INITIATING COVERAGE REPORT

Archean Chemical Industries Ltd.

August 27, 2024

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Initiating Coverage

Archean Chemical Industries Ltd

Building bromine ecosystem, Decent visibility of growth, Reasonable valuations

Archean Chemical Industries Ltd (ACIL) is the leading player in marine speciality chemicals manufacturing & exporting bromine, industrial Salts & SOP to its global customers. The company's competitive edge in the global market is because of its low cost & high efficiency processes, making it unique & standout player amongst its competitors. Our faith in the company's profitable business growth stems from the fact (a) Increased consumption of bromine in key end user industries like agro, pharma & appliances etc (b) Foray in downstream derivatives of bromine (BFR, CBF & PTA Catalyst) to increase its visibility, reach & boost earnings (c) Rectifying SOP technical difficulties will significant increase SOP business (45% revenue CAGR growth from FY24-27E) (d) Increasing customer base & expanding geographical reach (e) Best in class cost structure & margin profile, significantly different as compared to other chemical companies & access to raw material availability makes it preferred player (f) Strong FCF yield generation of ~2.4%/5.6% in FY24/FY27E (best in chemical industry). The company's recent expansion into bromine derivatives will propel earnings growth going ahead. The company aims to capture a larger part of bromine end user pie. The company has strong moats around its business which translates into superior return & margin profile for the company (FY24/FY27E Post tax ROCE of ~20/23% & EBITDA margin of ~35/36%). Longer client approval period, Access to brine reserves & developing customer relationship are the key moats which makes it difficult to replicate the business model of Archean. Also, the company has strong & marquee client base (Top 10 contributing 69% & Top 20 contributing 83%) and strong visibility in international markets led by its niche offering. Considering the future growth visibility of this net cash company, we initiate coverage with a BUY rating with a target price of Rs 1,158 per share.

Focus on downstream derivatives of bromine will increase the visibility of the company

- The company has set up a new facility for manufacturing bromine derivatives in its subsidiary Acume Chemicals Pvt Ltd. The company commissioned clear brine fluids & PTA catalyst whereas brominated flame retardants capex is put on hold considering underlying weakness in demand.
- The company has commissioned capacity of 18,000 TPA (13,000 TPA – Clear Brine Fluids & 5,000 TPA – PTA Synthesis) which has started contributing to volumes from Q1FY25. This facility is constructed on ~10 acres (approx. 34,983 square meters) parcel of land in GIDC, Ankleshwar.
- The total capex incurred is Rs1.4bn (Excl. flame retardants) out of the estimated ~Rs2.5bn and this is funded entirely through internal accruals. We expect asset turnover of over 3x for bromine derivatives business & 15-25% additional margins as compared with elemental bromine.

Industrial salt revenues to be led by volume growth

- The company's industrial salt has a capacity of 3.6 million tonnes per annum divided into 3 washeries each having a capacity of 200 tons/hr. The company is the largest exporter of industrial salt in India & exports 100% of its production primarily to China, Japan & South Korea.
- The company's strategic partner Sojitz Corporation is the largest customer which accounts for more than 40% (or 2.2 million tonnes) of industrial salt volume offtake. We feel this agreement provides very high visibility of faster ramp up in this business.
- The company also has ongoing contracts with its existing customers & is also looking to add more customers to diversify itself. Management has stated that company has received few new enquiries which is positive for the company.
- The company is expanding its capacity by 1.4 million (additional 2 more washeries) tonnes taking the total capacity to 5 million tonnes. With this capacity expansion, we expect industrial salt volumes to grow at a CAGR of 6% from FY24-27E & revenues to grow by 5% from FY24-27E.

Strong customer relationship, stickiness in business provides sustainable growth

- The company has developed strong clientele track record over the years & entering in long term contracts of (12 months or more) is itself a testimony of the relationship & confidence of the customer in Archean which has developed over time. Archean enjoys relationships of over 5 years with seven out of the top 10 customers.
- The company enters into fixed & long term contracts at agreed pricing for almost 3-4 months with domestic bromine customer, 12 months with international bromine customers & 12-24 months with industrial salt customers. This longer term contract implies stickiness & revenue visibility.
- The company's customer includes leading domestic & International MNC's such as Sojitz Corporation, Shandong Tianyi Chemical Corp, Unibrom Corp, Wanhau Chemicals and Qatar Vinyl Company Ltd.

Valuation

- A net cash company with strong entry barriers having strong relationship with its customers focusing on downstream expansion to diversify across the value chain. Increasing volumes & adding new range of product segments thereby catering to entire value chain in bromine cycle is a big positive.
- We expect Archean to report a CAGR of 23%/24%/26% at Revenue/EBITDA/PAT level over FY24-27E. Also, long term contracts with customers (more than 1 year), robust cash conversion cycle (less than 2 months) & sustainable 20-25% ROCE, strong balance sheet with net cash position of Rs3.3bn deserves rerating in multiple.
- The stock is trading at P/E of ~16.7x on Sept 26E EPS. We assign 25x as the target multiple and arrive at target price of Rs 1158 per share which is upside of ~50% from current valuations. We assign **BUY** rating on the stock.

Rating: BUY | **Return: ~50%**

Current Price: Rs 773 | **Target Price: Rs 1,158**

|Market data

Bloomberg:	ACI IN
52-week H/L (Rs):	838/510
Mcap (Rs bn/USD bn):	95.4/1.14
Shares outstanding (mn):	123.4
Free float:	46.0%
Daily vol. (3M Avg.):	1.33mn
Face Value (Rs):	2

Source: Bloomberg, SMIFS Research

|Shareholding pattern (%)

	Jun-24	Mar-24	Dec-23	Sep-23
Promoter	53.5	53.5	53.5	53.6
FIIs	9.5	5.9	4.2	2.9
DIIs	21.1	27.2	28.8	30.5
Public/others	15.9	13.4	13.5	13.0

Pro. Pledging

Pledging	4.6	4.6	4.6	0.0

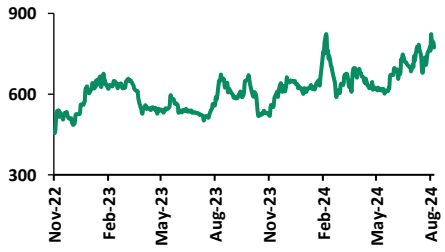
Source: BSE

|Price performance (%)*

	1M	3M	12M	36M
NIFTY 50	0.7	9.1	29.9	49.8
NIFTY 500	1.3	9.8	40.3	66.3
Archean	5.4	25.8	30.0	0.0

*as on 27th Aug 2024; Source: AceEquity, SMIFS Research

| Price Performance Chart*



*Source: NSE; *Since IPO*

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Y/E Mar (Rs mn)	Revenue	YoY (%)	EBITDA	EBITDA (%)	Adj PAT	YoY (%)	Adj EPS	RoE (%)	RoCE (%)	Adj P/E (x)	EV/EBITDA (x)
FY22	11,304	*52.6*	4,672	*41.3*	1,882	*182.7*	*15.3*	*111.9*	*29.0*	NA	NA
FY23	14,411	*27.5*	6,340	*44.0*	3,826	*103.3*	*31.0*	*45.2*	*34.2*	18.9	11.1
FY24	13,301	*-7.7*	4,627	*34.8*	3,190	*-16.6*	*25.8*	*20.4*	*19.7*	22.9	15.2
FY25E	15,613	*17.4*	5,179	*33.2*	3,563	*11.7*	*28.9*	*19.3*	*18.7*	26.8	17.4
FY26E	20,857	*33.6*	7,179	*34.4*	5,041	*41.5*	*40.9*	*22.8*	*22.3*	18.9	12.1
FY27E	24,752	*18.7*	8,873	*35.8*	6,390	*26.8*	*51.8*	*23.5*	*23.1*	14.9	9.2

Source: Company, SMIFS Research Estimates

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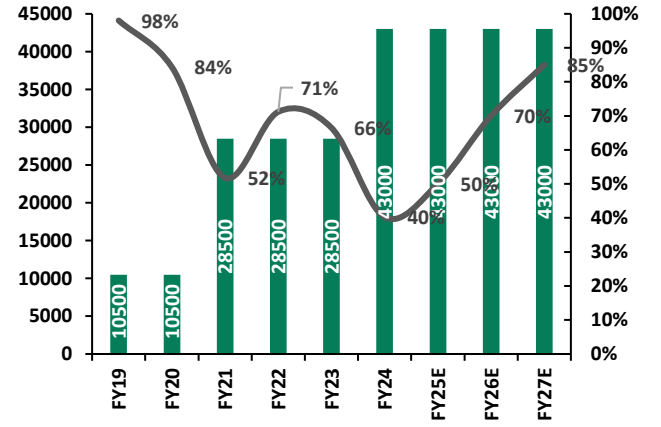
Investment Rationale

Expanding elemental bromine capacity majorly to cater to downstream derivatives

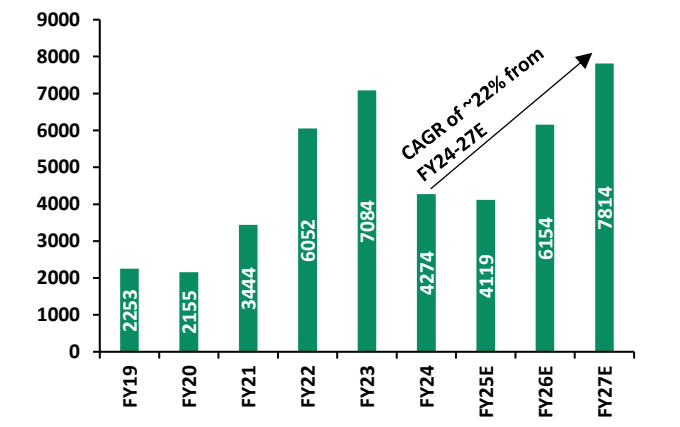
- Considering stronger demand growth in high end applications of elemental bromine the company has expanded its elemental bromine capacity from 28,500 TPA to 42,500 TPA.
- Earlier, Archean had elemental bromine capacity of 10,000 TPA because of limited fund availability & high debt position which the company got restructured its debt and equity from PE player India Resurgence Fund & received additional funding to expand its capacity.
- The company had used feed enrichment strategy which improved bromine recovery from sea bittern. Hence, the company added 18,000 TPA capacity post which total capacity reached 28,500 TPA.
- The company embarked on another expansion in FY24, thereby increasing its capacity from 28,500 TPA to 42,500 TPA at an investment of Rs180-200mn. This incremental capacity expansion is done relatively at smaller investment because company has already incurred significant investment in sea bittern.
- We expect at peak utilization levels this will add Rs2.5-3bn at peak utilization levels (At current prices).
- We feel bromine capacity expansion is not a constraint as Archean is already under-utilizing the land used for brine field development. The company can go for more bromine extraction along with increasing the efficiency. Thus, availability of bromine is not a constraint for Archean.

Fig 1: Elemental bromine capacity & utilization



Source: Company, SMIFS Research Estimates

Fig 2: Bromine revenue to grow in double-digits *(In Rs mn)*



Source: Company, SMIFS Research Estimates

Fig 3: Key customers of bromine for Archean Chemical

Key Customer	Commencement Year
Unibrom Corp	2014
Chinese Trading Company	2014
Chinese Chemical Company	2015
Shandong Tianyi Chemical Corporation	2017

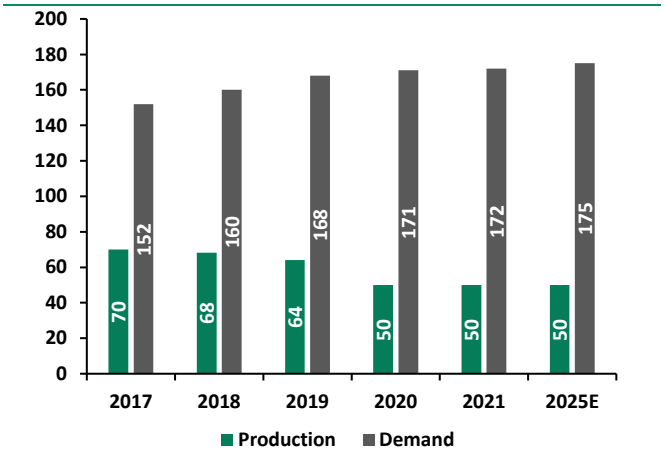
Source: Company Annual Report, SMIFS Research

- After reporting 36% YoY dip in elemental bromine revenues in FY24 partly because of volumes & largely because of realization, we anticipate 14% CAGR revenue growth from FY24-27E.

