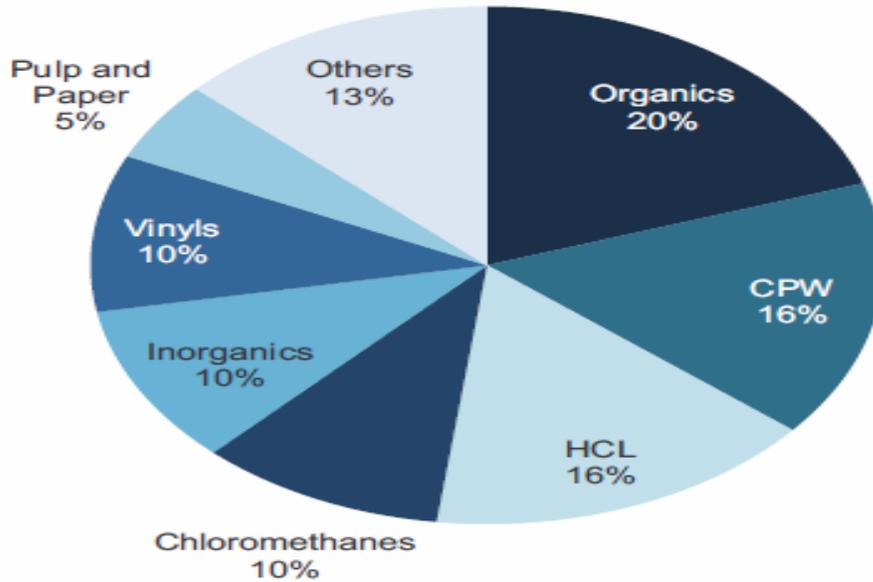


The key end user industries of caustic soda in India are textiles, alumina, paper, inorganics, soaps and detergents and pesticides. Textiles are the largest end-use industry accounting for 22% of the total caustic soda consumption in FY15. In the textile industry, caustic soda is used in processing of cotton fibres and bleaching of fabrics. Alumina is the second largest end-use industry accounting for 16% of the total caustic soda consumption. Caustic soda is used in processing of bauxite ore in the aluminium industry. The processing of bauxite ore gives alumina which is in turn used in the manufacturing of aluminium. Paper and Inorganics accounted for 11% and 8% respectively of total caustic soda consumption in FY15. In the paper industry it is used in water treatment, de-inking of waste paper and as a raw material in pulping and bleaching processes.

a. Chlorine

Consumption of chlorine in India in FY15 is estimated at 1.7 Mn tons. The key end-user industries of chlorine in India are PVC, inorganic and organic chemicals. Vinyl, a key determinant of chlorine demand globally, accounted for 10% of total chlorine demand in India.

: Chlorine: India Consumption FY15 (1.71 MnTPA)



Caustic soda and chlorine capacity are correlated

Since caustic soda and chlorine are co-products capacities, production of caustic soda and chlorine are correlated. Chlorine production has been growing in line with the growth of caustic soda manufacturing and has not been determined by the growth of the chlorine based down stream industries. There is marginally more chlorine produced in India than there is demand.

Demand for caustic soda from end-use industry

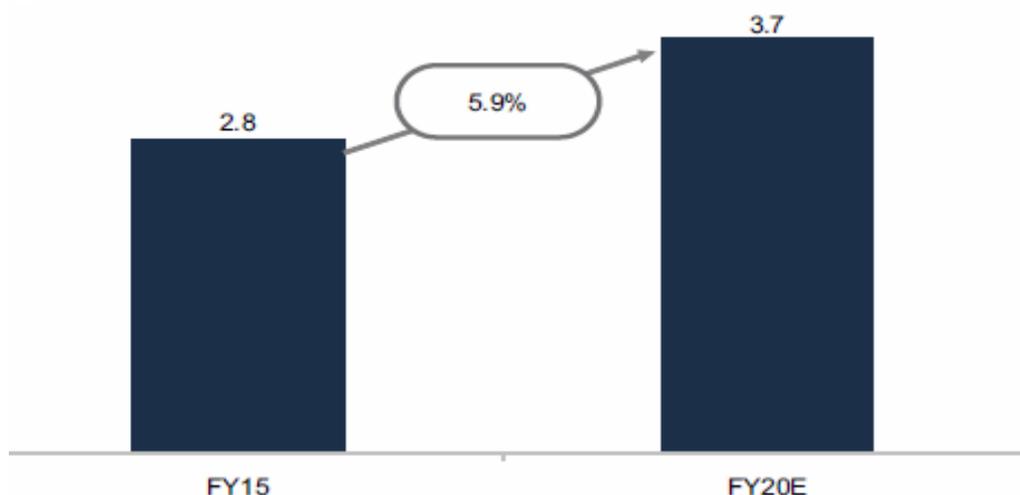
Demand for caustic soda is expected to be driven mainly by growth in the end use industry i.e. alumina, paper, Inorganics and textiles. Aluminium production is expected to increase by 7-8% CAGR over the next five years, following capacity expansions by players, including Vedanta, Hindalco and Balco, and gradual ramp-up of capacities. Demand for caustic soda from both paper and textile industry is expected to grow at 4-5% and 6-7% respectively, whereas demand from inorganic industry is expected to grow at 7-8% in next 5 years driven by demand from end-user industries such as paints and ceramics.

