Navin Fluorine | BUY

Fluorinating across the value chain

JM FINANCIAL

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Globally, fluorination has gained preference to carry active ingredients in pharma and agro-chemicals applications (details inside) and therefore interest in fluorination has seen strong revival. Navin Fluorine (I) Ltd (NFIL) is one of India's largest manufacturers of fluorochemicals with over five decades of experience in fluorination and a portfolio of more than 60 fluorinated products. Further, NFIL is the only Indian fluorochemical company to provide end-to-end services from early stage research to India's first high pressure, cGMP compliant fluorination facility. This places NFIL is in a unique position to partner global companies. NFIL has focused on moving up the value chain thus also expanding margins. We initiate coverage on NFIL with a BUY and a TP of Rs3,500. We estimate FY17-19E earnings CAGR of 20% and value NFIL at 20x (1XPEG and DCF) FY19EPS of Rs175.

- **NFIL is positioned in an industry which is generating renewed interest..:** Globally use of fluorine gas gained a lot of negative perception due to the ban of use of fluorine in refrigeration gas. However, a recent report by Solvay states that c.40%-50% of new molecules being researched for use in agrochemicals / pharma use some form of fluorination. It is also pertinent to note that 3 of 10 largest selling medicines contain fluorine. Clearly, use of fluorine is gaining prominence in pharma / agrichemicals because, amongst others, fluorine is 1) inert and 2) much more lipophilic (fat soluble) than hydrogen. Therefore, if one replaces hydrogen with fluorine as an inert carrier, fluorine can enter into membranes much more easily improving bio-availability of the active ingredient carried by fluorine.
- **… and NFIL has a unique position in the Indian fluorination industry…:** NFIL is uniquely positioned (one of the 4 organized players in fluorination in India), particularly post-acquisition of Manchester organics (which was into theoretical research and gram-scale production) and an investment of c. Rs. 0.6bn in India's first high pressure fluorination plant at Dahej for multi-ton batch size. Thus, integrating backward and forward helps NFIL offer a unique proposition of end-to-end solutions.
- **… with a focus on high-value businesses like CRAMS and specialty chemicals.:** NFIL has focussed on high-margin, high growth segments such as CRAMS and speciality chemicals. (low margin inorganic fluorides contributed c.16% of FY17 revenue while specialty fluoro-chemicals and CRAMS contribute c.30% /16% of revenues). We estimate CRAMS revenues to grow at a CAGR of 43% and continue to be the fastest growing segment for NFIL, followed by specialty chemicals with growth rate of 11%. NFIL has also entered into a JV with Piramal for manufacture of fluorine based molecules which is expected to further add revenues of c.Rs1bn annually.
- **Initiate with BUY and TP of Rs3,500:** We estimate FY17-19E revenue/EBITDA/earnings CAGR of 15%/16%/20% driven by strong growth in CRAMS and specialty chemicals segments and factoring 40bps improvement in margins by FY19. We value NFIL at 20x FY19EPS. Key risks are continued agrochemical and domestic steel industry slowdown, rise in fluorspar prices, etc.

Recommendation and Price Target	
Current Reco.	BUY
Previous Reco.	NR
Current Price Target (12M)	3,500
Upside/(Downside)	13.3%
Previous Price Target	0
Change	NA

Key Data – NFIL IN	
Current Market Price	Rs3,090
Market cap (bn)	Rs30.3/US$0.5
Free Float	49%
Shares in issue (mn)	9.8
Diluted share (mn)	9.8
3-mon avg daily val (mn)	Rs37.4/US$0.0
52-week range	3,250/1,902
Sensex/Nifty	30,054/9,338
Rs/US$	64.2

Price Performance			
%	1M	6M	12M
Absolute	-1.5	27.5	54.6
Relative*	-2.0	15.7	29.1

* To the BSE Sensex

Financial Summary					(Rs mn)
Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Net Sales	6,797	7,477	8,402	9,909	11,524
Sales Growth (%)	14.9	10.0	12.4	17.9	16.3
EBITDA	1,173	1,578	1,764	2,140	2,525
EBITDA Margin (%)	17.3	21.1	21.0	21.6	21.9
Adjusted Net Profit	835	1,178	1,383	1,712	2,008
Diluted EPS (Rs.)	85.4	120.4	141.3	174.9	205.2
Diluted EPS Growth (%)	52.9	40.9	17.4	23.8	17.3
ROIC (%)	13.8	17.1	18.6	22.1	24.3
ROE (%)	13.5	16.7	16.9	18.3	18.7
P/E (x)	36.2	25.7	21.9	17.7	15.1
P/B (x)	4.7	4.0	3.5	3.0	2.6
EV/EBITDA (x)	26.3	19.2	16.8	13.8	11.5
Dividend Yield (%)	0.7	1.1	1.1	1.4	1.6

Source: Company data, JM Financial. Note: Valuations as of 04/May/2017

JM Financial Research is also available on:
Bloomberg - JMFR <GO>,
Thomson Publisher & Reuters
S&P Capital IQ and FactSet

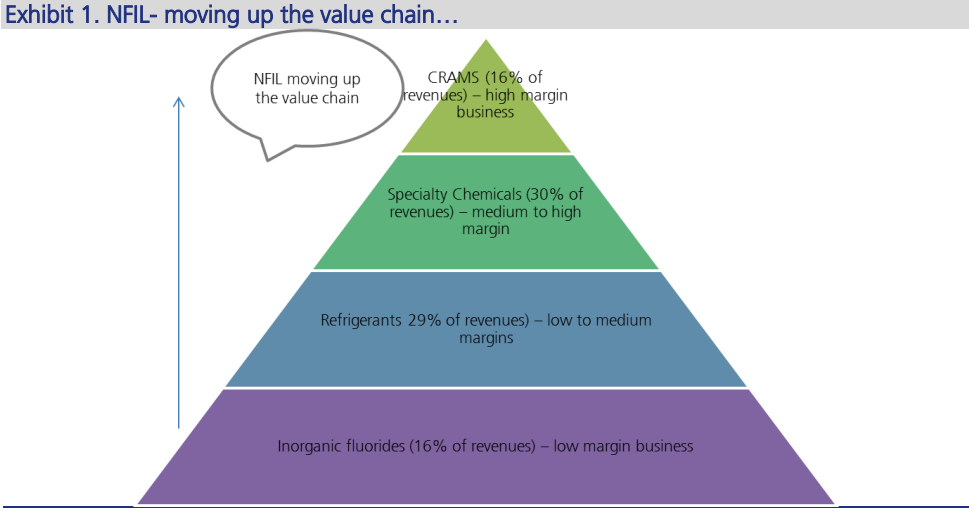
Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

Key investment highlights

- **Increasing importance of fluorination in agro and pharma…**: As per Solvay (one of the top 25 global chemical companies), growing number of blockbuster drugs like analgesics, anesthetics, antibiotics, anticancer agents, antiviral drugs and anti HIV treatments, etc. contain fluorine atoms because they increase bioactivity of the API. It is estimated that 4 out of 10 molecules in pharma and around 50% of agrochemicals molecules developed recently contain fluorine.

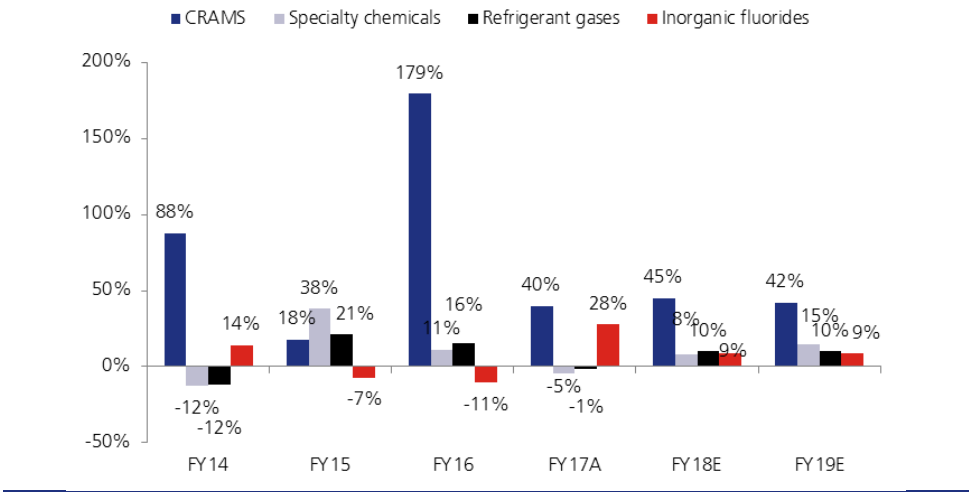
- **…coupled with five decades of expertise and a focus on moving up the fluorine value chain…:** NFIL has over the years moved up the fluorination value chain from manufacturing of low margin inorganic fluorides to high margin, high growth segments like specialty fluoro-chemicals (commenced in FY00) and CRAMS (commenced in FY11). NFIL's business mix over the years shows the company's focus towards moving into niche and specialized segments of fluorination chemistry.

Exhibit 1. NFIL- moving up the value chain…



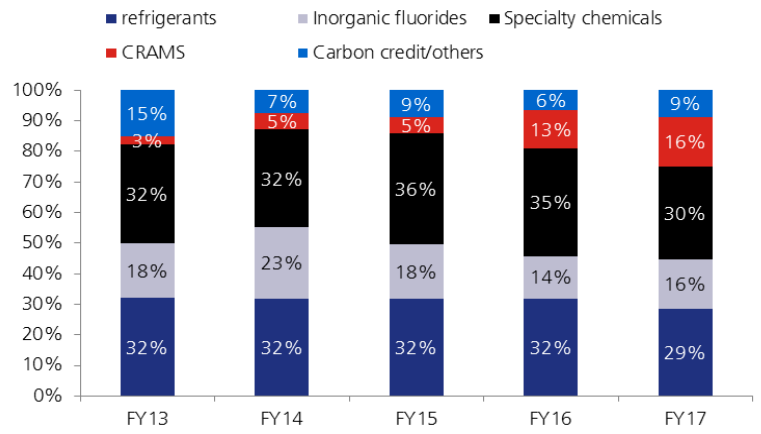
Source: Company, JM Financial

Exhibit 2. …With higher growth in value added products…



Source: Company, JM Financial

Exhibit 3. …Resulting into segment sales mix moving to higher value products



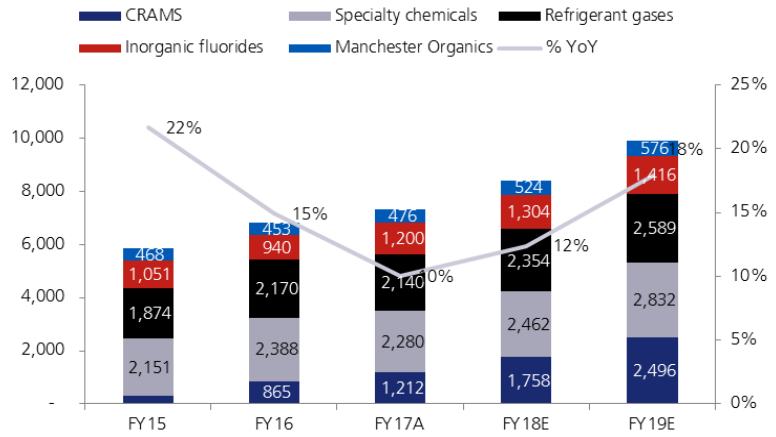
Source: Company, JM Financial* others include Manchester Organics

- …backed with investment in cGMP facility at Dewas,…: NFIL has recently invested c. Rs. 600mn in a new plant at Dewas for the world's largest and India's only high pressure SF4 fluorination plant. NFIL expects asset turns of 2.5x capex. This plant will start operations in FY18 and therefore, could add Rs.1.5bn revenue by FY19 to the CRAMS segment revenue of Rs.1.2bn in FY17E. We note that since CRAMS is a higher margin business, this investment will not only increase revenues but also margins.