China – Majorly a Consumer, Not a competitor

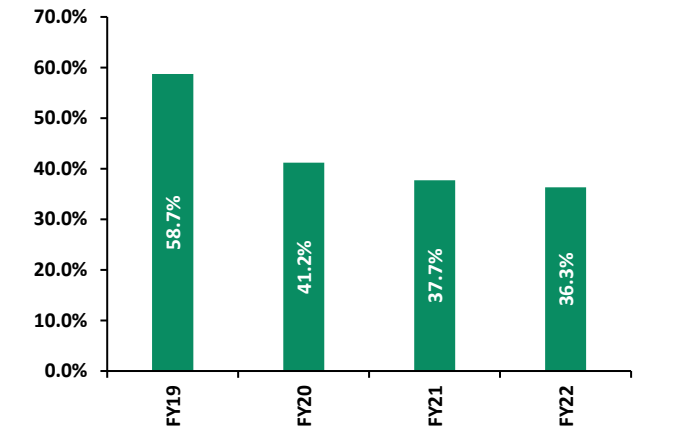
- In today's competitive landscape of the chemical industry, China often emerges as a formidable competitor. However, in the case of bromine, China plays a different role – that of a significant consumer.
- This dynamic shift of trend which benefits Archean is unique, as China stands as one of the largest consumers of Indian bromine.
- Since, China is expected to be the dominant and fastest-growing market for bromine in the Asia Pacific region, mainly due to the escalating demand for brominated flame retardants in the country. Electronic products, such as smartphones, TVs, wires, cables, etc recorded the highest growth in the electronics segment. The country serves not only domestic demand for electronics but also exports electronic output to other countries. In China, with the increase in the disposable income of the middle-class population and the rising demand for electronic products countries importing electronic products from China, the production of electronics is projected to grow.
- Hence, with the growing electronics and construction industry, the demand for the bromine-based flame-retardant application is expected to increase.
- The Chinese bromine production is expected to reduce to the tune of ~4% per annum driven by reduction in capacity owing to depleting resources like unavailability of high quality brines.
- The environmental issues and corresponding crack down by the authorities has also led to some production plants being shut due to regulatory scrutiny. This will lead to China importing more volumes of bromine which benefits Indian manufacturers exporting to China like Archean Chemical.
- Additionally, with the growth of China's electric vehicle market, there is an increasing demand for zinc-bromine flow batteries, presenting an additional market opportunity for Archean. The company's strategic positioning allows it to leverage China's demand without facing the fierce price competition that is typical in many other industries.

Fig 4: China's bromine production declined by ~4% from 2017-25E ***(in MT)***



Source: Frost & Sullivan, SMIFS Research

Fig 5: Archean export to Mainland China ***(In %)***



Source: Company, SMIFS Research

- We do not anticipate much increase in exports of elemental bromine, instead bromine derivatives like Brominated Flame Retardants, Clear Brine Fluids exports to China will be on the rise.

Shift from commoditized bromine to value added downstream business will be the growth driver

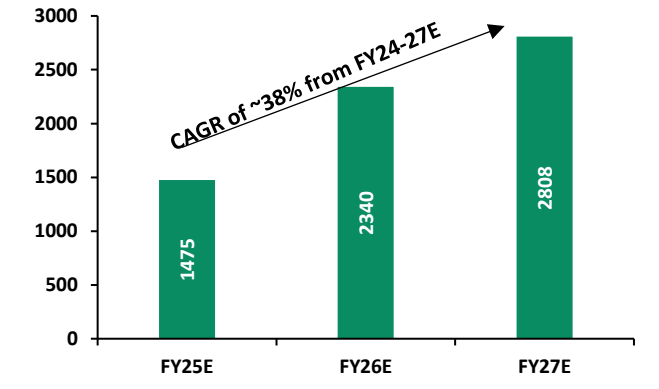
- Manufacturing & handling of elemental bromine is hazardous & also requires special dedicated ISO containers to transport which leads to higher logistics cost, hence, bromine derivatives are preferred which are relatively easier to handle & requires less freight.
- The company is setting up new facility for manufacturing of bromine derivatives in its subsidiary Acume Chemicals Pvt Ltd. The company is expanding into brominated flame retardants, clear brine fluids & PTA catalyst.
- The company has already installed capacity of 18,000 TPA (13,000 TPA – Clear Brine Fluids & 5,000 TPA – PTA Synthesis) which has started contributing to volumes from Q1FY25E. The flame retardants capacity of 10,000 TPA is put on hold, however, management has stated the company might take a call by H2FY25E to initiate the expansion.
- This proposed facility is being constructed on ~10 acres (approx. 34,983 square meters) parcel of land in GIDC, Ankleshwar.
- The total estimated capital expenditure for setting up this business is ~Rs2.5bn & out of this Rs1.4bn is already completed & remaining capex is largely for flame retardants. This capex is entirely funded through internal accruals. We expect asset turnover of over 2.5-3x for bromine derivatives business & 25-30% additional margins as compared with elemental bromine.
- The aim of the company is to forward integrate into value added segments which generate higher margins and become an integrated bromine player in India.
- Although, Flame retardants is kept on hold owing to uncertainties in demand in china, the business is on contractual terms. Also, with contracted volumes to the Chinese technology partner, the visibility of fast ramp up is very high.

Fig 6: Bromine derivatives capacity details and competition timeline

Particulars	Capacity Approved (in tonnes)	Completion timeline
Flame Retardants	10000	On Hold
Clear brine fluids	13000	Completed
PTA	5000	Completed
Total	**28000**	

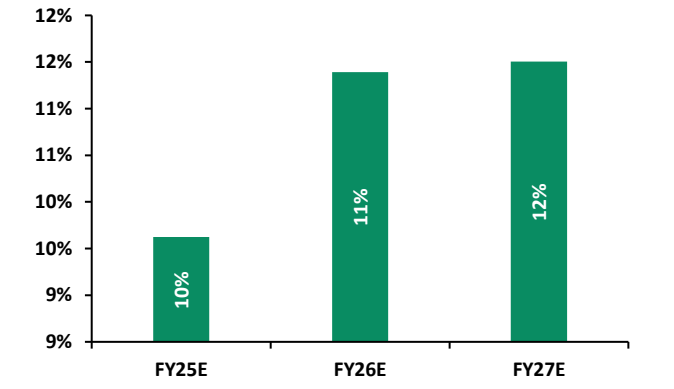
Source: Company, SMIFS Research

Fig 7: Bromine derivative revenue to grow exponentially in the coming years… ***(Rs in mn)***



Source: Company, SMIFS Research Estimates
Note: We have not considered flame retardants in our calculations for future estimates

Fig 8: …also contributes ~12% of revenue by FY27E ***(In %)***



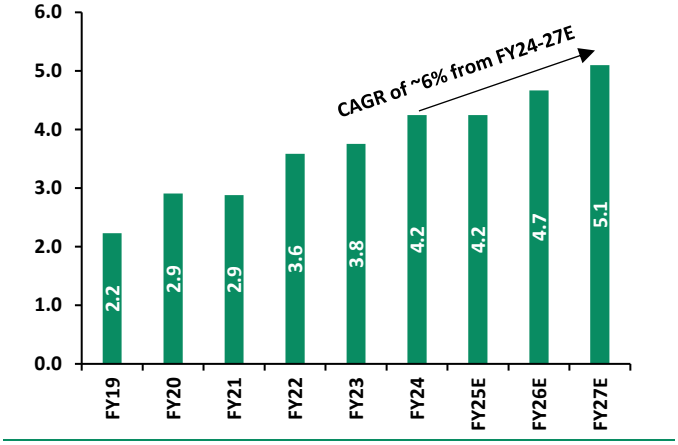
Source: Company, SMIFS Research Estimates

- At full utilization level, we expect elemental bromine consumption of 3-4K tonnes & combined bromine derivatives to contribute around 12% to overall revenues by FY27E. The assumptions are excluding flame retardants.

Industrial Salt revenues to be driven by volume growth

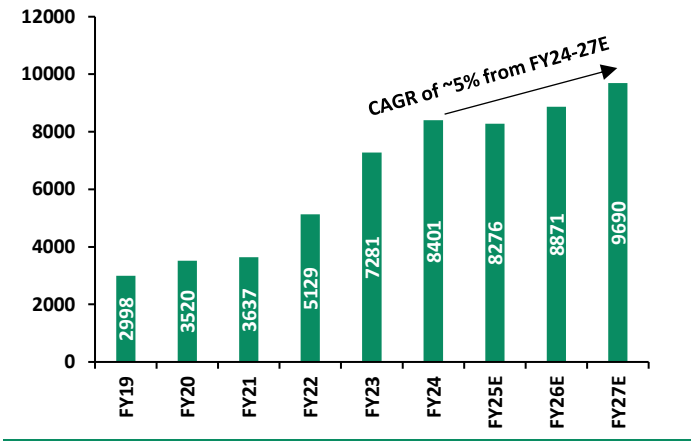
- Archean industrial salt has a capacity of 3.6 million tonnes divided into 3 washeries each having a capacity of 200 tons/hr. The company is the largest exporter of industrial salt in India & exports 100% of its production primarily to China, Japan & South Korea.
- The company strategic partner Sojitz Corporation is the single largest customer which accounts for more than 40% (or 2.2 million tonnes) of industrial salt volume offtake. We feel this agreement provides very high visibility of faster ramp up in this business.
- The company also has ongoing contracts with its existing customers & is also looking to add more customers to diversify itself. Management has stated that company has received few new enquiries which is positive for the company.
- Generally, Industrial salt primarily finds its application in caustic soda and soda ash on a global basis. But the fluctuation in prices of caustic doesn't impact much to Archean because they are primarily driven by chlorine end user industries, hence volatility in chlorine prices might impact the company.
- Although there are many players in the industrial salt export business, there are only limited number of exporter having volumes greater than 1 million MT & amongst them Archean is the largest exporter. The company also benefits from its proximity to the captive Jakhau Jetty & Mundra Port from where it transports industrial salt to its customers.
- Also, Archean cost of production of industrial salt is $5.5-6/ton which is significantly lower than its peer of $12-15/ton thanks to the proximity of the Jetty & differentiated salt manufacturing process (Evaporation method).
- In Industrial salt business more than half the volume is contracted. The remaining part have shorter-term nature contracts.
- The company is expanding its capacity by 1.4 million (additional 2 more washeries) tonnes taking the total capacity to 5 million tonnes.

Fig 9: Industrial salt volumes to grow in mid-single digit over the coming years… ***(in Mn Tons)***



Source: Company, SMIFS Research Estimates

Fig 10: …Revenue to grow at CAGR of ~5% from FY24-27E ***(in Rs mn)***



Source: Company, SMIFS Research Estimates

Fig 11: Key customers of industrial salt for Archean Chemical

Key Customer	Commencement Year
Sojitz Corporation	2013
Chinese Chemical Company	2017
Indian Trading Company	2018
Wanhua Chemical	2018

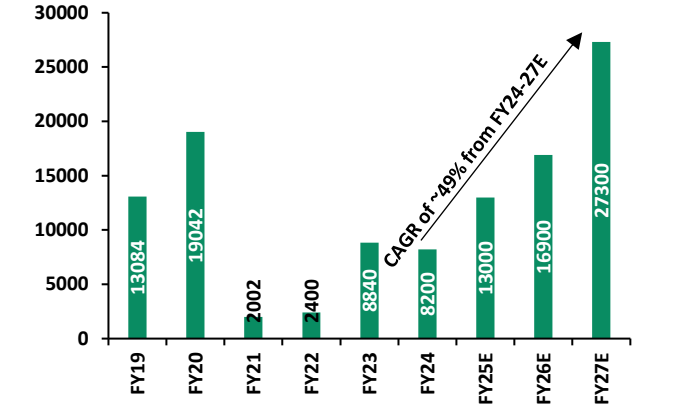
Source: Company Annual Report, SMIFS Research

- With this capacity expansion, we expect industrial salt volumes to grow at a CAGR of ~6% from FY24-27E & revenues to grow by ~5% from FY24-27E.