Caustic soda- Demand growth from end-use industry

SN	Industry	CAGR over next 5 years
1	Alumina	7-8
2	Paper	4-5
3	Inorganics	7-8
4	Textiles	6-7

Driven by the end use industry growth, demand for caustic soda is projected to grow at a rate of 5.9% from 2.81 Mn tons in FY15 to 3.74 Mn tons in FY20.

Caustic Soda Demand- Future Forecast (in MnTPA)



c. Soda Ash

Soda ash is chemically known as sodium carbonate. Broadly, there are two ways in which soda ash is produced; it is either manufactured synthetically from salt or is obtained from refining of naturally available mineral, trona, or naturally occurring sodium carbonate bearing brines. Globally, approximately 75% of soda ash is produced from the synthetic process.

Processing costs of soda ash from naturally available sources is less than the manufacturing costs of producing soda ash synthetically, thereby making the naturally available soda ash less expensive.

There are three main processes to manufacture soda ash from salt.

Standard Solvay process: The standard Solvay process is characterised with low salt utilisation and requirement of good quality of limestone and coke. This process, compared to other two processes, generates larger amount of effluents and hence require good disposal facilities.

Modified Solvay process: The modified Solvay process has better salt utilization and requirement of limestone is less. But the process requires very high quality of salt without any impurities and ammonia requirement is also high.

Dry Liming Process: The raw material consumption is low in the dry liming process and it has a perfect steam power balance.

All the three processes are used in India and have their own advantages and disadvantages. In India, dry liming process is used for almost 49 per cent of the total domestic capacity in 2014-15. The standard Solvay process accounted for 48 per cent whereas modified Solvay process accounted for 3% only.

Financials

Profit & Loss

Particulars(Rs.Cr)	FY16	FY17E	FY18E
Net Sales	1966.1	2184.3	2534.4
EBITDA	334.1	536.1	696.3
Depreciation	107.1	117.6	131.1
Interest	8.1	8.9	9.6
PBT	265.1	455.9	601.8
PAT	221.7	360.2	475.4
EPS	30.2	49.0	64.7

Balance Sheet

Particulars(Rs.Cr)	FY16	FY17E	FY18E
Cash & Bank balances	47.4	307.8	300.1
Other Current assets	1185.5	1243.4	1336.4
Investments	202	202	202
Net fixed assets	1896.6	1954.3	2725.9
Total Assets	3331.5	3707.5	4564.4
Current liabilities	359.9	396.4	447.8
Borrowings	295.9	295.9	295.9
Other non-current liab	357.2	375.1	393.8
Total liabilities	1013	1067.4	1137.5
Share capital	73.4	73.4	73.4
Reserves & surplus	2245.1	2566.7	3353.5
Shareholders' funds	2318.5	2640.1	3426.9
Total Liabilities	3331.5	3707.5	4564.4

Disclaimer for Investors

This report is for private circulation and for the personal information of the authorized recipient only, and we are not soliciting any action based upon it. This report is not to be construed as an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not provide individually tailor-made investment advice and has been prepared without regard to any specific investment objectives, financial situation, or any particular needs of any of the persons who receive it. The research analyst who is primarily responsible for this report certifies that: (1) all of the views expressed in this report accurately reflect his or her personal opinions about any and all of the subject securities or issuers; and (2) no part of any of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed in this report. This report has been prepared on the basis of information that is already available in publicly accessible media or developed through analysis of Sublime Financial services pvt Limited makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. The views expressed are those of the analyst and the Company may or may not subscribe to all the views expressed therein. Sublime Financial services pvt Limited reserves the right to make modifications and alterations to this statements as may be required from time to time without any prior approval. Sublime Financial services pvt Limited, its affiliates, directors and employees may from time to time, effect or have effect an own account transaction in or deal as agent in or for the securities mentioned in this report. The recipient should take this into account before interpreting the report. All investors may not find the securities discussed in this report to be suitable. Sublime Financial services pvt Limited recommends that investors independently evaluate particular investments and strategies. Investors should seek the advice of a financial advisor with regard to the appropriateness of investing in any securities / investment strategies recommended in this report. The appropriateness of a particular investment or strategy will depend on an investor's individual preference. Past performance is not necessary a guide to future performance. Estimates of future prospects are based on assumptions that may not be realized. The news items appearing in this are collected from various media sources and we make no representations that it is complete or accurate.