- … and a joint venture with Piramal…: During FY16, NFIL formed Convergence Chemicals Private Limited (CCPL), a Joint Venture with Piramal Enterprises Ltd (PEL) which will manufacture a product based on specifications by Piramal. NFIL will start manufacturing the product after getting US FDA and EU approvals (currently under process). NFIL expects the project to start contributing to revenues in the next few quarters. NFIL holds 49% of the equity in CCPL, while 51% will be held by PEL. In the first phase of development, management expects CCPL to invest Rs1.4bn at Dahej, Gujarat. While CCPL will not contribute to NFIL's topline (49% shareholding), it will certainly add to the minority Profit and therefore, consolidated PAT.

- …to result into a consolidated earnings CAGR of 20%: We estimate NFIL's revenue/EBITDA/PAT will grow at a CAGR of 15%/16%/20% respectively, driven by growth in the CRAMs and specialty chemicals segment, coupled with margin expansion of 40 bps on back of change in business mix towards high margin products. The company operates on a virtually debt free balance sheet and has been able to fund its recent capex from carbon credit revenues of Rs4bn earned between FY10-13.

Exhibit 4. …which is expected to continue…



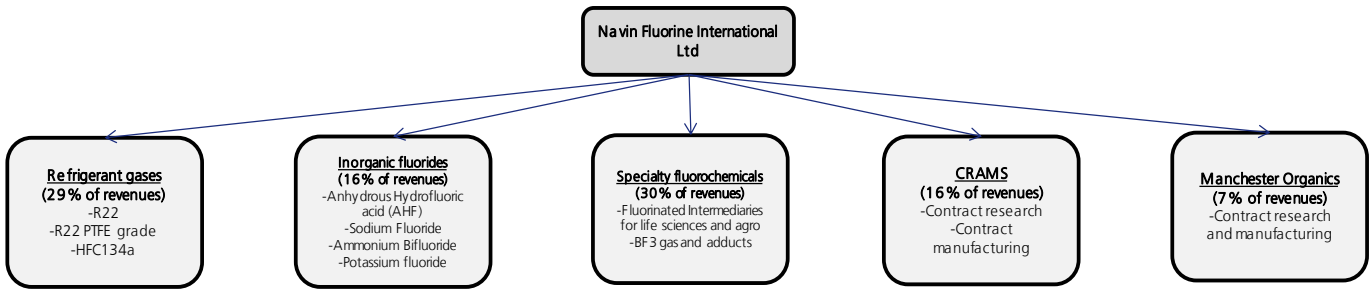
Source: Company, JM Financial

Company Background

- **50 years of experience in fluorination chemistry…:** Navin Fluorine International Limited (NFIL) is one of India's largest manufacturers of speciality fluorochemicals and has over 50 years of experience in fluorination chemistry. The Company belongs to the Arvind Mafatlal Group and has manufacturing locations at Surat and Dahej in Western India and Dewas in Central India. NFIL is one of the few companies in India with presence across the fluorination value chain. NFIL is said to produce over 60 fluorinated products with more than 40% of the products being exported to North America, Europe, Middle East and Asia Pacific.

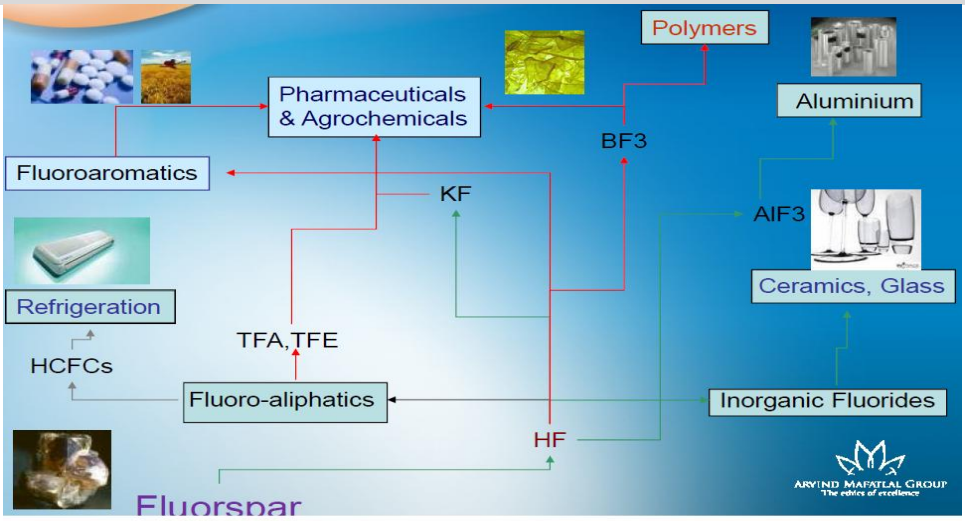
- **…focusing to move up the value chain:** NFIL started its journey in 1967 with the establishment of the first integrated fluorochemicals complex in South East Asia (excluding Japan). In 1989, the Montreal Protocol agreed to phase out Chlorofluorocarbons (CFCs) by 1996 and US production ended on 1st January 1996. This was to be followed by phasing out of Hydrochloroflurocarbons (HCFCs). In-line with this, NFIL entered into organic and inorganic fluorides in 1999 to diversify from Refrigeration gas. In 2011, NFIL acquired Manchester Organics and also commissioned a cGMP plant at Dewas to enter into Contract Research and Manufacturing (CRAMS). NFIL is now about to set up India's first high-pressure cGMP plant for Sulphur Tetrafluoride (SF4).

Exhibit 5. Navin fluorine business model



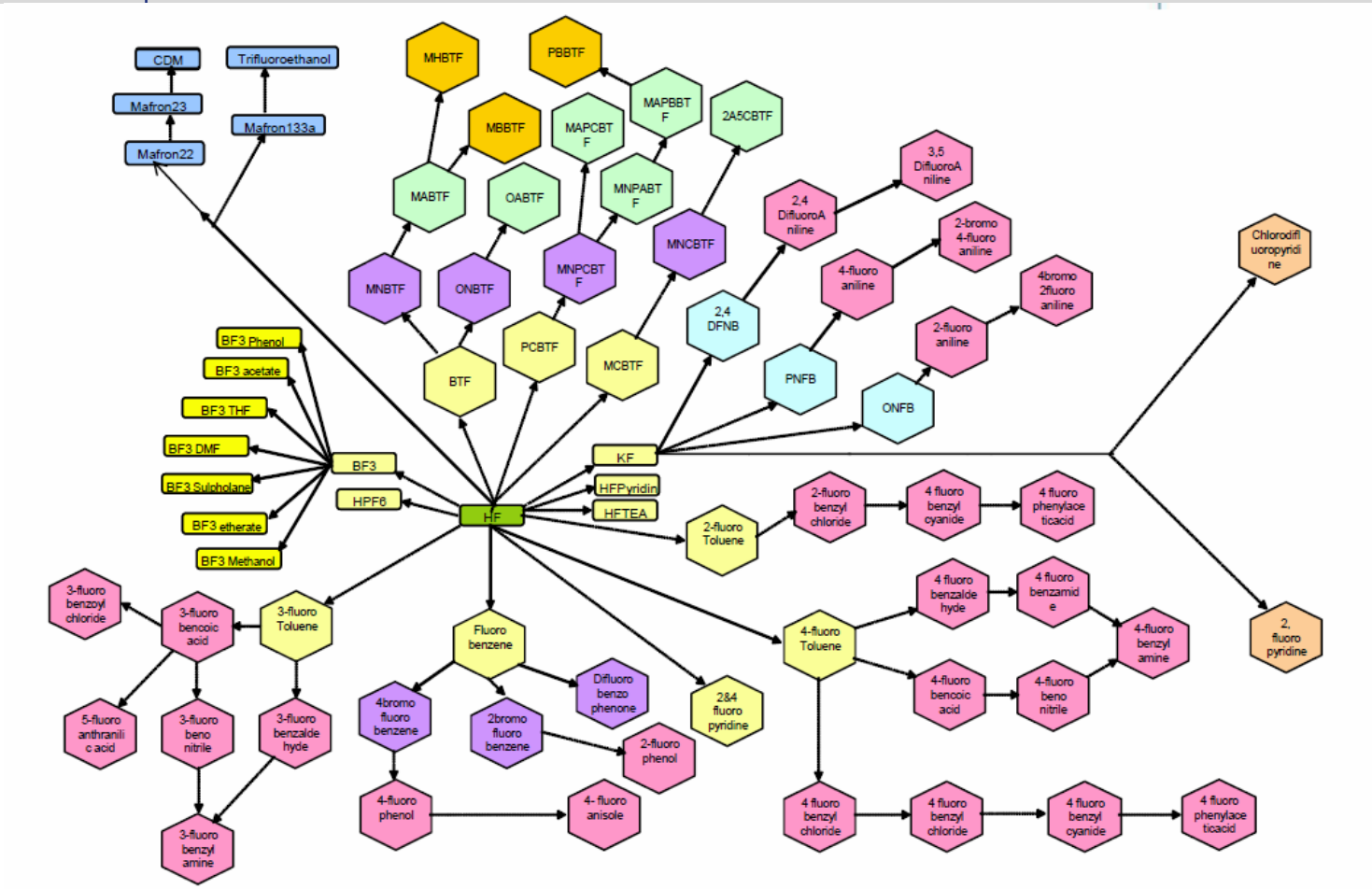
Source: Company, JM Financial

Exhibit 6. NFIL Fluorochemical value chain



Source: Company, JM Financial **Abbreviations**: TFA – Tri-fluoroacetic acid, Tri-fluoroethylene, KF – Potassium fluoride, BF3 – Boron trifluoride, AlF3 – Aluminium fluoride

Exhibit 7. NFIL product chain



Source: Company, JM Financial

Exhibit 8. Navin fluorine clientele

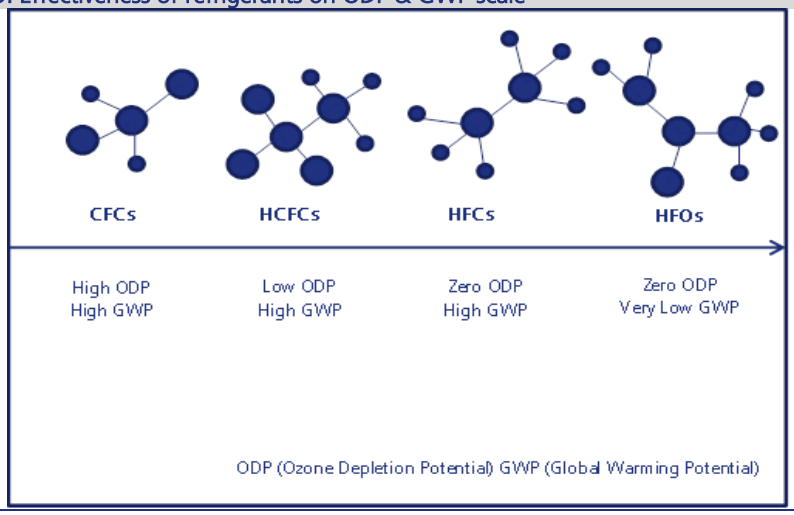
Source: Company, JM Financial

Industry Background

- **Fluorine, an explosive beginning…:** It is believed that around 500 years ago, fluorspar (a naturally occurring mineral – calcium fluorite) was known to improve the flow of metals while smelting and, therefore was used as a flux. In fact, the word fluorine comes from the Latin verb fluere, which means to flow. In 1670, Schwandhard found that glass would get etched when exposed with fluorspar treated with acid. Finally, in around 1886, fluorine was isolated from fluorspar and it was identified as the element which improved flow and etched the glass. However, there was no major commercial production / application for fluorine. It was only around World War II that the nuclear bomb project and nuclear energy applications made it necessary to produce large quantities. Fluorine and its compounds are used to produce uranium. Enriched radioactive uranium was used for the construction of the first atomic bombs which were used on Hiroshima and Nagasaki in 1945.