Challenges behind, Visibility in sight, SOP volumes to ramp up going ahead

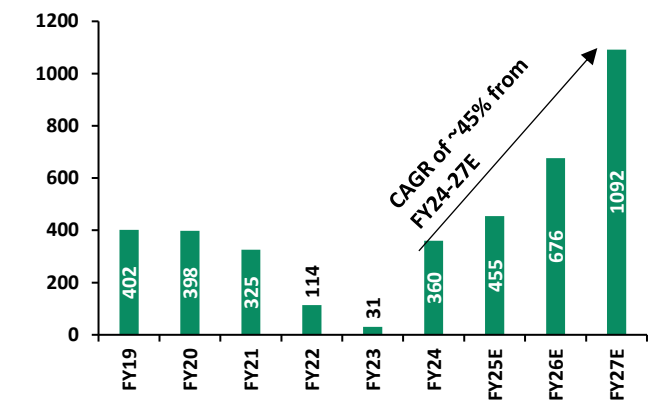
- Archean is the only manufacturer of SOP from natural sea brine in India having a capacity of 1,30,000 TPA. The plant is operating at mere ~6% utilization as on FY24.
- SOP volumes is operating at mere negligible utilization levels in last 2-3 years because of lower yield of SOP from KTMS (Kainite Type Mixed Salt) which impacted volumes.
- The major reason for lower SOP yield is because of higher NaCL content. Generally, recovery of SOP depends on KCL & NaCL content. Lower NaCL content yields better production but in case of Archean it was vice-versa. However, corrective steps has been taken like (A) Change of precipitation method from parallel to series mode in the crystallizers. (B) Upgradation of facility & floatation circuit. All such changes will benefit the company positively & increase its overall production in the coming years.
- SOP is proven to improve not only yield but also many important quality parameters such as sugar content, firmness, vitamins and storage quality. Today, many high value cash crops, such as tropical fruits or vegetables are increasingly produced for overseas export markets and fetch above average prices. In order to exactly meet the stringent quality requirements of consumers, farmers and the processing industry, a top-quality fertilizer like SOP is necessary.
- We understand most of the process related uncertainty is now behind & expect substantial improvement in volumes over the next 5-6 years.
- Recently the company commissioned pilot plant trial at German technology provider's lab & larger sample has been shipped and a larger test has being conducted & company has started working on second grade SOP wherein company is in the process of getting certified in Indian market & see encouraging signs in export market.

Fig 12: Significant jump in SOP utilization, leading to volume CAGR growth of ~49% from FY24-27E… ***(In MT)***



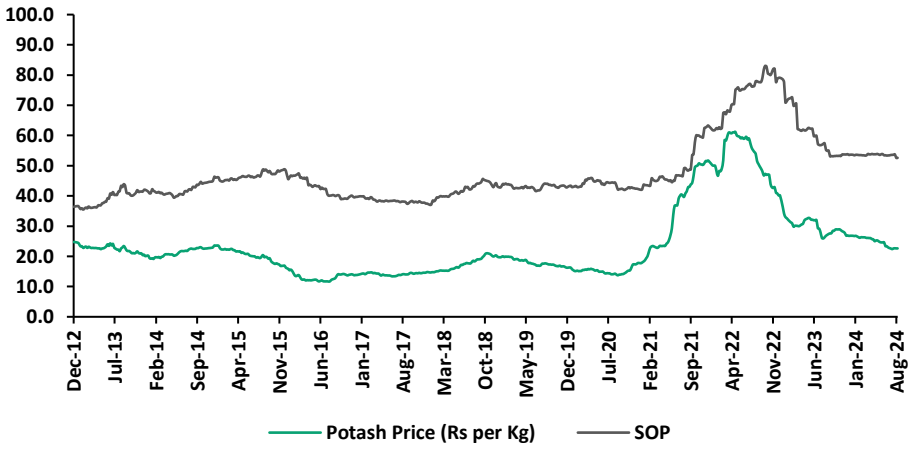
Source: Company, SMIFS Research Estimates

Fig 13: …Stronger volumes to lead robust revenue CAGR growth of ~45% from FY24-27E ***(In Rs mn)***



Source: Company, SMIFS Research Estimates

Fig 14: SOP vs Potash Prices ***(In Rs per kg)***



Source: Company, SMIFS Research

High entry barriers and competitive strength of Archean puts it ahead in the stage

- At first, to set up a bromine manufacturing unit, it requires access to its own high quality brines. There are big land parcels & high quality brines only in Rann of Kutch district in Gujarat. As per our understanding a significant portion of the land is already under control by few players like Archean & other players. Hence, because of unavailability of the same there are strong entry barriers in bromine manufacturing business which is nearly impossible for any other new player to enter into this business.
- We list below some of the parameters which justifies our high entry barrier argument:
  - **Long Gestation Period:** Archean operates in an industry which has intricacy of product development, manufacture and investment in salt beds along with limited availability of raw materials necessary for production & limited number of locations with a suitable climate and access to reserves and the lead time and expenditure required for R&D and building customer confidence and relationships, which can only be achieved through a long gestation period.
  - **Unavailability of raw material & development of brine field acts as real entry barrier:** The high quality mines of brine used as raw material to make bromine are only in Rann of Kutch in Gujarat which is already in the control of few players. Hence, it is nearly impossible to make bromine without brine access which restricts entry of any new player in this business. Also, existing brine fields used by Archean were established over a period of 3-4 years before commercial cultivation was possible and, accordingly, the development time of brine reservoirs creates further entry barrier to potential domestic competitors.
  - **Special expertise needed for bromine:** Usually, bromine transport requires nickel and lead lined ISO tankers which are to be handled by skilled personnel. Generally, every bromine ISO tank is required to be checked annually by an inspector of an internationally authorized expert body which increases the compliance for any new manufacturer. Generally, bromine and certain raw materials used are highly corrosive, hazardous and toxic chemicals. Therefore, handling these chemicals requires a high degree of technical skill and specialized expertise.
  - **High capital requirements makes it difficult for small player:** Bromine & Salt business is a chemistry wherein manufacturing is capital intensive along with high working capital requirements and continuous investment in R&D. Bromine & Salt business offers low potential turnover of 1x and product having high chances of being rejected in the early stage of manufacturing. Thus, initial investment in bromine & Salt is high which almost nullify the chances of small players to enter into this niche chemistry who do not have the appetite for high investment.
  - **Strong R&D requirement:** Bromine & Salt business requires high quality standards and rigorous product approval systems with stringent impurity specifications. All products go through various stages of testing, validation. In order to remain ahead of the curve in developing new variants of bromine derivatives, maintain high quality and ensure complete satisfaction of clients, R&D is the need for any Bromine & Salt business.
  - **Marquee client's base puts it ahead on the stage**: Archean customers are well diversified in sectors like electronics, textiles etc which have high standards for product quality and quantity as well as delivery schedules. Any failure to meet customers' expectations could result in the cancellation or non-renewal of contracts. Archean has 13 global customers in 13 countries and 29 domestic customers which it has developed strong relationship over the years. Although, major volumes of the Archean are contracted and dependent on few customers but they ensure long term visibility for Archean.

- Considering the above entry barrier argument, we feel that it is very difficult to even compete or dislocate player like Archean Chemicals in Bromine & Salt business. **Archean fits in an old saying "The Strong gets Stronger".**

Archean leads the Indian Bromine industry, expansion will cement its position

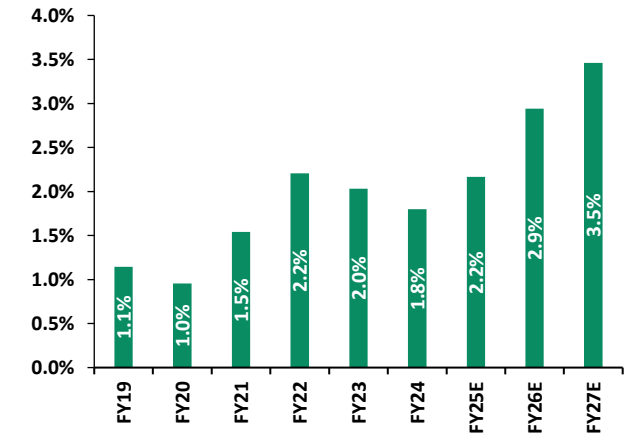
- Archean Chemical commands leadership position in Indian bromine merchant sales which are traded bromine in market based on bromine production and captive consumption.
- The company is the leading bromine supplier in India as well the biggest exporter of bromine from India. Archean has leadership position in bromine exports from India with highest market share over the last 3 years. Archean has a ~35% market share in the Indian bromine production as on FY24.
- Sea bittern obtained in Kutch has very good contents of bromine and can be used for bromine manufacturing. Most important factor to consider is Bromine concentration in brine for a plant to operate profitably. The area for feed is limited to Rann of Kutch which is 200km x 200km 7 meter deep sponge with 40% porosity. BSF permission is essential to access the sponge. All the existing players have taken up the most feasible area available in the region. Accordingly, or any new plant, availability of rich raw material is a concern. This effectively creates entry barrier for new players.
- With the expansion of bromine capacity to 42,500 TPA, Archean Chemical is likely to cement the leadership position.

Fig 15: Elemental bromine domestic player wise split of capacity and production details ***(In KT)***

Key Manufacturers	Location	Annual Capacity	Production Numbers	Captive Consumption	Net Merchant Sales
Archean Chemical Industries	Hajipir, Kutch District	42.5	14.8	0.0	14.8
Satyesh Brine Chem	Hajipir, Kutch District	25.0	3.0	0.0	3.0
Solaris ChemTech Industries	Khavda, Gujarat	23.5	19.0	10.5	8.5
Agrocel Industries Pvt.	Greater Rann of Kutch				
Nirma	Near Bhavnagar in Gujarat.	3.0	2.0	2.0	0.0
Tata Chemicals	Mithapur, Gujarat	2.4	1.0	1.0	0.0
Dev Salt Private	Morbi district of Gujarat	2.5	1.0	0.0	1.0

Source: Company DRHP, SMIFS Research

Fig 16: Gradual increase in global market of elemental bromine of Archean



Source: Industry, SMIFS Research Estimates

Fig 17: Archean market share in elemental bromine exports

Source: Industry, SMIFS Research Estimates

- With decline in volumes, global market share declined from FY22-24, however, now with expansion in capacity & ramp up of volumes, we expect market share to inch up & be at the highest levels in FY27E as compared with over the past 5 years.
- On the exports front, Archean has the highest market share, although declining for the past few years but is expected to inch up again led by addition of bromine derivatives, ramp of elemental bromine & Industrial Salt volumes.