- **…and an equally potent impact on atmosphere..:** In the late 1800s and early 1900s, cooling applications mostly used toxic gases like ammonia and methyl chloride for refrigeration. However, General Motors scientists first developed Chloro-Fluro-Carbons (CFCs) as a safer alternative refrigeration gas. In 1930, General Motors and Du Pont formed an SPV to produce Freon – the brand name Du Pont used for marketing CFCs. While CFCs are safe and inert in lower atmosphere, once in stratosphere, they tend to decompose (photolytic decomposition) and chlorine would be released. This decomposition had 2 effects **1)** chlorine (released from CFCs) would react with ozone in stratosphere and deplete the ozone which would allow harmful ultra-violet radiations to pass through and **2)** the carbon released into the atmosphere would contribute to an increased global warming. Therefore, under the Montreal Protocol, it was decided to phase out CFCs. Hydro-chloro-fluoro-carbons (HCFCs), which have less chlorine and therefore, less ozone depletion potential were expected to replace CFCs. Subsequently, even HCFCs were supposed to be phased out and replaced with HFCs which have no chlorine and therefore zero ozone depletion potential but contribute to global warming due to carbon. Finally, HFCs were to be replaced with Hydrofluoroolefins (HFOs) which have no chlorine and low global warming potential (Refer Exhibit 9).

Exhibit 9. Effectiveness of refrigerants on ODP & GWP scale



Source: Chemours Note :**1)** the phase-out / ban was only on use of CFCs/HCFCs etc. as a refrigerant gas, but they could continue to be used as a raw material for further processing. 2) the impact on atmosphere was primarily due to chlorine and carbon and not due to fluorine.

- **… but is now seeing renewed interest.:** Fluorine is a poisonous gas at room temperature and reacts easily with nearly any element on Earth. It is so reactive that metals, glass, even water and other substance catch fire with bright flame when they come in contact with fluorine gas. This strong reactivity also means that freeing fluorine from a chemical compound containing fluorine is extremely difficult. However, fluorine has some properties which make it unique in medical chemistry. These properties include 1) it being similar in size to hydrogen and therefore, if one replaces Hydrogen with Fluorine, there is a 'mimic effect', 2) It has higher lipophilicity which leads to higher absorption etc. **(Ref. Fluorine in Medicinal Chemistry and Chemical Biology by Wiley)**.

Segmental analysis

As described previously, NFIL operates in four segments **1)** CRAMS – the latest segment but fastest growing and relatively good margin, **2)** Specialty chemicals – a niche chemical intermediate segment to supply to pharma and agrochemicals industries, **3)** Refrigerant gases and **4)** Inorganic fluorides.

We analyse each segment of NFIL to try to estimate the

- Segmental revenue analysis and growth estimates
- Segmental margin analysis and growth estimates

Exhibit 10. Summary of key assumptions

Segment	Revenue CAGR estimated FY17-19E	Basis of assumption	EBITDA margins assumed	Basis of assumption
CRAMS	43%	Rs2.5bn of revenues by FY19 (2.5x asset turns on Rs1bn of investment) - Management guidance	25-27%	Peer comparison
Specialty chemicals	11%	Muted agrochemical growth in FY18 and assumption of revival by FY19, driven by recovery in commodity prices and stability in inventory levels	24%	Material balance
Refrigerant gases	10%	Slightly ahead of industry growth	15-18%	Material balance
Inorganic fluorides	9%	Muted growth in domestic steel industry. Growth to be driven by higher share of exports	10%	Assumption, given the commodity nature of the business

Source: Company, JM Financial

Segmental revenue analysis

CRAMS (16% of revenues) – fastest growing segment

- **Entry into the rapidly growing CRAMS segment specializing in fluorination chemistry…:** NFIL commenced this segment only in 2011 with a focus on contract research and knowledge based offering that consists of basic research, laboratory synthesis, process developments, scale up and making small and large batch manufacturing. It caters to rapid product development needs of global innovator companies in pharmaceuticals space. The Company has presence across American, European and Asia Pacific regions with stronger. Marketing teams across USA, Western Europe and Japan.

- **…supported by new cGMP facility at Dewas …**:

  - **Upgrading from pilot level to ton level capabilities**: The company recently commissioned a new facility at Dewas, Madhya Pradesh, with cGMP compliant contract manufacturing facility, at an investment of Rs600mn. While the earlier facility at Dewas was also cGMP compliant, its operations were limited to pilot level research. The new facility takes this forward to create ton level capabilities.

  - **World's largest SF4 fluorination facility:** The expansion is believed to create possibly the world's largest SF4 fluorination facility. NFIL already operates one of the cGMP-certified fluorination facilities in India and the new plant will enable it to keep pace with rising global demand for fluorinated intermediates, particularly used in the development of pharmaceutical intermediates.

  - **Having a cGMP facility provides a niche:** Typically in CRAMS, a player approaches a research based house such as Navin for developing a product. Since the customers in this segment are global innovators catering to highly regulated markets such as Europe and US, the player conducts thorough audit and deliberations of the pilot facility. This is where having a cGMP facility has a niche over other facilities.

  - **Asset turns of 2.5x:** As per management, so far more than 40 molecules have been worked on and delivered to more than 20 global pharma majors. It is also in the process of reaching out to markets in the US West coast, Western Europe and Japan by having direct representations in those geographies. Management expects asset turns of 2.5x from this project.

- **..and increasing importance of fluorination in pharma**:

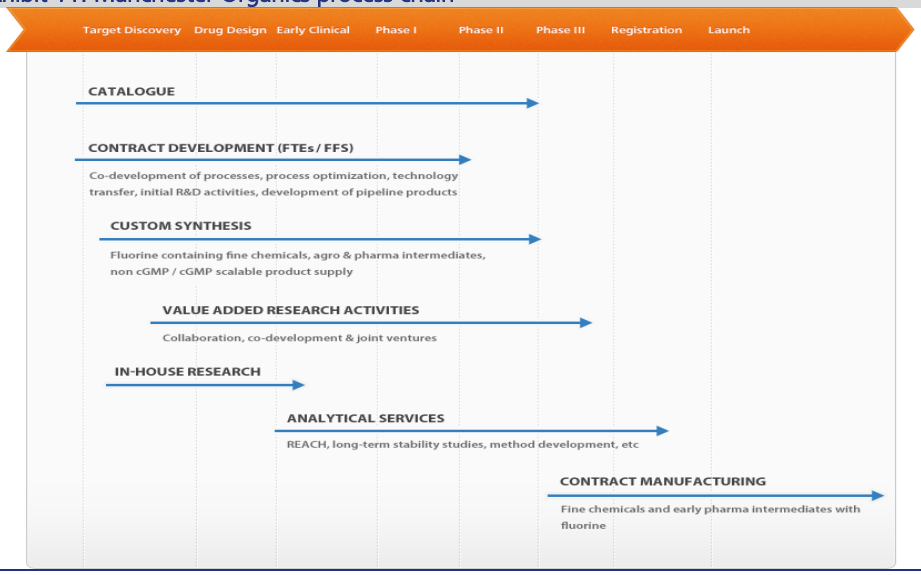
  - **4 out of 10 drugs require fluorination:** As per a research conducted by Solvay, growing number of blockbuster drugs developed globally like analgesics, anaesthetics, antibiotics, anticancer agents, antiviral drugs and anti HIV treatments, etc. contain fluorine atoms because they increase bioactivity of the API, as well as improving its stability, dissolvability, and bioavailability.

  - **Increasing trend of outsourcing among pharma majors:** In order to focus more on the research and development of new molecules and introduction of new chemical entities in the market, many global pharmaceutical companies are increasingly outsourcing virtually everything from clinical trials and regulatory management to API manufacturing. This shift has created new opportunities for the basic and advanced fluorochemical intermediate manufacturers in the Asian region.

  - **Key global players:** Rhodia, Solvay Fluor, Tosoh, Miteni, Lonza and Clariant are global leaders in fluorochemical custom synthesis.

- **... aided by the acquisition of Manchester organics:** Since FY11, NFIL held 51% stake in Manchester Organics, a UK based company specializing in research in the fluorination and high pressure chemistry segments. During FY16, the Company acquired balance 49% stake in MOL through its 100% subsidiary NFIL UK at an aggregate price of £ 6.3 mn. The business models of both these companies are in complete synergies, given that MOL had always been directly working with innovative pharma companies on milligram to multi kilo research phase and with the augmentation of cGMP facility, NFIL will now have expertise in multi hundred kilos to multi ton production activities.

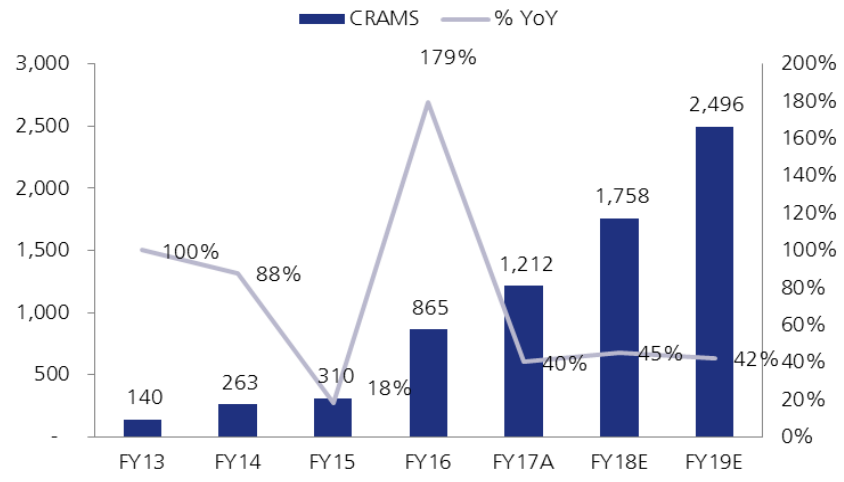
Exhibit 11. Manchester Organics process chain



Source: Company, JM Financial

- **... to maintain CRAMS as the fastest growing segment for NFIL; Expect revenue CAGR of 43%:** Management expects CRAMS revenues to grow to Rs2.5bn by FY19 (based on asset turns of 2.5x on total investment of Rs1bn at Dahej). In absence of order book status, we rely on management guidance and accordingly estimate this segment to grow at a CAGR of 43% from FY17-19E, thereby making it the fastest growing segment for NFIL. With the augmentation of the Dahej facility having specialization in fluorination chemistry and with a cGMP niche, we believe the company is uniquely placed to capture the $85bn global CRAMS opportunity

Exhibit 12. CRAMS revenues and growth



Source: Company, JM Financial

Specialty chemicals (30% of revenues)

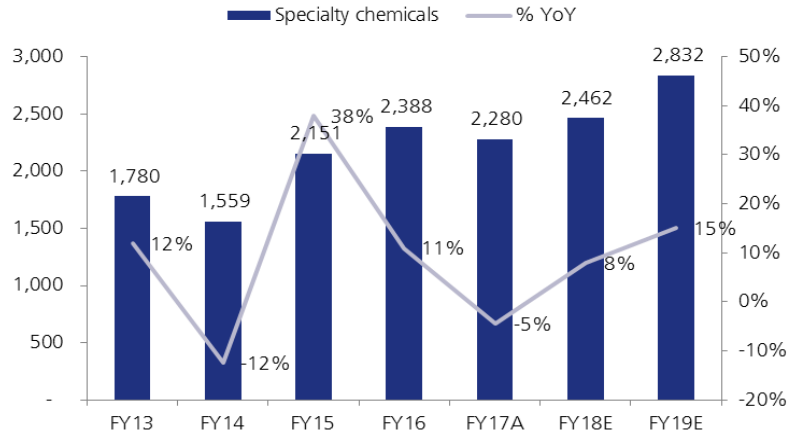
- **An established player in a niche segment with key focus on agro and pharma ...:** NFIL entered into the specialty chemicals segment in FY00 and manufactures niche fluorine based molecules for applications in the agrochemical and pharmaceutical industries. This segment derives c.55% of its revenues from manufacturing technical intermediaries for agrochemicals, which are primarily sold to global agrochemical innovators while 45% revenues are derived from pharmaceutical formulations, sold to generic pharma companies.

- **... with high growth and high margin potential but was impacted by lower agri-commodity prices...:** The specialty chemicals segment has grown at a CAGR of 10% over FY13-16 and was the second fastest growing business segment for NFIL. The growth was lower than potential mainly due to a slowdown for global innovator clients of NFIL on back of lower agri-commodity prices. However, with c.50% of sales being derived from pharma segment; NFIL has tried to de-risk the segment from vagaries of monsoon. This segment follows CRAMS in its ability to pass through rise in raw material prices, thereby making it the second highest margin segment.

- **... hence, the key monitorable is revival of global innovator Agrochemical companies:** Over the past few years, agri-commodity prices have been low, which is likely to have resulted into down-trading by farmers and high channel inventories for innovator agrochemical companies which are key clients for NFIL. Management expects the situation to improve by 1H18, after which the company could see an uptrend in the demand.

- **We estimate a CAGR of 10% in speciality chemicals segment:** Recent commentaries by global agrochemical players indicate that the slowdown in the industry could continue in FY18. Hence, for the agrochemical sales (55% of segment revenue) we estimate a growth of 5% in FY18 resulting into c.8% growth driven primarily by pharma. In FY19, if we assume a stabilization of commodity prices and global inventory levels, we could expect a revival in specialty chemicals revenues, and can assume a growth of 15% for FY19.

Exhibit 13. Specialty chemicals revenues and growth



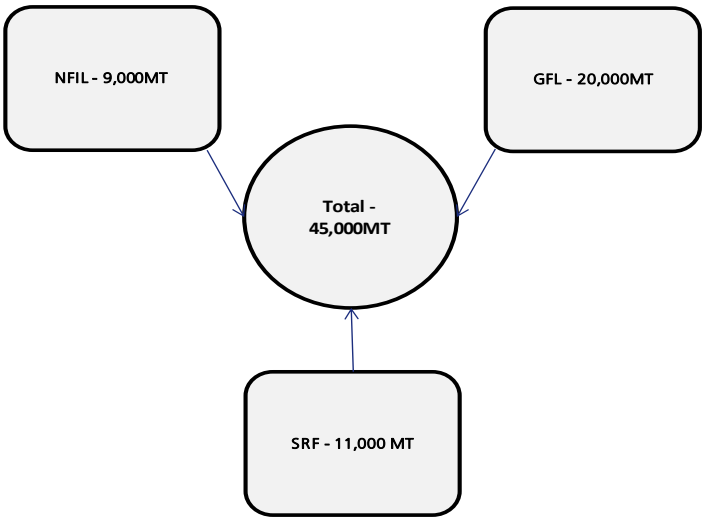
Source: Company, JM Financial

- **Dahej project with Piramal to further tap NFIL's fluorine capabilities:** NFIL formed a Joint Venture (49:51) (Convergence Chemicals Private Limited (CCPL)) with Piramal Enterprises Ltd (PEL) in 2016. NFIL will focus on manufacturing a product based on specifications by Piramal. The said product is currently in the process of receiving US FDA and EU approvals, NFIL will start manufacturing once the approvals are received, possibly in the next few quarters. CCPL has invested c.Rs1.4bn at Dahej and expects asset turn of 1x from this project. Since CCPL is not a subsidiary, it would be subject to single line consolidation as per Ind AS. Assuming a PAT margin of 10% for the project (in-line with average PAT for the standalone entity), we estimate profit from JV to be Rs34mn/Rs69mn for FY18/19E respectively.

Refrigerant gases (29% of revenues)

- **One of the oldest businesses...**: NFIL introduced refrigerants into India in 1967 shortly after commissioning its manufacturing plant at Surat, Gujarat, Western India. It was later backward integrated into the manufacture of critical intermediates namely sulphuric and hydrofluoric acid. NFIL is primarily into manufacture of R-22 with a capacity of 9,000 tonnes out of which c.40% is exported to Middle East and South Africa and balance is sold in in India. NFIL claims to have c.20% market share in India. Globally, in stationery A/Cs, more that 95% use R22 while in mobile (ie automobiles), mostly R134a is used. In India, NFIL's customers for R-22 include premium AC manufacturers such as LG, Samsung, Voltas and large industries like Reliance, Piramal, Godrej, etc. NFIL also imports R-134a from China and sold in India under the brand name Mafron. The season for refrigerants typically starts in June/July depending on when the monsoon begins, both in India as well as Middle East.

Exhibit 14. R22 capacities in India



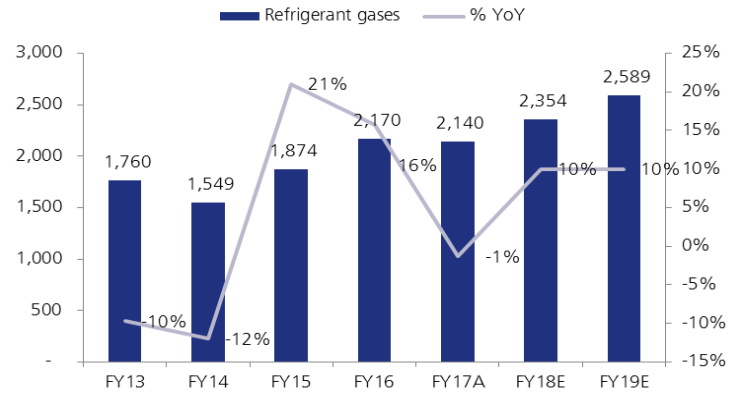
Source: Company, JM Financial

- **...but phase out of HCFC 22 and its replacement has resulted into uncertainty for capex..:** Under the Montreal protocol, production and use of HCFC 22 (R22) for refrigeration purpose started to be phased out from January 1, 2015 in developing countries but use of HCFC 22 (R22) for non-emissive purposes (Pharma and agrochemicals) is allowed. As a result of this, NFIL is currently operating at 9000TPA post production cut. The next cut in production is due in 2020. Globally, there appears to an uncertainty on whether HCFCs will be replaced by HFCs or the R400 series or the HFOs like R-1234yf. Hence, for the present, management could be prudently deciding to avoid capex and could take a decision only once there is clarity on the way forward.

- **... however, contract with Honeywell to exploit NFIL's capabilities:** During FY16, NFIL entered into an agreement with Honeywell to work jointly on a new technology of the refrigerant gas, HFO-1234yf. Honeywell is one of the largest players in the fluorochemicals industry having 17% market share globally. HFO-1234yf is potentially the next generation hydrofluoro-olefin (HFO) refrigerant for use in vehicle air conditioning systems globally. The plant for HFO-1234yf is under construction and NFIL expects it to go into trials in next couple of months and production to start by 3Q or 4Q17. However, we do not have the revenue potential of the contract with Honeywell and therefore, we do not factor any revenues into our estimates.

- **We estimate 10% revenue CAGR:** Globally, fluorocarbons (market size - $12bn worldwide) had the largest market share (by volume) in refrigerants and the global demand for refrigerants is expected to witness CAGR of 7% between 2015 and 2020 to reach $20bn (1.6 mn tonnes). This demand growth would be led by emerging countries specifically in HVAC solutions for commercial and industrial segments and cooling solutions for automobiles & residence. We estimate refrigerant gases revenues to grow at a CAGR of 10% from FY17-19 slightly ahead of the industry, driven by strong brand presence (Mafron) and distribution reach across India, South East Asia and the Middle east.

Exhibit 15. Refrigerant gases revenues and growth



Source: Company, JM Financial

Inorganic fluorides (16% of revenues)

- **One of the largest AHF manufacturers in India** In this segment, NFIL has one of the largest Anhydrous Hydrofluoric (AHF) and Aqueous Hydrofluoric acid manufacturing capacities in India with a capacity of 20,000 TPA. AHF is used for captive manufacture of various inorganic fluorides. NFIL develops products as per customer's needs and supplies primarily to industries such as stainless steel, glass, oil & gas, abrasives, electronic industries, pharmaceutical, agro-chemicals etc. These products are primarily in nature of high volume, with applications in standard processes.

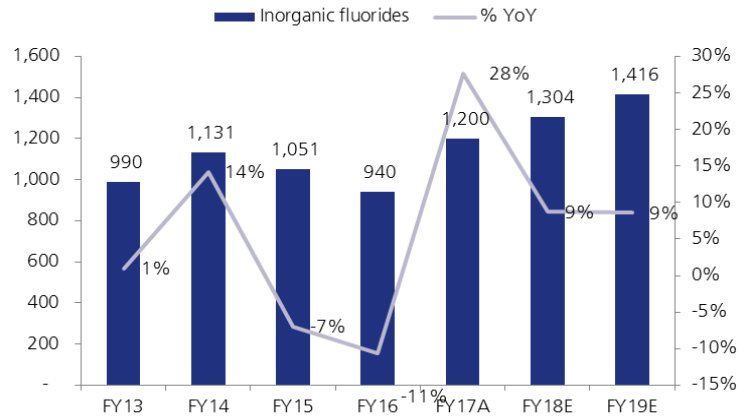
Exhibit 16. NFIL range of products

Name Of the Product	Industry
Aluminum Fluoride	Frosting of Bottles, Oil Well, Sugar
Ammonium Bifluoride	Electroplating , Sugar Industry, Oil Well Drilling
Anhydrous Hydrofluoric Acid	Refrigrant Gases, Oil Refinery
Dilute Hydrofluoric Acid (20%, 30%, 40%, 49%, 50%, 55%, 60%, 70%)	Steel Industry
Fluboric Acid 50%	Electroplating Industry
Hexafluoro Phosphoric Acid	Pharmaceuticals Intermediates
HF Pyridine 55%, 70%	Pharmaceuticals Intermediates
HF Urea 70&	Pharmaceuticals Intermediates
Mafrolite (Synthetic Cryolite - Crushed)	Abrasive/ Automobiles
Potassium Bi Fluoride	Pharmaceuticals / Atomic
Potassium Fluoride	Pharmaceuticals Intermediates/ Agro Chemicals
Potassium Fluoro Borate	Foundry Flux
Potassium Fluoro Titanate	Foundry Flux/ Titanium
Sodium Bi Fluoride	Tin Plates
Sodium Fluoride	Toothpaste/ Pharmaceuticals Intermediates

Source: Company, JM Financial

- **Exports growing at a faster pace;:** Though NFIL's inorganic fluorides business has been witnessing slowdown on back of weak demand from the stainless steel industry due to overcapacities in China and pricing pressures from cheaper imports, the company's export business has witnessed robust CAGR of 52% from FY13-16 due to management focus towards venturing into new geographies, primarily within Asia.
- **Expect CAGR of 9%; domestic steel industry recovery key monitorable:** On back of increased production in China and India still remaining a net importer of steel (inspite of anti-dumping duty), we do not estimate a growth higher than 5-7% for the segment. Management has however been focussing in expanding to newer geographies which could drive growth in the next couple of years

Exhibit 17. Inorganic fluorides revenues and growth



Source: Company, JM Financial

Segmental margin analysis

While the company does not provide segmental margins, based on NFIL's product chain, we have tried to estimate the margins for NFIL in each of the segments. We then use the same in estimating the overall margins for the company.

- **CRAMS – 25% margins:** As per management, the CRAMS segment ranks highest in the company's value chain, thereby implying that CRAMS margins are greater than the computed margins for specialty chemicals (refer below). Other Indian CRAMS players in the pharma and agro space viz. Divi's Labs (37% margins), Laurus (21%), PI Industries (22%), Hikal (20%), among others, could help us understand the range of margins earned in CRAMS. Based on the reported numbers of the aforementioned companies, we note that companies typically make margins of c.20-37% in CRAMS. However, we note NFIL has recently entered the CRAMS space and hence believe margins could be more towards the lower end of this range. Therefore, we estimate NFIL could make margins of c.25-26% in this segment.

- **Specialty chemicals – 24% margins:** In this segment, NFIL primarily manufactures Benzotrifluoride (BTF), Fluorobenzene (both commenced in 2000), Boron trifluoride (BF3) gas (since 2001) and trifluoroacetic acid (TFA) (since 2004), and derivatives of these products. We tried to analyze the margins of these products and believe that NFIL could be realizing gross margins of 61-65%, thereby translating in EBITDA margins of 24-25%.