Archean focussed to build global customer base and enter new geographical markets

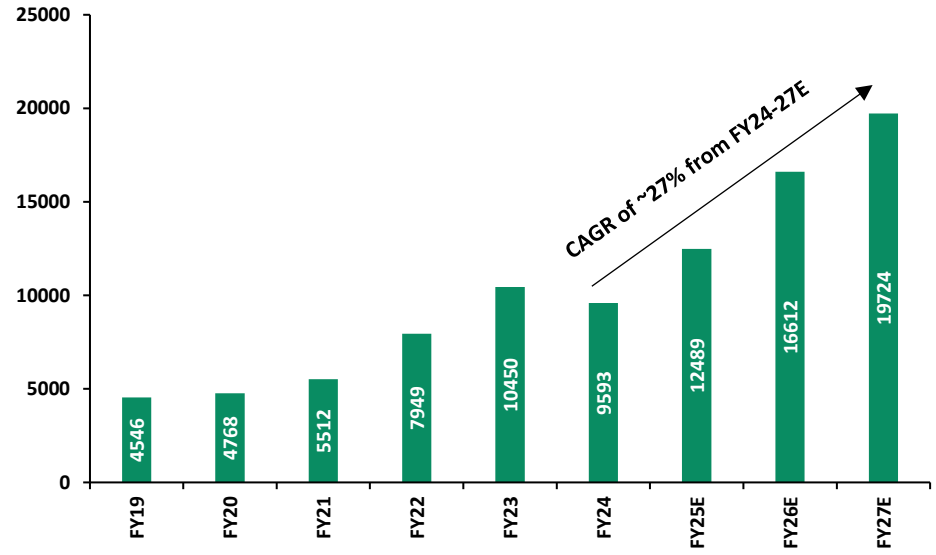
- The company export its products to 42 global customers in 13 countries & also to 30 domestic customers. Some of the key geographies which Archean export include China, Japan, South Korea, Qatar, Belgium and the Netherlands. The company enjoy relationships in excess of five years with seven out of our top ten customers.
- The company faced demand volatility led by heightened geopolitical tensions & with export market slowing down in FY24, we feel most of the pain is in the numbers. We anticipate healthy volume growth because of restocking and adding more customers. Management stated that they witnessed some positive traction in volume uptake given the situation in Israel & Hamas.
- The Israel Hamas conflict has led to Archean as the key beneficiary because global customers look to diversify their supplies outside Israel thereby, potentially increasing export business for Archean. Israel Chemicals is the largest bromine producer in Israel & in the globe & any major disruption in supplies could had triggered Bromine prices benefitting other bromine manufacturers but subsequently it cooled off.
- The company also intends to focus on increasing its wallet share with existing customers in international markets.

Fig 18: Exports geographies breakup

	FY19	FY20	FY21	FY22
India	19.6%	21.6%	25.6%	29.7%
Japan	7.0%	12.2%	10.1%	6.2%
China	58.7%	41.2%	37.7%	36.3%
South Korea	1.2%	9.8%	12.5%	5.6%
Rest of Asia	6.6%	8.8%	10.2%	19.5%
Europe	7.0%	6.4%	3.9%	0.9%
Africa	0.0%	0.0%	0.0%	1.8%

Source: Company, SMIFS Research

Fig 19: Export Revenue to grow at CAGR of ~27% from FY24-27E ***(In Rs mn)***



Source: Company, SMIFS Research Estimates

Strong customer relationship, stickiness in business provides sustainable growth

- The company has developed strong clientele track record over the years & entering in long term contracts of (12 months or more) is itself a testimony of the relationship & confidence of the customer in Archean which has developed over time.
- Archean enjoys relationships of over 5 years with seven out of the top 10 customers.
- Long standing relationship with customer also have helped the company to expand its product offerings and geographic reach. For other customers, it instead relies on purchase orders to govern the volume and other terms of its sales of products. Many of the purchase orders the company receive from its customers specify a price per unit and delivery schedule.
- The company enters into fixed & long term contracts at agreed pricing for almost 3-4 months with domestic bromine customer, 12 months with international bromine customers & 12-24 months with industrial salt customers. This longer term contract implies stickiness & revenue visibility over the longer term.
- The company's customer includes leading domestic & International MNC's such as Sojitz Corporation, Shandong Tianyi Chemical Corporation, Unibrom Corporation, Wanhau Chemicals and Qatar Vinyl Company Ltd.

Fig 20: Client concentration of Archean

	FY20	FY21	FY22	FY23	FY24
Sojitz Corporation (Largest customer)	31.9%	30.5%	20.6%	19.3%	27.0%
Top 10 customers	77.1%	75.7%	62.0%	60.7%	69.0%
Top 20 customers	92.1%	88.7%	80.9%	81.8%	83.0%

Source: Company, SMIFS Research

Fig 21: Elemental bromine domestic player wise split of capacity and production details

Source: Company Investor Presentation, SMIFS Research

- Sojitz Corporation is the single largest customer of the company constituting ~20-30% of total revenues which makes it vulnerable because dependency on a single client is the highest but it also increases revenue visibility as it enters into very long term contracts (12-24 months) with the customer.

Integrated Production Facility at Gujarat, Locational advantage, Tax Benefits, Stronger R&D, Best in class Regulatory Standards all combined makes it a strategic play

- Archean use brine from own reservoirs as raw material which include Industrial Salt, kainite and end bittern. Other raw materials are primarily sourced from third-party suppliers in India.
- The company's facility and its surrounding salt fields and brine reservoirs span ~240 square km. Till date, the manufacturing facility had an installed capacity of 42,500 TPA of Bromine, 3.6 million tonnes per annum of industrial salt and 1,30,000 TPA of Sulphate of Potash.
- Globally, two most popular Bromine production sites are near the Dead Sea (Israel & Jordan) and the underground well in Arkansas region in the USA, India is well placed with brine resources at the Great Rann of Kutch in Gujarat.
- The manufacturing facility is located in close proximity to the Jakhau Jetty and Mundra Port. The Jakhau Jetty is a fair-weather facility, operating for seven to eight months a year from October to May.
- The company has a designed capacity of 5 million tonnes per annum and a capacity to load 42,500 TPA equipped with a twin conveyor system, diesel generator sets.
- Also, integrated manufacturing site with access to the Rann of Kutch reserves and a close connectivity to ports, results in production process efficiency, deliver superior quality and timely products.

Fig 22: Locational Advantage

Source: Company , SMIFS Research

Fig 23: Best in Class R&D support

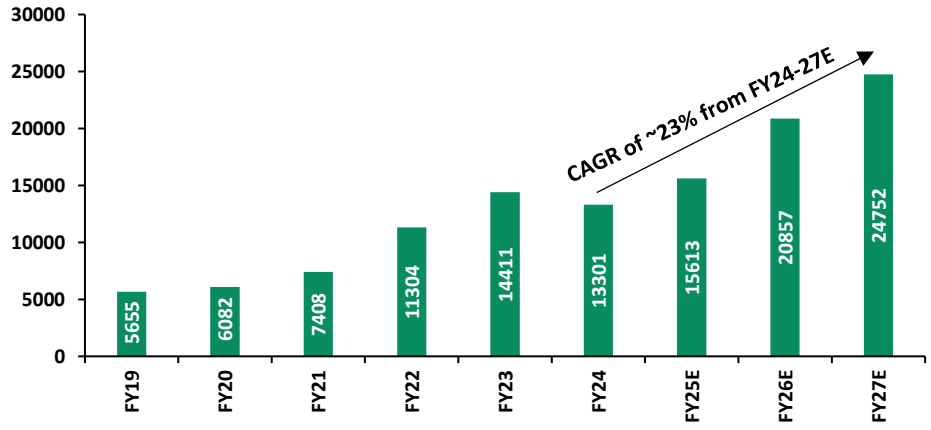
Source: Company, SMIFS Research

- **Tax Benefits in Subsidiary:** The company is expanding bromine derivatives in its subsidiary Acume Chemicals Pvt Ltd which was incorporated on November 2021. The subsidiary is subject to concessional tax rate of 15% under the Income Tax Act.
- **Strong R&D support for new chemistry:** The company undertakes continuous effort to evaluate the brine chemistry. R&D facility has been set up in Gujarat, Jhagadia for bromine downstream project.
- **Strong Industry Standards & Regulatory Credentials:** The company is accredited four star export house by Director General of Foreign Trade, Ministry of Commerce and Industry, Government of India. The company is a Member-signatory to Responsible CARE – Indian Chemical Council. The company has **REACH** certification enabling the company to export Sulphate of Potash products to its European customers.

Revenue growth to remain robust primarily driven by volume growth

- Archean reported revenue growth CAGR of 22% from FY21-24 because of higher utilization & realization in bromine & salt, increased exports footprint, addition of new clients & increasing wallet share with existing ones & rupee depreciation benefits.
- In FY21, the company completed its expansion in bromine capacity from 10.5KTPA to 28.5KTPA (Capex of Rs1.6bn) which has contributed to stronger volume growth of 67%/38% in FY21/22 respectively.
- Exports grew at ~20% CAGR from FY21-24 because of moderation of bromine production in China & US owing to depletion of raw material resource & receding water levels in Dead Sea has benefitted Archean.
- Going ahead, the company is starting its greenfield project of bromine derivatives which will further increase its visibility & reach to global customers.
- With bromine derivatives contributing to revenues from Q1FY25, we anticipate robust uptick in revenue profile going ahead. We forecast ~12% of top-line contribution from bromine derivatives at peak utilization levels by FY27E (Excluding Flame Retardants).
- Overall, revenue growth is expected to remain healthy growing at ~23% CAGR from FY24-27E because of higher volume offtake from bromine, salt & SOP business, incremental revenues from bromine derivatives business & continued focus on exports market. Exports is expected to grow by ~27% CAGR from FY24-27E.
- We feel Archean is at an inflection point having macro in its favour, increased capacity & rising exports will be the key triggers going ahead.

Fig 24: Revenue to report ~23% CAGR growth from FY24-27E ***(Rs in mn)***



Source: Company, SMIFS Research Estimates

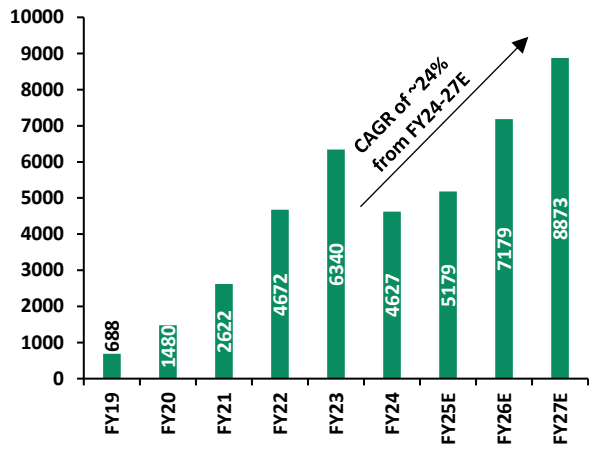
Stronger EBITDA & operating margins led by operating leverage benefits

- Archean cost structure & margin profile is significantly different from a regular chemical company. It has one of the lowest cost of production globally, in both bromine & Salt as it sources major raw materials from its brine reserves situated in Rann of Kutch.
- EBITDA declined by 27% YoY in FY24 because of decline in realizations of bromine, weak global demand, inventory de-stocking etc. Despite this, a 3 year CAGR depicts Archean EBITDA grew 21% because of decline in Chinese production supporting production volumes & realizations, increased exports business & addition of new customers.
- Archean has one of the best gross margin profile in entire chemical industry ranging 95-99% over the last few years as majority of its raw materials are captively sourced from its brine fields. The only major cost for the company is (A) Power & fuel cost (nearly 9-9.5%) & (B) Packing & freight expenses which is nearly 30-35% of sales.
- In FY24, owing to higher freight & power cost, other expenses stood at ~53% of sales vs average 51% of last 2 years. With bromine derivatives expansion & easing of geopolitical tensions we expect power cost, logistics & freight cost to normalize going

ahead. Since, elemental bromine is hazardous & required dedicated ISO lined containers, hence, bromine derivatives is preferred as it lowers freight cost.

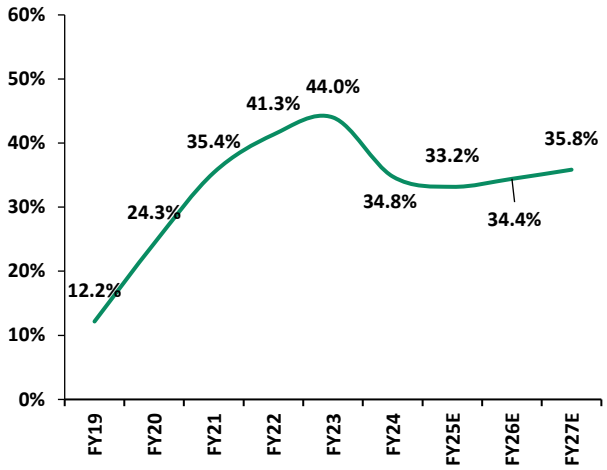
- Therefore, with operating leverage benefits we expect EBITDA margins to be ~36% for FY27E (an improvement of ~106bps from FY24-27E).