Exhibit 18. BF3 material balance

Chemical equation			$B_2O_3+6HF \rightarrow 2BF_3+3H_2O$		
	Raw material			Finished product	
Chemical	B_2O_3	6HF		$2BF_3$	$3H_2O$
Amount ($/kg of finished product)	1.54	0.90		7.00	0.00
Gross profit ($/kg of finished product)			4.56		
Margins			65%		

Source: WebQC, Zauba, JM Financial. Note: B_2O_3 – Boron trioxide, HF – Hydrofluoric acid, BF_3 – Boron trifluoride

Exhibit 19. BTF material balance

Chemical equation			$C_6H_5CCl_3 + 3\ HF \rightarrow C_6H_5CF_3 + 3\ HCl$		
	Raw material			Finished product	
Chemical	$C_6H_5CCl_3$	3HF		$C_6H_5CF_3$	3Cl
Amount ($/kg of finished product)	1.7	0.4		5.6	0.00
Gross profit ($/kg of finished product)			3.46		
Margins			62%		

Source: WebQC, Zauba, JM Financial. Note: $C_6H_5CCl_3$ – Benzotrichloride, HF – Hydrofluoric acid, BF_3 – Benzotrifluoride

Exhibit 20. TFA material balance

Chemical equation				$CH_3COCl + 4\ HF \rightarrow CF_3COF + 3\ H_2 + HCl$ $CF_3COF + H_2O \rightarrow CF_3COOH + HF$			
	Raw material			Finished product			
Chemical	CH_3COCl	4HF	H_2O	CF_3COOH	HF	$3H_2$	HCl
Amount ($/kg of finished product)	1.23	0.70	0.00	5.00	0.00	0.00	0.00
Gross profit ($/kg of finished product)				3.07			
Margins				61%			

Source: WebQC, Zauba, JM Financial. Note: $C_6H_5CCl_3$ – Acetyl chloride, HF – Hydrofluoric acid, CF_3COOH (TFA) – Trifluoroacetic acid. By-products are not considered for calculation

- **Refrigerant gases – 15-18% margins:** NFIL is engaged in the manufacture of R-22 refrigerant gases, which is made from chloroform (1.5 units)and hydrofluoric acid (0.5 units). Based on a price of $2.2/kg (Source: Zauba), we believe NFIL could be earning gross margins of 52-55% for the product, thereby translating to EBITDA margins of 15-18%.

- **Inorganic fluorides – 10% margins:** This segment primarily involves the manufacture and sale of bulk chemicals being Hydrofluoric acid, Aluminium fluoride, potassium fluoride, etc. Given the commodity nature of the business, we believe the margins in this segment would not exceed 10%.

Based on above calculations, we also tried to tally the segmental margins (as calculated) with historical margins earned by the company.

Exhibit 21. Historical segmental margins

Segment	FY14	FY15	FY16	FY17
Refrigerants	279	281	434	449
% margins	18%	15%	20%	21%
Inorganic fluorides	113	84	94	144
% margins	10%	8%	10%	12%
Specialty chemicals	218	280	430	502
% margins	14%	13%	18%	22%
CRAMS	-	-	216	315
% margins	0%	0%	25%	26%
Total calculated margins	**610**	**645**	**1,174**	**1,410**
Total Reported margins	**607**	**633**	**1,161**	**1,497**

Source: Company, JM Financial*Projected based on 9M17 numbers

Fluorspar – a key raw material

- Fluorspar, chloromethanes, sulphur and boric acid form c. 70% of NFIL's raw material costs. Though the company neither provides segment wise margins nor the share in which these raw materials are used in various products, we have tried to estimate where these raw materials are used

Exhibit 22. Raw material profile

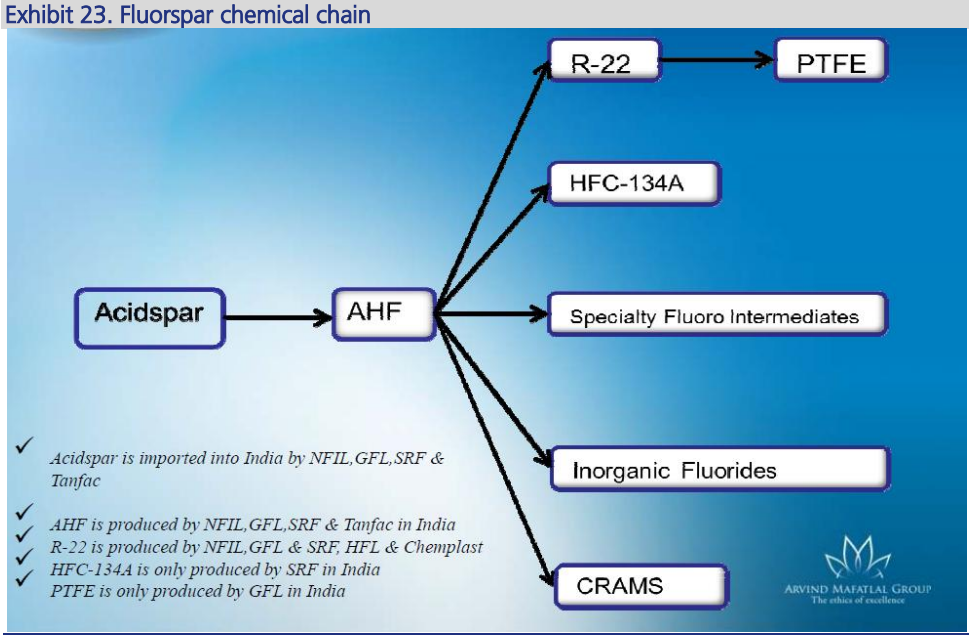
Fluospar	Forms c.22-25% of total raw material costs. Used in the manufacture of hydrofluoric acid further used in inorganic fluorides, refrigerant gases (22%), specialty chemicals & CRAMS
Chloromethanes	Forms c.7-15% of raw material costs and is primarily used in refrigerant gases
Spor 11	Forms c.2-3% of raw material costs. The company manufactures this product at Surat, and is primarily used in specialty chemicals segments
Sulphur	Forms 6-7% of raw material costs. Used to make sulfuric acid, which is used internally as well as separately sold
Boric acid	Used to manufacture antiseptics and hence could be for the specialty chemicals and CRAMS segments

Source: Company, JM Financial

- Typically, 1.95 units of fluorspar and 2.45 units of sulphuric acid are used in the manufacture of 1 unit of hydrofluoric acid (HF). The company used 34 thousand MT of fluorspar in FY16, which means it manufactured **c.18mn MT of hydrofluoric acid** (out of total capacity of 20mn MT). Further, c.0.49 units of hydrofluoric acid are used to make 1 unit of R-22 (refrigerant gas). Assuming the company operated at c.85% capacity (out of total capacity of 10,000MT), c.4,000MT of would have been used to make R22 (which is c.22% of total HF produced by the company).

- Even if we assume that c.50% of the total fluorspar consumption is used for the inorganic fluorides segment, we would still be left with usage of 28-30% of the total fluorspar for specialty chemicals and CRAMS segment. However, given the fact that these segments would be higher up the value chain, the impact of fluctuation in fluorspar prices on the margins would be lower.

Exhibit 23. Fluorspar chemical chain



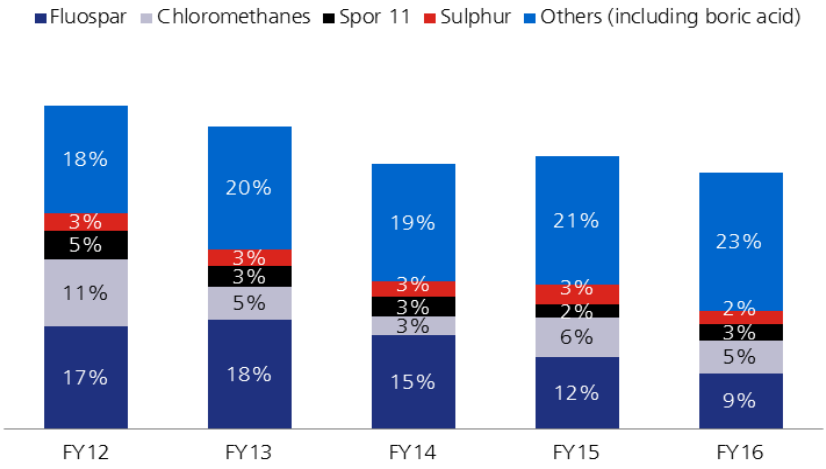
Source: Company, JM Financial *AHF - Anhydrous Hydrofluoric Acid

- China has the largest fluorspar reserves in the world and constitutes c. 50% of the world production. As of now, fluorspar is entirely imported into India as no reserve has yet been discovered. NFIL, SRF, GFL and Tanfac are the largest importers of fluorspar into India. Over the past few years, companies in India have been looking for various other countries to source fluorspar into India and have been successful in identifying multiple supply sources being South Africa, Thailand, Kenya and Vietnam. Chinese fluorspar imports still constitute c.50%of total fluorspar imports into the country.

- Exhibit 24 indicates how fluorspar cost as a percentage of sales have dropped from 17% to 9% from FY12-15, thereby helping lower COGS to a large extent. This could be partly due to the start-up of the CRAMS BU in FY11 and thereby moving up the value chain.

- NFIL, GFL and GMDC have also formed a joint venture in India to develop fluorspar mines in India. Based on our interaction with management, we understand that work on the project continues and that it may take another 3 years for the production of acid grade fluorspar in India. If successful, this could help lower costs for NFIL.

Exhibit 24. Raw materials as a % of sales (ex CER income)

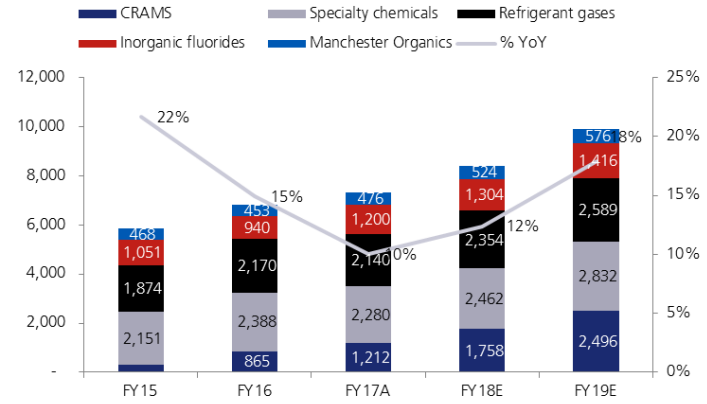


Source: Company, JM Financial

Financials

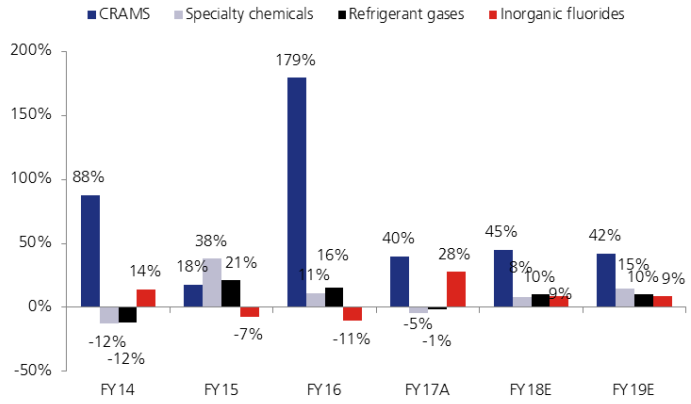
- **Estimate earnings CAGR of 20%:** NFIL has witnessed top-line/EPS CAGR of 19%/31% from FY14-16. After remaining under pressure for several years, NFIL's revenues witnessed uptick in FY15 led by specialty chemicals and CRAMS segments which further helped strengthening margins, thereby resulting in robust PAT growth of 74% for FY16. We estimate NFIL's revenue/EBITDA/PAT to grow at a CAGR of 15%/16%/20% driven by growth in the CRAMs and specialty chemicals segment, coupled with margin expansion of 40 bps on back of change in business mix towards high margin products. The company operates on a virtually debt free balance sheet.

Exhibit 25. Topline CAGR of 19%…



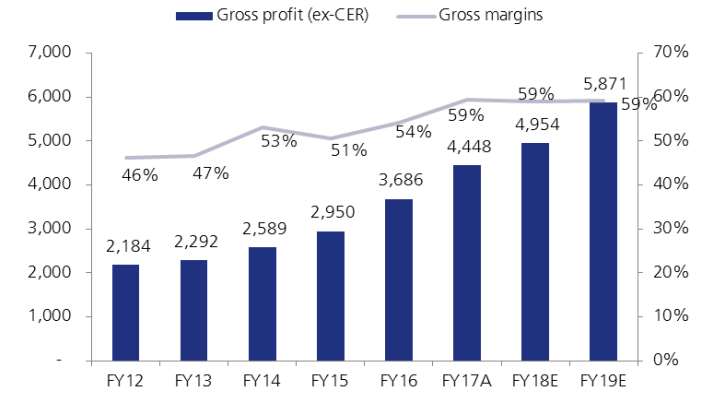
Source: Company, JM Financial

Exhibit 26. .. driven by CRAMS and specialty chemicals



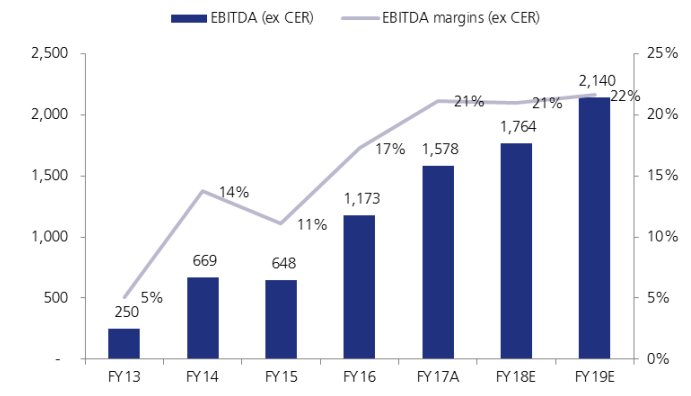
Source: Company, JM Financial

Exhibit 27. Change in business mix favouring margins (ex-CER)…



Source: Company, JM Financial

Exhibit 28. .. thereby resulting into sharp uptick in EBITDA (ex-CER)



Source: Company, JM Financial

- **Carbon credits utilized for capex**: Following the installation of a Clean Development Mechanism (CDM) in 2007-08, the Company discontinued the release of harmful by-product HCFC-23 into the atmosphere. The project was registered by the CDM Executive Board of United Nations Framework Convention on Climate Change (UNFCCC) for generating 2.8 mn CERs (Certified Emission Reduction) per annum. Between FY10-13 the company earned c.Rs4bn by selling its CERs entirely by December 2012 (Price per CER was c.Euro12 per annum which fell to c.Euro 4 per annum by December'11). This amount helped in funding majority of capex between FY11-16, including that of Manchester Organics acquisition, construction of cGMP facility at Dewas and the new facility at Dahej for the JV with Piramal, even by keeping its debt levels constant.

Valuations

- Exhibit 29 provides a comparison of valuations of domestic chemical companies. According to latest valuations, peers are trading at a mean of 17x on FY19 EPS.

Exhibit 29. Peer comps

Name	EBITDA Margin			EV / EBITDA			P / E			P / B		
	FY17	FY18E	FY19E	FY17	FY18E	FY19E	FY17	FY18E	FY19E	FY17	FY18E	FY19E
Navin Fluorine	21.0%	20.9%	21.3%	17.4	15.2x	12.3x	21.2x	22.0x	17.7x	3.9x	3.5x	3.0x
Peers												
SRF Ltd	20.4%	19.2%	19.7%	11.2x	10.5x	9.1x	21.8x	20.2x	16.8x	3.1x	2.6x	2.2x
Gujarat Fluorochemicals Ltd	37.3%	38.6%	38.6%	13.3x	11.0x	8.0x	20.6x	17.3x	14.0x	2.4x	2.0x	1.7x
Atul Ltd	18.0%	18.6%	19.1%	14.3x	12.4x	10.7x	23.9x	20.2x	17.0x	4.7x	3.9x	3.2x
Aarti Industries	20.7%	20.5%	19.9%	13.3x	11.7x	9.1x	22.7x	19.3x	14.7x	5.5x	4.6x	3.8x
Vinati Organics Ltd	33.2%	35.2%	35.1%	19.2x	15.6x	13.0x	31.0x	25.8x	21.2x	6.6x	5.5x	4.6x
Mean of peers	**25.9%**	**26.4%**	**26.5%**	**14.3x**	**12.2x**	**10.0x**	**24.0x**	**20.6x**	**16.7x**	**4.5x**	**3.7x**	**3.1x**
Median of peers	**20.7%**	**20.5%**	**19.9%**	**13.3x**	**11.7x**	**9.1x**	**22.7x**	**20.2x**	**16.8x**	**4.7x**	**3.9x**	**3.2x**

Source: Company, JM Financial* Bloomberg consensus estimates

- We value NFIL at 20x FY19EPS on the basis of EPS CAGR of 20% for FY17-19E. We also analysed NFIL's valuation through a DCF (Exhibit 31 and 32). The company has traded on a 3 year mean of 12x, and has rerated over the past one year to an average of 17x.

Exhibit 30. Rolling PE chart

Source: Company, JM Financial

- Key downside risks to valuation are a) slower than expected agrochemical revival, b) HCFC phase out - company not being able to tap upcoming opportunity (HFC/HFO) c) unfavorable fluorspar prices, d) further slowdown in domestic steel industry, etc.

Exhibit 31. DCF model (Rs mn)

	EFY19	EFY20	EFY21	EFY22	EFY23	EFY24	EFY25	EFY26	EFY27
EBIT	1,821	2,175	2,497	2,873	3,249	3,626	3,995	4,404	4,878
	23%	**19%**	**15%**	**15%**	**13%**	**12%**	**10%**	**10%**	**11%**
tax rate	25%	25%	25%	25%	25%	25%	25%	25%	25%
EBIT * (1-tax)	1,360	1,626	1,867	2,150	2,432	2,715	2,993	3,300	3,656
Depreciation	319	349	401	453	478	504	530	556	582
Working Capital	(309)	(243)	(280)	(257)	(240)	(220)	(213)	(226)	(261)
Capex	(600)	(600)	(1,000)	(1,000)	(500)	(500)	(500)	(500)	(500)
Total FCF to firm	**770**	**1,132**	**989**	**1,345**	**2,170**	**2,500**	**2,810**	**3,129**	**3,476**
Discounting multiple at WACC of 11.6%	1.00	0.90	0.80	0.72	0.65	0.58	0.52	0.46	0.42
PV of cash flows	**770**	**1,015**	**794**	**968**	**1,400**	**1,445**	**1,456**	**1,453**	**1,447**

Source: Company, JM Financial

Exhibit 32. Computation of fair value as per DCF (Rs mn)

Total cash flow	10,747
Terminal value at growth rate of 5%	23,074
Debt	(603)
Cash	1,064
Total	**34,282**
Shares	10
TP (Rs)	**3,500**

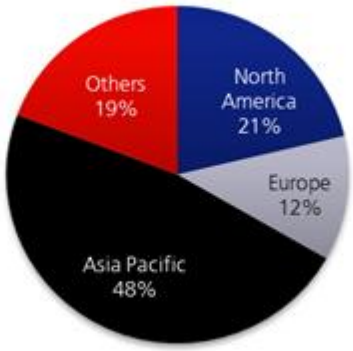
Source: Company, JM Financial

Industry overview - Fluorochemicals

- The global market size of fluorochemicals industry is estimated at c.USD19 bn (c.3.67 MMT) in 2015 and is expected to grow at c.5-5.5% CAGR till FY20E to reach a market size of c.USD24-25bn. Fluorochemicals volume is expected to grow at a lower rate of 3.7% CAGR to reach c.4.4 MMT by FY20E, primarily because of increase in production of more value added products.

- Globally, Asia Pacific is the largest market for fluorochemicals (Refer Exhibit 33) and will continue to be the largest market for fluorochemicals by 2020. By FY20, China alone will contribute c. 40% of the global fluorochemicals volume and India will be the fastest growing market in the fluorochemicals space. (Source: Freedonia, Global market insights, Industry reports)

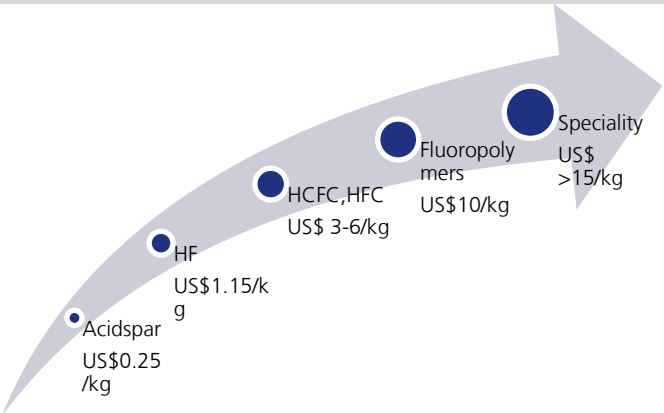
Exhibit 33. Fluorochemicals volume by region



Source: Source: Global Market Insights, Company, JM Financial

- As highlighted from exhibit 33, Asia Pacific, North America and Europe account for c. 81% of the total consumption. Therefore, understanding these three region demand-supply is extremely important. Fluorine is used for various purposes and the value addition depends on the use (Exhibit 34)

Exhibit 34. Fluorine value chain



Source: Zauba, Company, JM Financial

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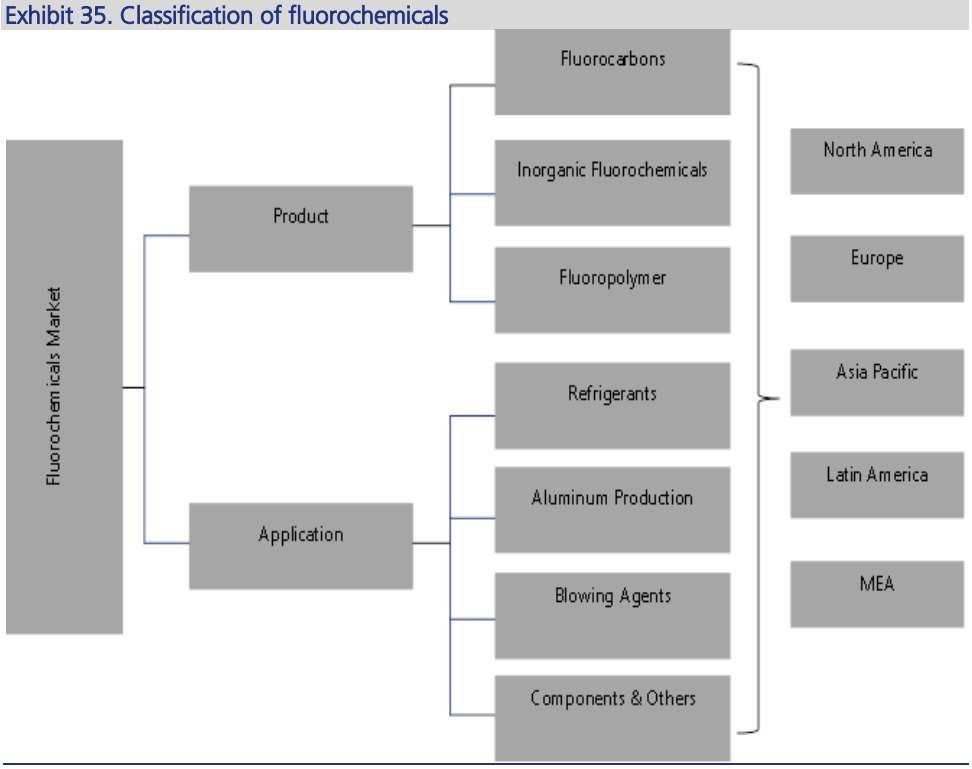
Types of fluorochemicals