Fig 25: EBITDA to grow at CAGR of ~24% from FY24-27E
(Rs in mn)



Source: Company, SMIFS Research Estimates

Fig 26: Focus on downstream bromine will maintain EBITDA margins at good levels going ahead

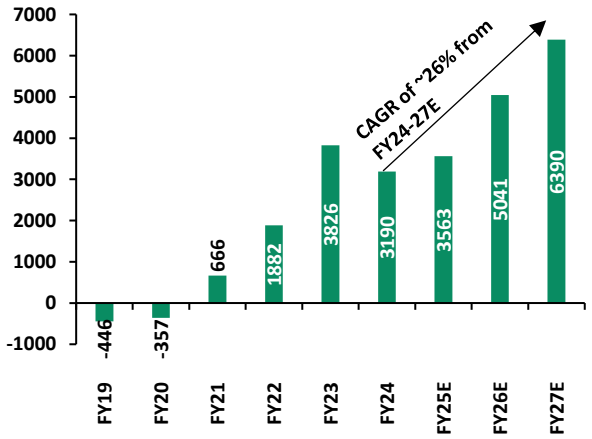


Source: Company, SMIFS Research Estimates

PAT to report stronger growth over FY24-27E

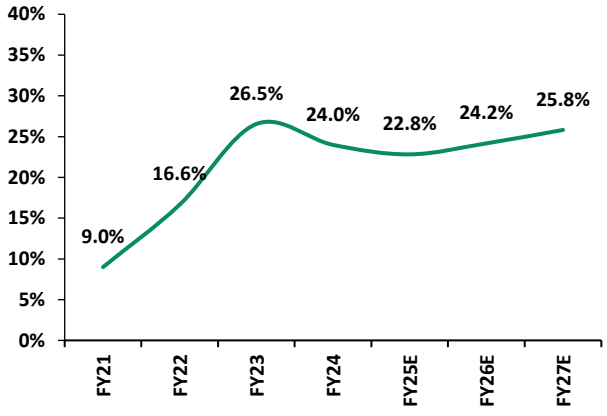
- Despite Revenue/EBITDA growing by ~22%/21% from FY20-24, PAT grew by 69% in the same period because of lower finance cost. The company had total debt of Rs8.5bn till FY22 & post IPO proceeds complete debt repayment has been done which led to finance cost decline from Rs1.6bn in FY22 to mere Rs84mn in FY24. This led to steep rise in profits.
- The company has very lean balance sheet with net cash of Rs3.4bn, commendable working capital cycle & stronger visibility of growth.
- In line with EBITDA CAGR growth of 24%, we expect PAT to grow at CAGR of ~26% from FY24-27E and PAT margins to be around ~26% by FY27E.

Fig 27: PAT to report growth of ~26% from FY24-27E
(Rs in mn)



Source: Company, SMIFS Research Estimates

Fig 28: PAT margins to hover at ~26% by FY27E



Source: Company, SMIFS Research Estimates

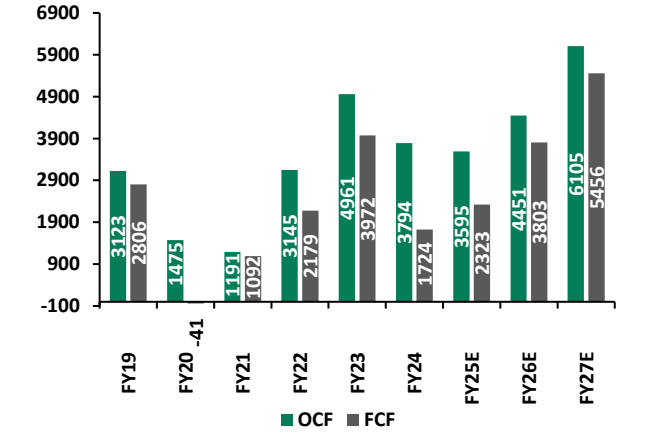
Strong operating cash flow & FCF generation augurs well

- The company operating cash flow has been quite strong since last 3 -4 years. OCF yield has been around 5-7% in FY23 & FY24. OCF to revenue is around 0.4x. OCF generation has always been much higher than profit generation because of control in working

capital cycle. This gives us the confidence in the company's business model and cash flow generation. As Archean expands into bromine derivatives, the cash flow quantum will further increase.

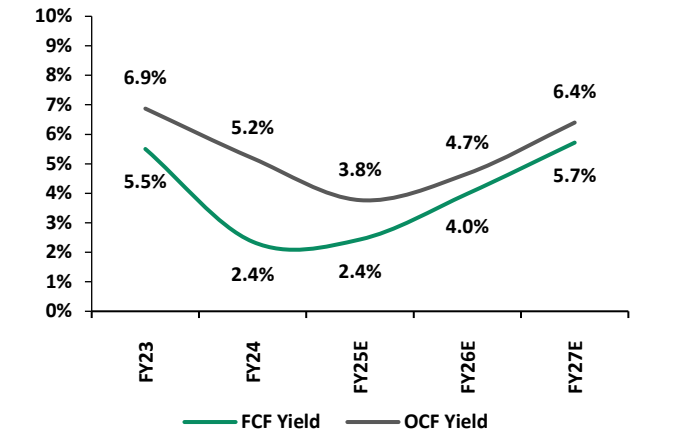
- The company has generated cumulative EBITDA of Rs19.74bn from FY20-24. OCF generation during the same period stood at Rs15.9bn. This indicates the company has generated average 0.8x OCF to EBITDA. In FY24, the company generated 1.1x OCF to EBITDA & we expect it to average around 1x from FY24-27E.
- The company reported highest ever FCF of Rs3.95bn in FY23, thereafter, higher outflow towards capex for bromine derivatives led to decline in FCF to Rs1.7bn in FY24. The company has generated cumulative FCF of Rs8.9bn from FY20-24. Our analysis of FCF suggest that company has generated an average of 97% FCF of profit from FY20-24 indicating strong conversion of profit to FCF generation.

Fig 29: Strong cash flow generation augurs well



Source: Company, SMIFS Research Estimates

Fig 30: Robust OCF & FCF yield

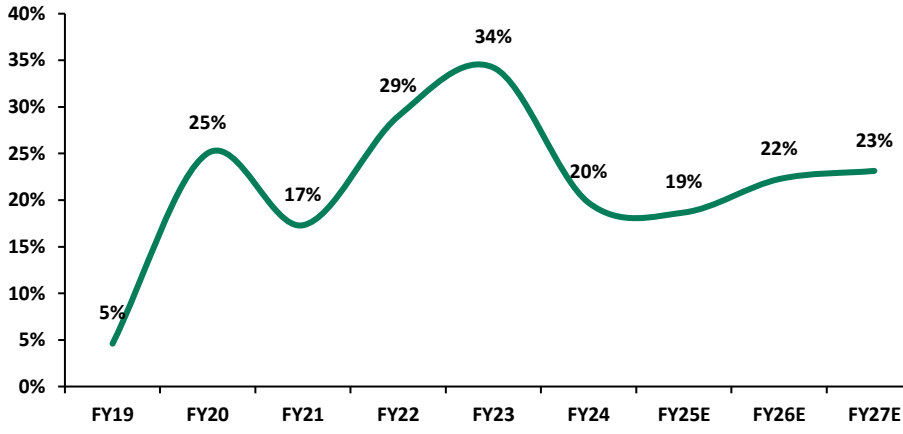


Source: Company, SMIFS Research Estimates

Return ratios witnessed steep decline in FY24, to improve going ahead

- After reporting very strong return ratios for the last 2 years of around 30-35% ROCE led by robust macros & stronger realizations of bromine etc, FY24 return ratios dipped to 20% because of weakened exports market, sharp dip in bromine & salt realizations & high competitive intensity.
- We expect major brunt of negative factors has already been taken and we see some improvement in ROCE from hereon led by improvement in demand, better realizations backed by bromine derivatives.
- We forsee gradual improvement in ROCE from 20% in FY24 to ~23% by FY27E.

Fig 31: After factoring in negatives, ROCE will only rebound in the coming years



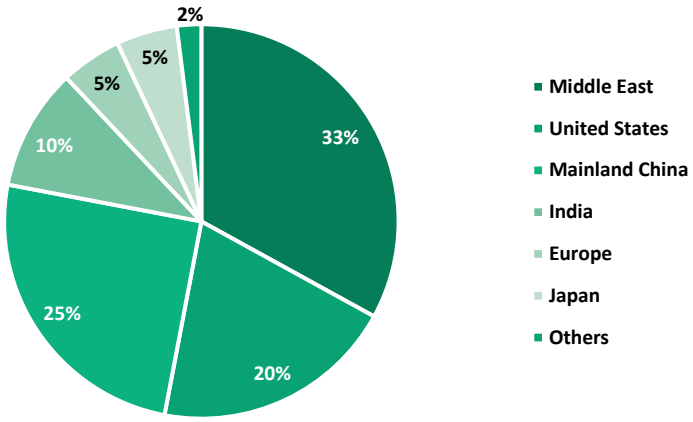
Source: Company, SMIFS Research Estimates

Industry Snapshot

Bromine: A niche industry to play

- Bromine is a halogen chemical element. Bromine is a reddish-brown liquid with an appreciable vapour pressure at room temperature. Bromine vapour is amber in colour.
- Like the other halogens, bromine exists as diatomic molecules in all aggregation states. It is widely used as a reactant and catalyst for manufacturing a variety of products, such as agrochemicals, biocides, water disinfectants, pharmaceuticals intermediates, dyes, completion fluids, flame retardants, and photographic chemicals.

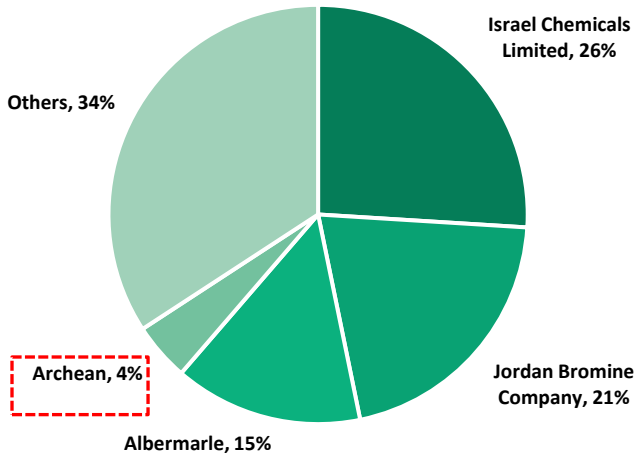
Fig 32: World consumption of Bromine (2021)



Source: Company, SMIFS Research

- Bromine is a naturally occurring element. The most recoverable form of bromine is from soluble salts found in seawater which is the chief commercial source, salt lakes, inland seas and brine wells. Bromine is produced from brine after separation of most of the sodium chloride and potash. Bromine in much higher concentrations are found in inland seas and brine wells. Much of the bromine and brominated compounds are manufactured at the Dead Sea in Israel, Jordan and in the United States.
- Across the globe, 3 bromine producers (Albemarle, Jordan Bromine and Israel Chemicals) accounted for ~61% of the global bromine production. Producers in mainland China, India, and the CIS countries are much smaller. Major producers are highly integrated, producing a wide variety of brominated end-use chemicals and intermediates, primarily from bromine or from hydro bromic acid produced as a by-product of bromination.