Fluorochemicals can be classified **a)** on the basis of type of the product in which it is used or **b)** on the basis of the actual end-use.(Refer exhibit 35 below)

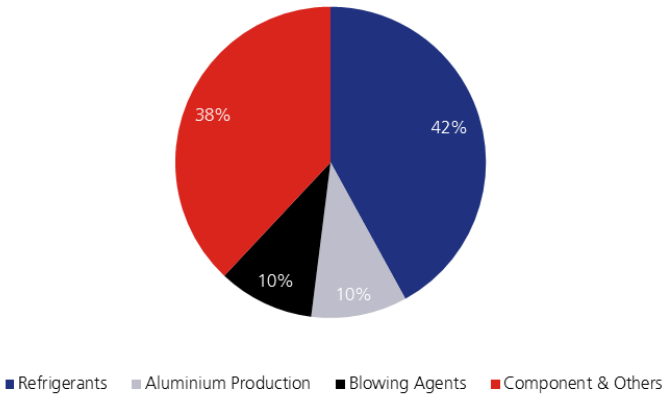
Exhibit 35. Classification of fluorochemicals



Source: Global Market Insights, Company, JM Financial

a) As seen from the above exhibit, If fluorochemicals are classified on the basis of application or end-use, fluorochemicals can be broadly classified as chemicals used as **1)** refrigerants, **2)** aluminum production, **3)** Blowing agents and **4)** components. Within these, the refrigeration is the largest use of fluorochemicals (Refer Exhibit 36 below) while c.38% is used in making fluorine based components

Exhibit 36. Fluorochemicals volume by segment



Source: Global market insights

b) If classified on basis of the type of product, fluorochemicals can be grouped into three categories viz. **1)** fluorocarbons, **2)** inorganic fluorochemicals and **3)** fluoropolymers.

Fluorocarbons

Fluorocarbon is a chemical compound where some part or all of the hydrogen of the hydrocarbon molecule is replaced with fluorine.

Fluorocarbons can further be broadly classified based on the use into two categories.

- Refrigerants: Refrigerators, Insulation, Aerosols and Air Conditioners
- Speciality fluorocarbons: Agrochemicals and Pharmaceuticals

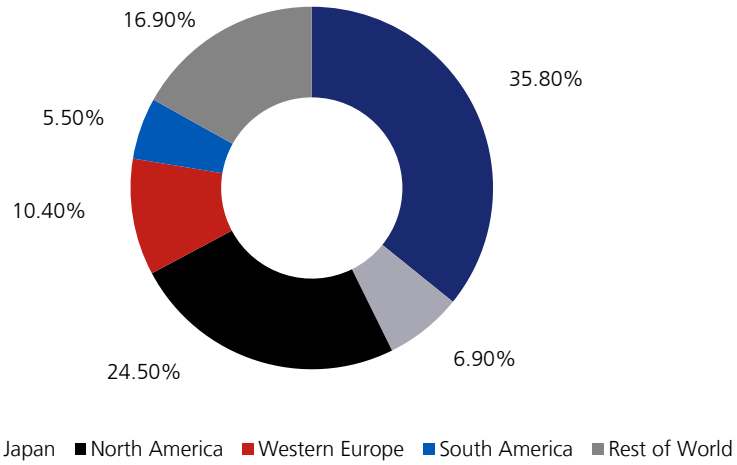
Refrigeration, air conditioning, and thermal insulation are by far the largest markets for fluorocarbons while other critical applications like protection and solvents continue to benefit from the use of fluorocarbons.

Fluorocarbons market remains the most dynamic sector of the Fluorochemicals industry for two reasons: i) regulations aimed at protecting the ozone layer and reducing global warming and ii) a sharp contrast in the outlook between developed and developing countries.

Regulations are the most dynamic force affecting the fluorocarbons segment. Montreal Protocol mandates that most commonly used HCFCs will have to be phased out by 2040 in developing countries while the phase-out of HCFCs in developed countries is nearly complete and most end users have switched to HFCs. In the next phase, HFCs will face restrictions due to their global warming potential (GWP) with new laws in developed countries expected to limit future demand.

Exhibit 37 indicates the regional demand for fluorocarbons as in FY14. Asia Pacific (china + japan) is the largest consumer of fluorocarbons worldwide with c.42.70% of the global volumetric demand. China with c.36% volume share is the key for fluorocarbons growth but the sluggish large-scale real estate investment could impact near-term growth.

Exhibit 37. Global fluorocarbon volume demand by geographic region, FY14



Source: Industry reports, Company, JM Financial

Fluoropolymers

Fluoropolymers are fluorinated polymers that have multiple strong carbon-fluorine bonds. Fluoropolymers possess a unique combination of chemical resistance and insulation properties. Fluoropolymers are low volume and high value chemicals mainly used in automobiles, electrical and electronics and for industrial purpose. Global fluoropolymer market is forecast to witness over c.10% CAGR till 2024. The segment accounted for over c.15% of the industry share in 2015. (Source: Global Market Insights) Heat resistance, durability and high strength are key properties to use the product in fire safety equipment in automobile and aircraft.

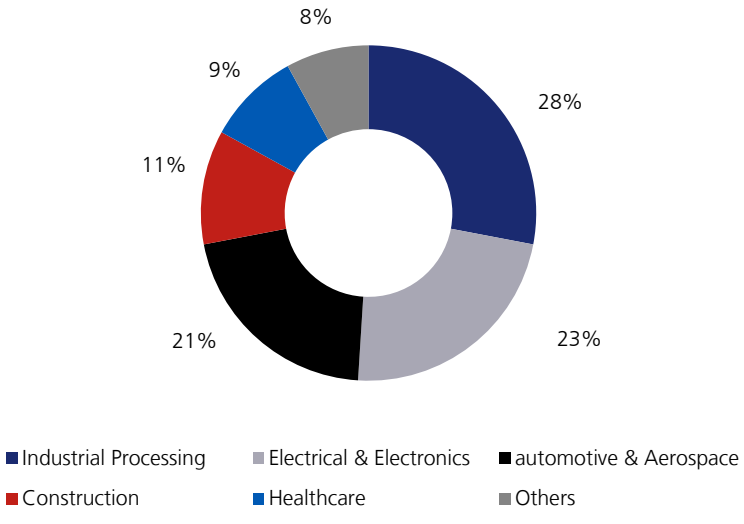
Fluoropolymers mainly consist of **i)** Polytetrafluoroethylene (PTFE), **ii)** Polyvinyl fluoride (PVF), **iii)** Polychlorotrifluoroethylene (PCTFE), **iv)** Polyvinylidene difluoride (PVDF), **v)** Fluorinated ethylene propylene (FEP), **vi)** Perfluoroalkoxy polymer (PFA) and **vii)** Other value added products

Within the fluoropolymers, PTFE is the largest product with a market share of c.41% (by value) of the global fluoropolymers market in 2014. PVDF is the second-largest product and accounts for c.16.2% of the market share in 2014. (Source: Future Market Insights).

Within the fluoropolymers, PTFE and PVDF will be the highest growing segment owing to increasing consumption in electronics and aerospace industries for insulation and coatings. While fluoropolymers are the smallest product in volume terms, they account for a disproportionate share of market value due to their higher average prices.

Fluoropolymers are used in automotive & aerospace, industrial processing, healthcare, electrical & electronics, construction and others. Exhibit 38 indicates the classification of fluoropolymer market based on the end use. Industrial processing segment accounted for the largest market share of over 28% of the global value for fluoropolymers in 2014. Electrical and electronics were the second-largest end use with over 20% share in the global fluoropolymer market. (Source: Future Market Insights) In these two industries, they are used in applications like pump, impellers, coating for heat exchangers, tanks, reaction vessels, autoclaves, container, components for manufacture of semiconductors and electrical insulation. Furthermore, demand for fluoropolymers could continue to grow on the back of use in emerging applications such as waterproof clothing, non-stick cookware and dental fillings.

Exhibit 38. Global fluoropolymer market - by end use, 2014



Source: Future Market Insights

Inorganic Fluorochemicals:

Inorganic fluorochemicals include specialty/performance fluorine products such as inorganic fluorine gases, water fluorination chemicals, inorganic dental fluorides and fluroboron compounds. Aluminium fluoride is the largest (by volume) applications of inorganic fluorides. Aluminium fluoride is most commonly used as a flux in aluminium production to reduce the temperature in the smelters and it also enables removal of magnesium by generating magnesium fluoride. Magnesium fluoride can then be easily removed. Around 18kg of aluminium fluoride is used for every ton of aluminium metal produced. Aluminium fluoride is also used in ceramics, catalysts, etc. in small quantities. Demand for inorganic fluorochemicals will be largely a derived demand from automotive / aircraft / building construction and others that use aluminium. Improved fuel economy and reduced emissions in automotive industry will indirectly benefit demand for inorganic fluorochemicals. 3M, Air products & Chemicals Inc., Arkema, Asahi Glass, Daikin, Dongyue, DuPont, Halocarbon Products Corp, Honeywell, Maxichem Fluor S.A de C.V and Mitsui Chemicals are some of the largest companies in inorganic fluorochemicals.

Since all fluorochemicals use fluorine, which in-turn is made from fluorspar, it is important to understand the dynamics of fluorspar – which we do in the next section

Fluorspar

Fluorspar (the commercial name for the mineral fluorite which in its pure form is calcium fluoride (CaF_2)) is used for manufacturing fluorine-based products. Historically, Fluorspar was used in manufacturing steel and later in manufacturing ceramics as a fluxing agent. Since the last few decades, it is also used as raw material for fluorocarbons and fluoropolymers. The fluorine atom provides part of the chemical backbone of many pesticides and blockbuster pharmaceuticals such as Lipitor.

There are three grades of fluorspar, based on concentration of CaF2 in the ore.

- Acid grade (Acidspar): This grade has atleast 97% CaF_2. It is mainly used for **a)** conversion to HF, which is building block for all fluorochemistry and **b)** manufacturing of AlF3 (aluminium fluoride), which is used in smelting of aluminium.
- Ceramic grade: Ceramic grade contains nearly 85-96% of calcium fluoride and is used primarily in making glasses and ceramics used for cookware and labware.
- Metallurgical grade (Metspar): Metallurgical grade contains nearly 60-85% of calcium fluoride. It is used as fluxing agent in manufacturing of steels, which removes impurities such as sulphur and phosphorous from molten metal and improves the fluidity of slag.

South Africa, China, Mexico and Mongolia account for c. 52% of the world reserves. Interestingly, while China has the second-largest reserves accounting for c. 15% of global reserves, in terms of production, China is c. 65% of global production – at this rate, China will consume all its reserves in less than 10 years. (Refer Exhibit 39 below)

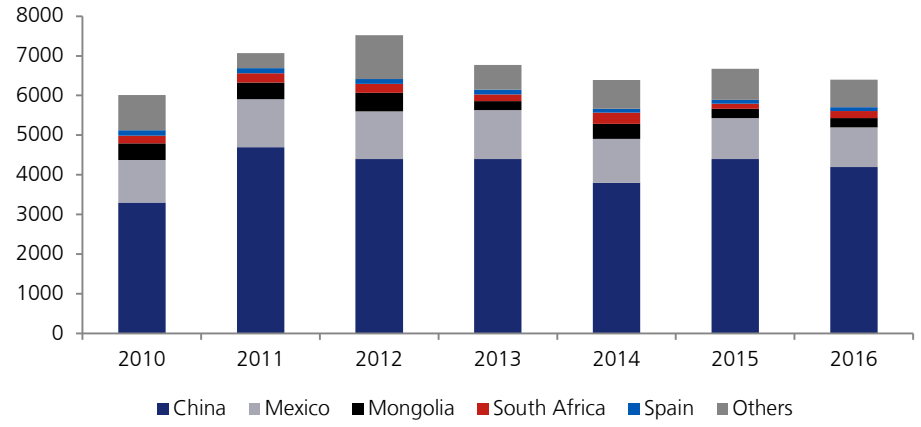
Exhibit 39. World Mine Production and Reserves (million tons)

Country	Mine Production (2015)	World Production (2016)	Reserves
United States	NA	NA	4000
China	4400	4200	40000
Germany	40	60	NA
Iran	80	80	3400
Kazakhstan	110	110	NA
Kenya	63	20	50000
Mexico	1030	1000	32000
Mongolia	231	230	22000
Morocco	79	75	580
South Africa	135	180	41000
Spain	98	95	6000
Thailand	50	50	NA
United Kingdom	81	40	NA
Vietnam	168	170	NA
Other countries	109	89	110000
World total (rounded)	**6670**	**6400**	**260000**

Source: USGS

China has been the single largest producer of Fluorspar since 2010 (Refer Exhibit 38 below).