Fig 33: Top 3 producers (Excluding Archean) account for ~61% of total bromine production



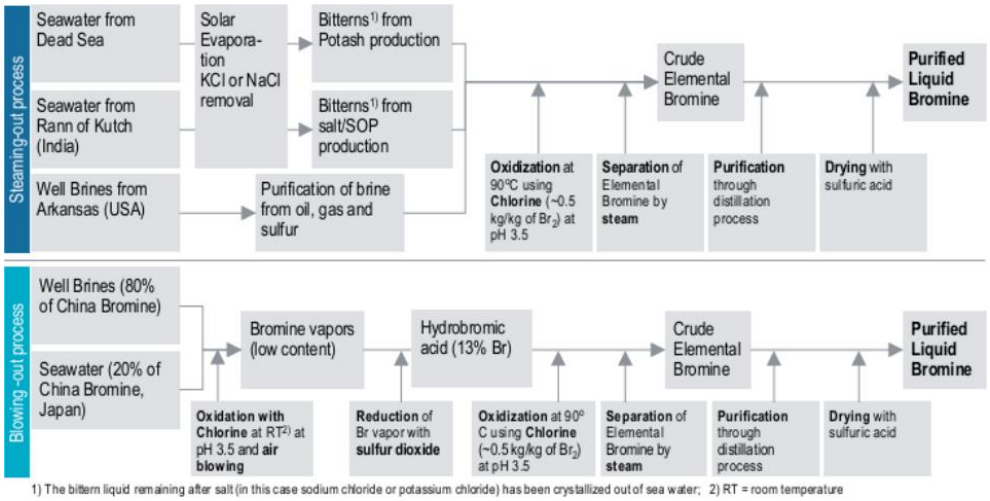
Source: Company, SMIFS Research

Manufacturing Process & Production Cost of Elemental Bromine

Manufacturing Process

- The technical know-how and technology for Archean bromine plant was provided by a German engineering company pursuant to a technology transfer agreement. The produce liquid bromine with specifications of < 30 ppm of moisture. There are generally two processes for bromine production: (i) the steaming out process and (ii) the blowing-out process. The type of process utilized is largely dependent on access to brine and the feedstock grade (i.e., grams of bromine/litre of brine). The steaming-out process typically requires a minimum feedstock more than two grams of bromine/litre of brine and is less energy intensive, while the blowing out process may use a lower feedstock grade as air is used for blowing out the bromine. Archean operates and utilize the steaming-out process.

Fig 34: Manufacturing process of bromine



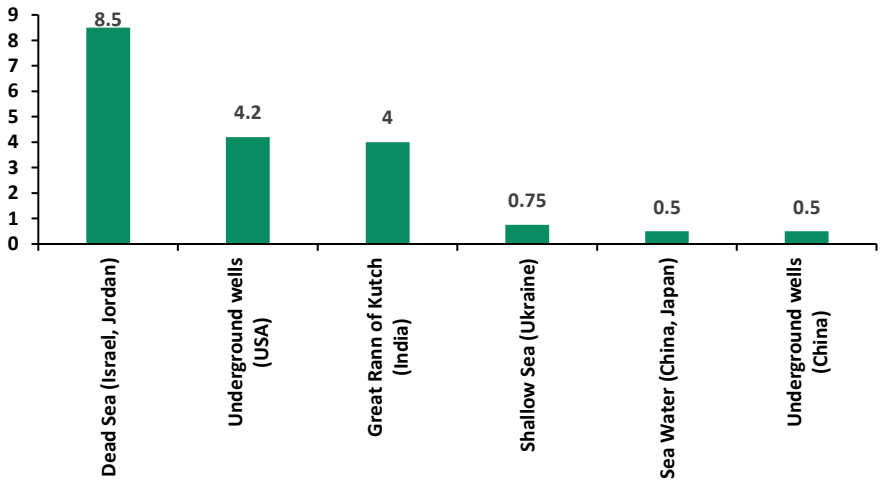
Source: DRHP, SMIFS Research

- As of December 31, 2023, Archean elemental bromine installed capacity stood at 42,500 TPA & it is looking to further augment the capacity to 52,500 TPA by 2026E.

Production Cost

- A typical cost of production of elemental bromine is approximately US$500-600 per MT for Israel and Jordan, US$800-1,000 per MT for Arkansas, US$ 900-1,100 per MT for India, US$ 1,500- 1,700 per MT for China and USD 2,500 or above per MT for Japan. Considering the lower cost of production of Israel and Jordon, they have largest production capacities and are market leaders in bromine production.

Fig 35: Global natural resources by bromine concentration ***(In PPM)***

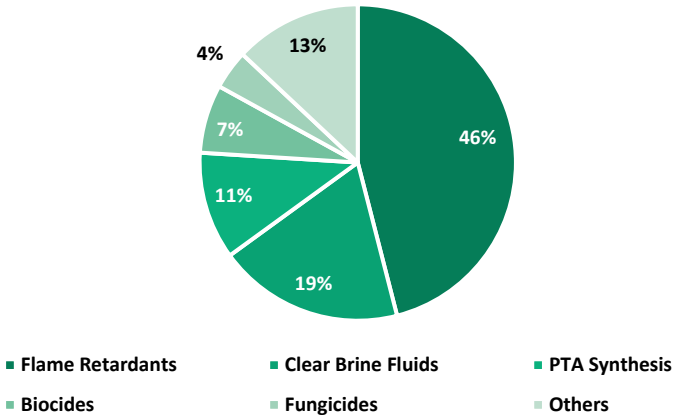


Source: Company DRHP, SMIFS Research

Diversified bromine applications

- Generally speaking, bromine finds applications in chemicals, rubbers, plastics, agrochemicals, oil and gas, pharmaceuticals, electronics, textiles and other industries. Specific applications of global bromine market can be classified into applications such as brominated flame retardants, clear brine fluids, biocides, brominated organic intermediates, fungicides and others.

Fig 36: Bromine application industry wise



Source: Company Investor Presentation, SMIFS Research

Fig 37: Growth rate of bromine end-user applications

End use application	Expected growth rate (2020 to 2025)
Flame Retardants	4.5-5%
Clear Brine Fluids	4.0-4.5%
PTA Synthesis	4.0-4.5%
Biocides	4.0-4.5%
Fungicides	4.5-5.0%
Others	4.0-4.5%

Source: Company, SMIFS Research

Let us understand each application in detail:

- **Bromine Flame Retardants (BFR's):** Elemental Bromine is commonly used in flame retardants due to its high atomic mass and its general versatility across a wide range of applications and polymers. There are more than 70 different types of BFRs with different properties (reactive, polymeric, halogenated, etc). Depending on the composition, nature and application of the materials or products that need to be rendered fire-safe, the correct type of flame retardants can be used. BFRs are commonly used to prevent fires in electronics and electrical equipment, which accounts for more than 50% of bromine application & the global electronic manufacturing industry is expected to reach $624 billion in 2025E from $526 billion in 2021, thereby, growing at the rate of 5.4% CAGR leading to healthy demand for BFR's. In addition, BFRs are used in wire and cable compounds, for example, for use in buildings and vehicles and other building materials, such as insulation foams. EU countries are focused on the implementation of stringent fire safety regulations in the automotive, electronics, consumer goods, and textile industries. Apart from the EU, countries across the globe also follow different fire safety standards and regulations. Therefore, it is important for the manufacturers of automobiles, electronics, consumer goods, and textiles to meet the fire safety regulations of the respective countries. These safety standards and regulations have, therefore, increased the demand for flame retardants globally. According to F&S Report, the global BFRs market is expected to grow at a CAGR of 6% from $1,460 billion in 2021 to $1,843 billion in 2025.

- **Clear Brine Fluids (CBF's):** Bromine is widely utilized in the oil & gas drilling industry in the form of clear brine fluids. The types of clear brine fluids are calcium bromide, zinc bromide, and sodium bromide fluids. Clear brine fluid is a chemical compound that is used at times along with additives in well completion operations to make the solids free from brines. These fluids are extensively used in the oil & gas well-drilling industry to reduce the likelihood of damage to the well bore and productive zone. Brine fluids have a high density, thus prevent migration of fluids between underground formations through the well bore. According to the F&S Report, the global clear brine fluids market is projected to grow at a CAGR of 3.6% from $1,073 million in 2021 to $1,236 million in 2025E.

- **Pure Terephthalic Acid (PTA):** PTA is the important source material for the production of polyester. A majority of PTA is consumed in the development of polyester resins, such as polyester films, polyester fiber & yarn, and PET material bottles. PTA is also used as an intermediate in the manufacturing of liquid crystal polymers, plasticizers, polybutylene terephthalate, and others (that include cyclohexane dimethanol, terephthaloyl chloride, polytrimethylene terephthalate, and copolyester ether elastomers). Polyesters manufactured using PTA are used in various industries such as textiles and packaging. With overall growth in economic affordability, the increase in adoption of polymers, PTA requirement is expected to increase with time. According to F&S Report, the global PTA market is expected to grow at a CAGR of 6.6% from $317 billion in 2020 to $437 billion in 2025E.

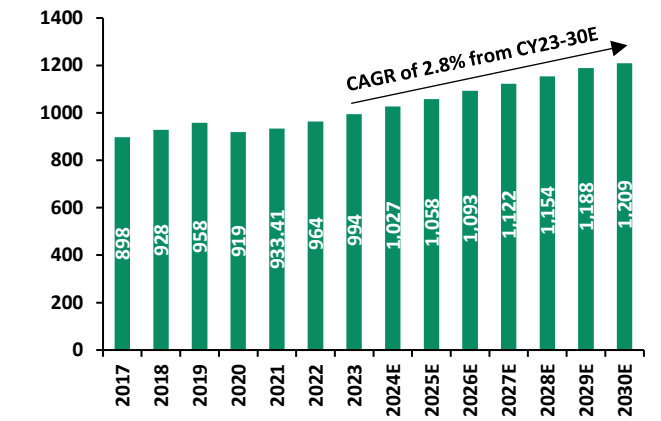
- **Brominated Organic Intermediates:** The brominated organic intermediates is a derivative segment of the elemental bromine. Organic bromine compounds have traditionally played an important role as intermediates in the production of agrochemicals, pharmaceuticals and dyes, while new process developments that results in new applications in UV sunscreens, high performance polymers and others. Organic bromide is also used as a reactant and catalyst for manufacturing a variety of products such as agrochemicals, biocides, water disinfectants, pharmaceutical intermediates, dyes, completion fluids, flame retardants, and photographic chemicals among others.

- **Bromine Flow Batteries:** Over the past several years intensive research and development efforts in the industrial energy storage solutions sector by certain industry players have resulted in the development of batteries that store large amounts of energy. One promising storage solution is that of bromine flow batteries. Hydrogen-bromine flow batteries are a reliable source of sustainable power for large scale industrial units and are currently being used as reliable energy storage solutions in various industrial units around the globe. These flow batteries are based on bromine compounds which are Bromine derivatives. **Bromine flow batteries have been proven to store energy for longer periods and more safely than common lithium-ion batteries.** According to F&S Report, recent studies predict that bromine flow batteries will become a significant factor in the world's energy storage market over the coming decade. The global flow battery market is expected to grow at a CAGR of ~12% from $176 million in 2020 to $489 in 2025E. Also, there is strong support from government of India which has approved Rs180bn for battery manufacturing linked to PLI to Electric Vehicle (EV), thereby indicating a strong push for battery chemicals & bromine flow batteries.

Overview of global bromine industry

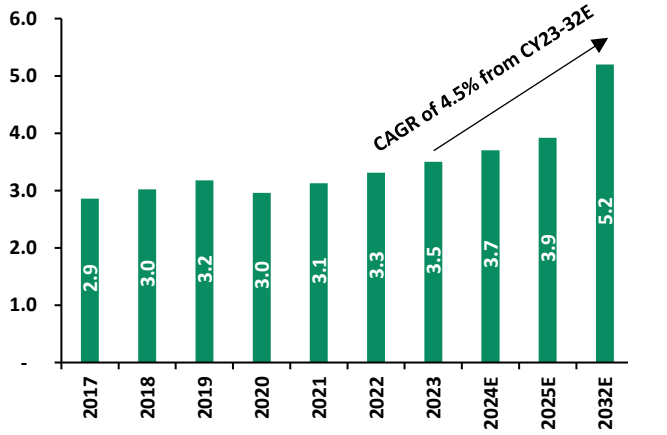
- The global bromine industry was valued at approximately $3.13 billion in calendar year 2021. From 2017 to 2019, the global bromine industry grew at a CAGR of 1.2% from $2.86 billion in 2017 to $3.18 billion in 2019. We estimate that the global bromine industry is expected to grow at a CAGR of 5.8% from between 2020 and 2025E.