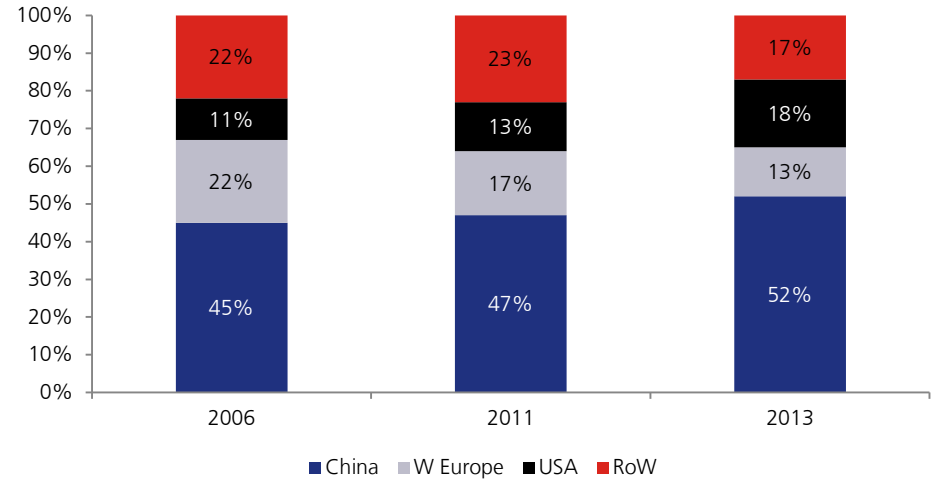
Exhibit 40. Global fluorspar production (in mnT)



Source: USGS

While China is c. 65% of global fluorspar production, China is also one of the largest consumer with c. 52% of global consumption (Exhibit 41). Therefore, China is currently self-sufficient in terms of demand supply and exports only c500-1000 MnMT or c. 15-20% of its production. Chinese domestic consumption has grown at a CAGR of 9% between 2000 and 2012 against the average global growth rate of 3.4%. (Source: Roskill).

Exhibit 41. Global fluorspar consumption



Source: US Geological Survey

Clearly, China will have a significant impact on global Fluorspar prices in the near-term. China is obviously aware of this and over last few years has tried to reduce exports in order to prioritise domestic consumption. China is also trying to prioritise production of value added fluorine products.

Export restrictions by China on basic raw materials like fluorspar and Hydrofluoric acid have resulted into emergence of other suppliers like Mexico, Kenya, Vietnam and South Africa. This has ensured that Fluorspar prices have remained elevated but stable.

Over the next few years, as China's reserves deplete, if China tries to further restrict exports or actually start importing Fluorspar, there could be an impact on global Fluorspar prices. Hence, it is important to **1)** if possible try to increase domestic production of fluorspar and **2)** try to identify an alternative method to make fluorine.

1) Fluorspar – an Indian perspective

As per UNFC system, the total resources of fluorspar in the country were estimated to be 18.19 MMT in FY13. The production of fluorspar (graded) at 2,947 tonnes in FY15 increased by 19% over FY14.

The resources of fluorspar in India are limited and grades of fluorspar produced do not meet the specifications of the chemical industry. Ambadungar Fluorspar mine of GMDC is the only domestic source of acid grade fluorspar, slightly inferior in quality with high phosphorous content. Hence, to meet the requirements, the domestic chemical industry will have to depend, both qualitatively and quantitatively on imported fluorspar in the coming years, both for direct use and for blending with the domestic acid grade fluorspar.

Clearly, the Indian perspective does not seem to provide significant hope.

2) Alternative to Fluorspar – Flurosilicic Acid

Over the last few years, as China reduced the exports of Fluorspar and the prices stabilised at higher levels, companies have been looking for an alternative to Fluorspar. Flurosilicic Acid is one of the key alternatives being considered. Flurosilicic Acid is a by-product in Phosphoric Acid manufacturing. In fact, disposal of fluorosilic acid is a problem for Phosphoric Acid manufacturers. Hence, this is a viable option as it is a win-win for both Phosphoric Acid manufacturers and for Fluorine companies.

Clearly, if Fluorspar prices remain elevated then Flurosilicic Acid route is the most viable option for producing Fluorine and therefore, one does not need to be significantly worried about Fluorspar prices.

Financial Tables (Consolidated)

Income Statement (Rs mn)

Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Net Sales	6,797	7,477	8,402	9,909	11,524
Sales Growth	14.9%	10.0%	12.4%	17.9%	16.3%
Other Operating Income	0	0	0	0	0
Total Revenue	**6,797**	**7,477**	**8,402**	**9,909**	**11,524**
Cost of Goods Sold/Op. Exp	3,111	3,029	3,448	4,039	4,664
Personnel Cost	806	921	1,015	1,188	1,374
Other Expenses	1,706	1,949	2,175	2,543	2,961
EBITDA	**1,173**	**1,578**	**1,764**	**2,140**	**2,525**
EBITDA Margin	17.3%	21.1%	21.0%	21.6%	21.9%
EBITDA Growth	62.5%	34.5%	11.8%	21.3%	18.0%
Depn. & Amort.	225	299	288	319	349
EBIT	949	1,279	1,476	1,821	2,175
Other Income	245	306	343	389	428
Finance Cost	38	18	11	10	8
PBT before Excep. & Forex	1,156	1,567	1,808	2,201	2,595
Excep. & Forex Inc./Loss(-)	0	273	0	0	0
PBT	1,156	1,840	1,808	2,201	2,595
Taxes	321	456	459	557	655
Extraordinary Inc./Loss(-)	0	0	0	0	0
Assoc. Profit/Min. Int.(-)	0	0	34	69	69
Reported Net Profit	835	1,384	1,383	1,712	2,008
Adjusted Net Profit	**835**	**1,178**	**1,383**	**1,712**	**2,008**
Net Margin	12.3%	15.8%	16.5%	17.3%	17.4%
Diluted Share Cap. (mn)	9.8	9.8	9.8	9.8	9.8
Diluted EPS (Rs.)	**85.4**	**120.4**	**141.3**	**174.9**	**205.2**
Diluted EPS Growth	52.9%	40.9%	17.4%	23.8%	17.3%
Total Dividend + Tax	205	340	340	421	494
Dividend Per Share (Rs)	21.0	34.8	34.7	43.0	50.5

Source: Company, JM Financial

Balance Sheet (Rs mn)

Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Shareholders' Fund	6,453	7,645	8,688	9,979	11,494
Share Capital	98	98	98	98	98
Reserves & Surplus	6,356	7,547	8,590	9,881	11,396
Preference Share Capital	0	0	0	0	0
Minority Interest	0	0	0	0	1
Total Loans	816	703	603	503	403
Def. Tax Liab. / Assets (-)	370	434	420	420	420
Total - Equity & Liab.	**7,640**	**8,783**	**9,712**	**10,903**	**12,318**
Net Fixed Assets	3,073	4,598	3,444	3,739	4,003
Gross Fixed Assets	4,614	6,202	5,322	5,922	6,522
Intangible Assets	7	3	3	3	3
Less: Depn. & Amort.	1,752	1,917	2,191	2,497	2,833
Capital WIP	204	311	311	311	311
Investments	1,699	1,883	2,383	2,883	3,383
Current Assets	4,770	4,594	5,490	6,017	6,854
Inventories	755	1,127	1,258	1,478	1,684
Sundry Debtors	1,499	1,358	1,541	1,761	1,984
Cash & Bank Balances	287	481	1,064	1,151	1,560
Loans & Advances	1,309	706	706	706	706
Other Current Assets	920	921	921	921	921
Current Liab. & Prov.	1,903	2,292	1,606	1,736	1,921
Current Liabilities	1,181	1,145	1,262	1,393	1,578
Provisions & Others	721	1,147	344	344	344
Net Current Assets	2,868	2,302	3,884	4,281	4,933
Total – Assets	**7,640**	**8,783**	**9,712**	**10,903**	**12,318**

Source: Company, JM Financial

Cash Flow Statement (Rs mn)

Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Profit before Tax	1,156	1,840	1,808	2,201	2,595
Depn. & Amort.	201	165	274	305	336
Net Interest Exp. / Inc. (-)	-245	-306	-343	-389	-428
Inc (-) / Dec in WCap.	-51	825	-1,014	-309	-243
Others	0	0	0	0	0
Taxes Paid	-321	-456	-459	-557	-655
Operating Cash Flow	**740**	**2,068**	**266**	**1,251**	**1,605**
Capex	-341	-1,694	880	-600	-600
Free Cash Flow	399	374	1,146	651	1,005
Inc (-) / Dec in Investments	14	-184	-500	-500	-500
Others	-468	0	0	0	0
Investing Cash Flow	**-795**	**-1,878**	**380**	**-1,100**	**-1,100**
Inc / Dec (-) in Capital	0	0	0	0	0
Dividend + Tax thereon	29	-34	3	-32	-66
Inc / Dec (-) in Loans	204	-113	-100	-100	-100
Others	-171	148	34	69	70
Financing Cash Flow	**61**	**1**	**-63**	**-64**	**-97**
Inc / Dec (-) in Cash	**6**	**191**	**583**	**87**	**409**
Opening Cash Balance	281	287	481	1,064	1,151
Closing Cash Balance	287	477	1,064	1,151	1,560

Source: Company, JM Financial

Dupont Analysis

Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Net Margin	12.3%	15.8%	16.5%	17.3%	17.4%
Asset Turnover (x)	0.9	0.9	0.9	0.9	1.0
Leverage Factor (x)	1.2	1.2	1.2	1.1	1.1
RoE	13.5%	16.7%	16.9%	18.3%	18.7%

Key Ratios

Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
BV/Share (Rs.)	660.0	781.1	887.6	1,019.5	1,174.2
ROIC	13.8%	17.1%	18.6%	22.1%	24.3%
ROE	13.5%	16.7%	16.9%	18.3%	18.7%
Net Debt/Equity (x)	0.0	-0.1	-0.1	-0.1	-0.2
P/E (x)	36.2	25.7	21.9	17.7	15.1
P/B (x)	4.7	4.0	3.5	3.0	2.6
EV/EBITDA (x)	26.3	19.2	16.8	13.8	11.5
EV/Sales (x)	4.5	4.1	3.5	3.0	2.5
Debtor days	81	66	67	65	63
Inventory days	41	55	55	54	53
Creditor days	62	58	59	56	56

Source: Company, JM Financial

APPENDIX I

JM Financial Institutional Securities Limited

Corporate Identity Number: U65192MH1995PLC092522
Member of BSE Ltd. and National Stock Exchange of India Ltd. and Metropolitan Stock Exchange of India Ltd.
SEBI Registration Nos.: BSE - INZ010012532, NSE - INZ230012536 and MSEI - INZ260012539, Research Analyst – INH000000610
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Compliance Officer: Mr. Sunny Shah | Tel: +91 22 6630 3383 | Email: sunny.shah@jmfl.com

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Rating	Meaning
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Hold	Price expected to move in the range of 10% downside to 15% upside from the current market price.
Sell	Price expected to move downwards by more than 10%

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