Fig 38: Global Bromine market volumes ***(In KT)***



Source: Industry , SMIFS Research Estimates

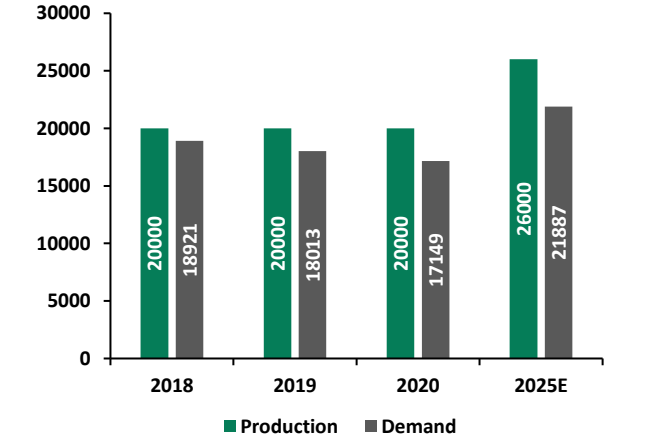
Fig 39: Global Bromine Market size ***(In $ Bn)***



Source: Industry, SMIFS Research Estimates

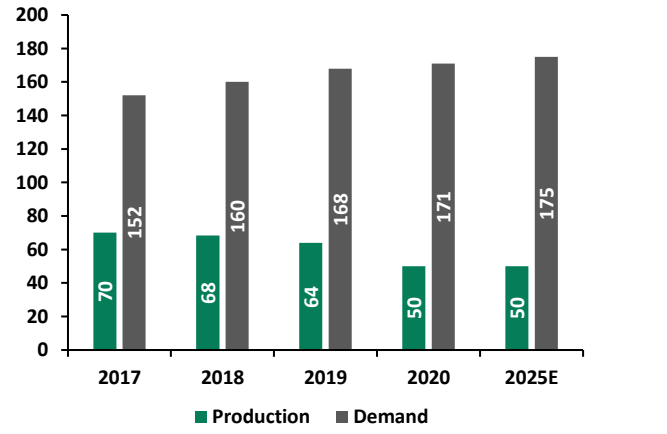
- Israel produced some 1,70,000 MT of bromine in 2023, making it the largest producer. Jordan is the second-largest bromine producer with production volume around 110 thousand metric tons in 2022. China is the top-three bromine producers with the production volume of 70 thousand metric tons in 2022. The total global bromine production amounted to around ~1 million tonnes in 2023.

Fig 40: Bromine production & demand in Japan ***(In MT)***



Source: Industry , SMIFS Research Estimates

Fig 41: Bromine production & demand in China ***(In MT)***



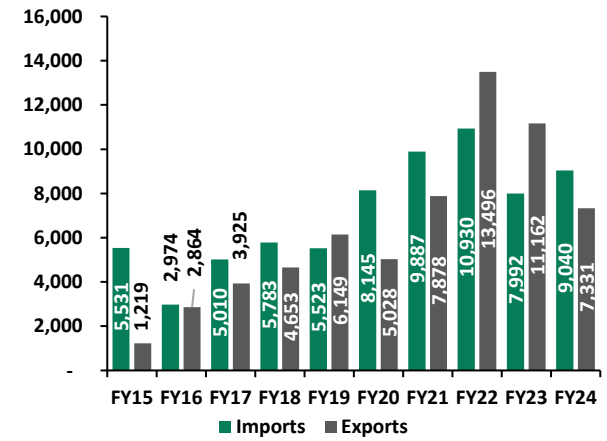
Source: Industry, SMIFS Research Estimates

- The volume of the global bromine market crossed 933 thousand metric tons in 2021, and further reached 962 thousand metric tons in 2022, registering steady growth. The global bromine market volume is poised to maintain an upward trajectory and exceed 1.11 million metric tons by the year 2027.

Indian Bromine Industry – A Perspective

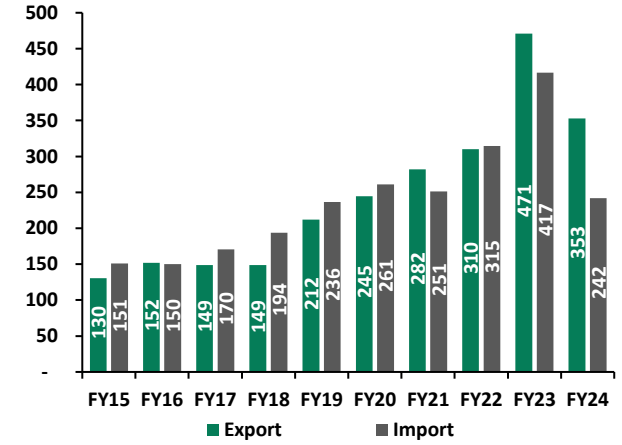
- India's bromine production is from Bittern and produced from the underground brine mainly concentrated towards the western state of Gujarat. India's bromine capacity has developed rapidly from 20,000 TPA in year 2008 to 60,000 TPA in year 2020. The production of bromine in India increased from 20,500 MT in Fiscal 2015 to approximately 46,000 MT in Fiscal 2021 (estimated), out of which approximately 13,500 MT was used for captive consumption.
- Generally, bromine manufacturer's focus on export market due to which despite healthy production, a portion of the bromine demand is satisfied by imports. In 2020, imports have been from nations like Jordan (53%), Israel (41%), United States (4%). On the other hand, bromine has been exported by India at higher prices than bromine imported in India. According to the Company Commissioned F&S Report, most of the bromine (approximately 95%) were exported to China and other nations like Russian Federation, Ukraine, United Kingdom and Vietnam.

Fig 42: India's import and export of Bromine… ***(In MT)***



Source: Industry , SMIFS Research

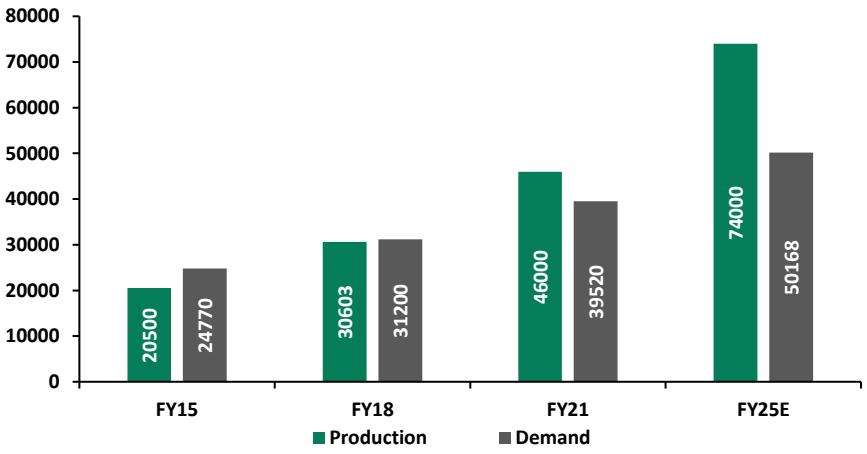
Fig 43: …Realizations of Bromine ***(In Rs per kg)***



Source: Industry, SMIFS Research

- Bromine usage in India is dominated by brominated organic intermediates (a total of 107 bromo-organic compounds are widely used), biocides, pesticides and other applications (like in water treatment, etc.)

Fig 44: Bromine production and demand in India ***(In MT)***



Source: Company Investor Presentation, SMIFS Research

Future Trends & Prospects of global bromine industry

- As we look to the future, it is essential to understand the key trends, challenges, and opportunities that will define the market's outlook. Some of the noteworthy trends expected to shape the global bromine market in the coming years include:

  - **Rising Focus on Sustainable Production:** As environmental awareness grows, the bromine industry is expected to prioritize sustainable production practices to minimize environmental impact and improve resource efficiency

  - **Technological Innovations:** The bromine market will likely benefit from ongoing technological advancements, such as automation and digitalization, which can enhance production efficiency and process control.

  - **Changing Regulatory Landscape:** The evolving regulatory landscape will continue to shape the global bromine market, with governments worldwide implementing stricter safety and environmental standards that impact the use and production of bromine-based products.

  - **Untapped Opportunities in Emerging Economies:** Developing countries in the Asia-Pacific and Latin American regions present significant opportunities for the global bromine market, driven by rapid industrialization and urbanization.

  - **Increasing Strategic Initiatives:** Partnerships and collaborations between market players, research institutions, and government agencies can help drive innovation and foster growth in the global bromine market.

- **Bottomline:** The outlook for the global bromine market appears positive, with key trends, challenges, and emerging opportunities shaping its future. By understanding these factors, market players can make informed decisions and strategically position themselves for success. As the bromine market continues to evolve, industry stakeholders who remain agile and responsive to the changing landscape will be best positioned to capitalize on the growth potential of this dynamic market.

Industrial Salt: A basic commodity for every need

- Salt is a white, crystalline compound, has low toxicity and is completely non-flammable. Salt is added to food as a flavour enhancer (table salt) and is a daily diet requirement of humans. Sodium and chloride are required for cells to function, and cannot be produced by the body, making salt an essential nutrient. According to the F&S Report, there are 14,000 commercial uses for salt majorly classified as plastics, glass, synthetic rubber, cleansers, pesticides, paints, adhesives, fertilizers, explosives and metal coatings.
- There are three sources of salt according to method of recovery:

  1. Rock Salt, from the surface or underground mining of halite deposits.

  2. Solar Salt, from the solar evaporation of seawater (also known as sea salt), landlocked bodies of saline water or primary or by-product brines (such as from the desalinations of mine water) as well as vacuum pan salt, from the mechanical evaporation of a purified brine feedstock.

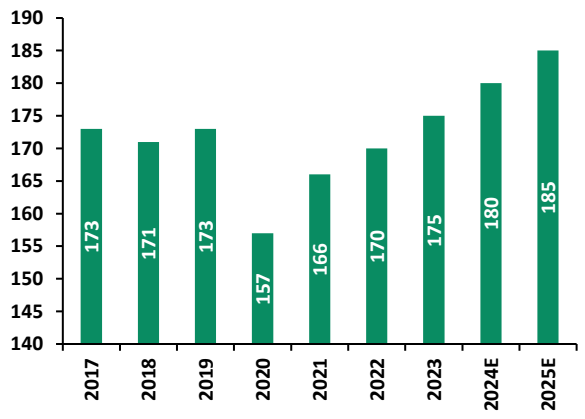
  3. Brine, from the solution mining of underground halite.

- In India, Industrial salt is produced using the evaporation method, which is more cost-efficient when compared to mining method. Cost of production of Salt from Brine majorly consists of the processing cost, utility, manpower costs, fixed costs and transportation to the market. Generally, the cost of production for industrial salt from sea water brine in India is approximately $12 to $15 per MT.

Overview of the global market for industrial salt

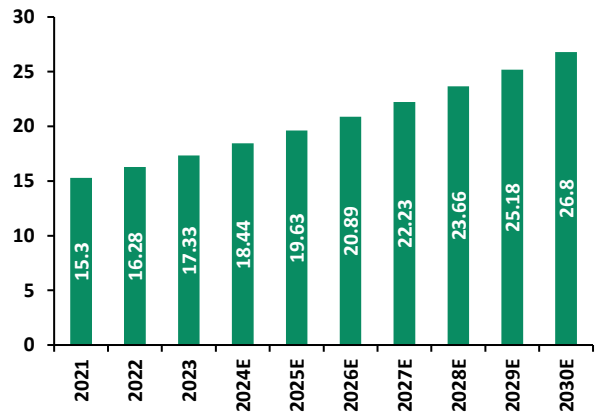
- The global industrial salt has seen no major growth from 2017 to 2019 with consumption at 173 million MT. However, it is expected that the global market will grow at a CAGR of 2.8% from 157 million MT in 2020 to 185 million MT in 2025E.

Fig 45: Global industrial salt volume ***(In Mn MT)***



Source: Industry , SMIFS Research Estimates

Fig 46: Global industrial salt market size ***(in $ Bn)***



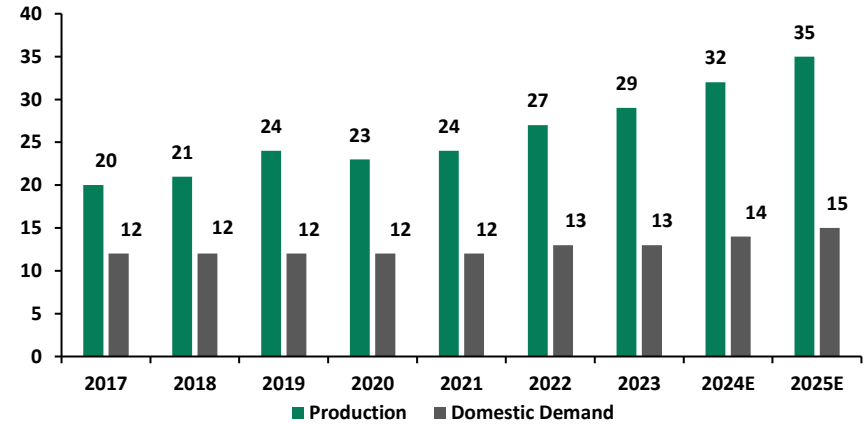
Source: Industry, SMIFS Research Estimates

- The global industrial salt industry is segmented by applications into oil & gas, chemical processing, water treatment and de-icing. Out of which, the chemical processing segment is anticipated to hold the largest share in the industrial salt market on account of the growing demand for industrial salt in soda ash, chlorine & caustic soda production.
- The segment of de-icing is also expected to occupy a notable share in the market in the near future owing to the effective ice control properties of industrial salt such as high efficiency at lower temperatures.
- Furthermore, the section for oil & gas application is projected to grow significantly during the forecast period, which can be associated with the high consumption of industrial salt during drilling and extraction procedures.

Overview of the Indian industrial salt industry

- In 2019, the per-capita consumption of salt in India was approximately 14 kg, which includes edible and industrial salt. The current annual requirement of salt in the country in 2023 is estimated to be ~12 million tonnes for industrial use and export of ~14 million tonnes to various countries.
- India backed by huge sea line and oceans on two fronts have high quality manufacturing of industrial Salts. India is the third-largest salt producing country in the world (after the US and China). State-wise Gujarat, Tamil Nadu and Rajasthan produces salt in excess of their domestic consumption requirements. While Gujarat constitutes 70% of the country's total production, the share of Tamil Nadu and Rajasthan stood at 15% and 12% respectively in 2019.

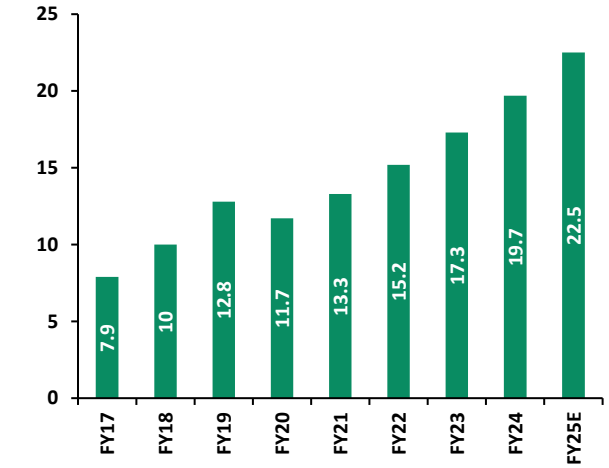
Fig 47: Indian industrial salt demand and production ***(In Mn MT)***



Source: Industry, SMIFS Research Estimates

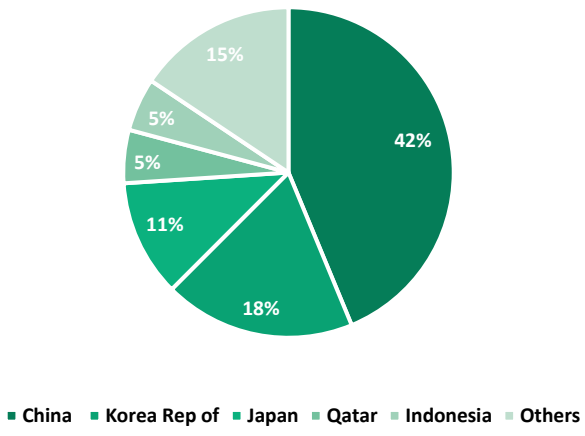
- According to Govt trade data, in Fiscal 2020, exports of industrial salt from India were mainly to China. (42%), Republic of Korea (18%), Japan (11%) and Qatar, Indonesia & Vietnam (5% each).
- Also, India was ranked 6th with the share in export of ~7% globally 50th with the share in import of 0.35% of industrial salt. During Fiscal 2020, the exports of salt (other than common salt) by India decreased by about 8.42% to about 11.68 million tonnes, from about 12.76 million tonnes in the previous year.

Fig 48: Export of industrial salt from India



Source: Industry , SMIFS Research Estimates

Fig 49: Salt export destination from India

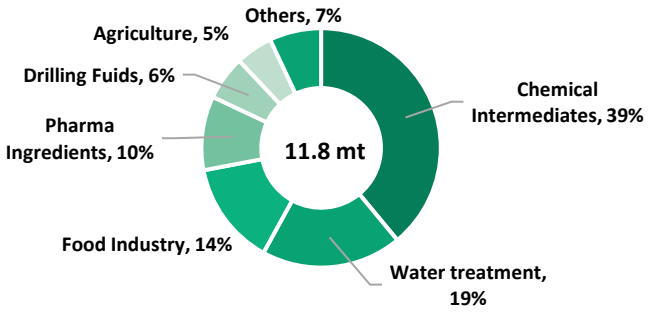


Source: Industry, SMIFS Research

Applications of Indian Industrial Salt Sector: The Saltier the Better

- Salt is an important raw material used in chemical Industry. It is used in the production of basic chemicals like sodium carbonate (soda ash), caustic soda, hydrochloric acid, chlorine, bleaching powders, chlorates, sodium sulphate (salt cake) and sodium metal.
- These basic chemicals are used in the preparation of various end products such as soaps, detergents, chlorinated hydrocarbons and carbon tetrachloride. Other important applications are in food processing such as freezing point depressant in refineries & milk supply schemes, treatment of industrial wastes, purification of drinking water and manufacture of synthetic indigo, explosives, papers, etc.
- The rock salt produced from Mandi mines contains ~68% NaCl which is not suitable for human consumption as the content of sodium chloride is low from the required 96% NaCl necessary for human consumption. However, this salt finds application as essential supplement in cattle feeds.

Fig 50: Industrial Salt use cases in domestic market



Source: Industry, SMIFS Research Estimates

Use of industrial salt in the production of caustic soda: Caustic soda is one of the important chemicals which finds use in major industries such as the textile, pulp & paper, aluminium, polyvinyl chloride (PVC), pharmaceutical, dye stuffs, soap and detergents, and fertilizers etc. The most common method of its production in India is by the electrolysis of industrial salt. During the electrolysis process, chlorine and hydrogen are produced as by-products. Typically, with 1.7 MT of salt, 1 MT of caustic soda, 0.89 MT of chlorine and 25 kg of hydrogen gases are produced. In India, caustic soda industry has market volumes of 3.43 million MT in Fiscal 2021 and expected to grow at 5.43% to reach 5.52 million MT by year 2030.

Use of industrial salt in the water industry: Salt is used as a raw material for many water treatment plants. This use is essential to maintain the efficiency of resins that help to provide better softer water. The water treatment segment is likely to grow at a CAGR of ~10% from US$2.4 billion to US$4.3 billion.

Use of industrial salt in the food industry: Generally speaking, salt is used as food preservative specifically for meat, fish, dairy products and other food products. Commonly this preservation is referred as salt curing. Salt can also act as binding and emulsifying agent. Salt and proteins interact to provide an essential water-binding function. Salt inhibit or controls fermentation rate by decreasing the rate of gas production which result in the longer proof times. Hence it acts as fermentation regulator. Salt plays an important role in cheese making particularly in deciding the final texture of cheese. India's food processing sector is expected to grow at a CAGR of 12.5% from $263 billion in FY20 to reach $535 billion by FY26E.

Use of industrial salt in the pharmaceutical industry: Over 50% of all drug molecules used in medicine exist as salts most frequently as the hydrochloride, sodium or sulphate salts. Sodium salts form 9% percentage of salt form as a function of all medicinal compounds.

Key players in the Indian industrial salt industry

While there are umpteen small traders and exporters from India only few top exporters from India having export volumes more than 1 million MT in Fiscal 2021. They include the following:

Fig 51: Key players in the Indian salt industry

Company Name	Export (Mn MT)
Archean Chemical Industries Ltd.	2.7
The Kutch Salt And Allied Industries Ltd. group (including Friends Impex India)	1.2

Source: Company, SMIFS Research

Sulphate of Potash (SOP):

- SOP is also known as Potassium Sulphate (K2SO4), is a premium quality nutrient for the growth of high value crops.
- Potassium sulphate is an inorganic chemical compound with other names as Arcanite or potash of sulphur. Chemically it is an ionic compound with solubility in water dissociating into two ions - potassium cation and sulphate anion. Potassium sulphate is a white, odourless solid that is a hygroscopic product, which means that it can become damp when it comes into contact with air.
- The key production processes for SOP are as follows:
  1.) **Extraction from mineral ores:** Primary production method include directly extracting SOP from mineral ores containing both potassium and sulphate. This method is currently rare and may yield by-products, which can contribute additional revenue.
  2.) **Mannheim process:** The most common secondary production method of SOP is referred to as the Mannheim process. More than half of global SOP production volume is derived by reacting Muriate of Potash (MOP, chemical formula KCl) with sulphuric acid in a Mannheim furnace at temperatures above 700 degrees Celsius, yielding both potassium sulphate and hydrochloric acid. Due to the high input costs, energy intensity and waste disposal costs of this process, it is typically higher cost than primary SOP production from brine evaporation.
  3.) **Ion exchange:** Other than the Mannheim process, the second most common production process is through ion exchange, namely that MOP is reacted with magnesium sulfate (kieserite) to produce SOP and byproduct magnesium chloride, which can be sold in the merchant market as well.
  4.) **Salt-water brine:** Another SOP production method is based on salt-water brine. In salt production from sea water, water is evaporated in open ponds and common salt NaCl is crystalized and harvested. At the end of sea salt production usually large quantities of high salinity brines, so-called bittern remains. Minerals can be extracted and recovered from sea bittern and be converted into by-products in particular SOP.

Fig 52: Elemental bromine domestic player wise split of capacity and production details

Region	Process Method	World Capacity	Process Inputs	Products	Future Outlook
China / Europe	Mannheim	60%	A) MOP, B) Sulphuric Acid, C) Energy	A) SOP, B) Hydrochloric Acid	High cost
Europe	MOP and Kieserite	25%	A) MO, B) Kieserite, C) Energy	A) SOP, B) Magnesium Chloride	No additional deposits
China / USA / Chile / India / Australia	Salt Lakes / Salt Brine	15%	A) Lake Brines, B) Energy	A) SOP, B) Magnesium Chloride, C) Sodium Chloride	No additional suitable lakes, limited brine availability and those who have access to raw material have advantage

Source: Company DRHP, SMIFS Research

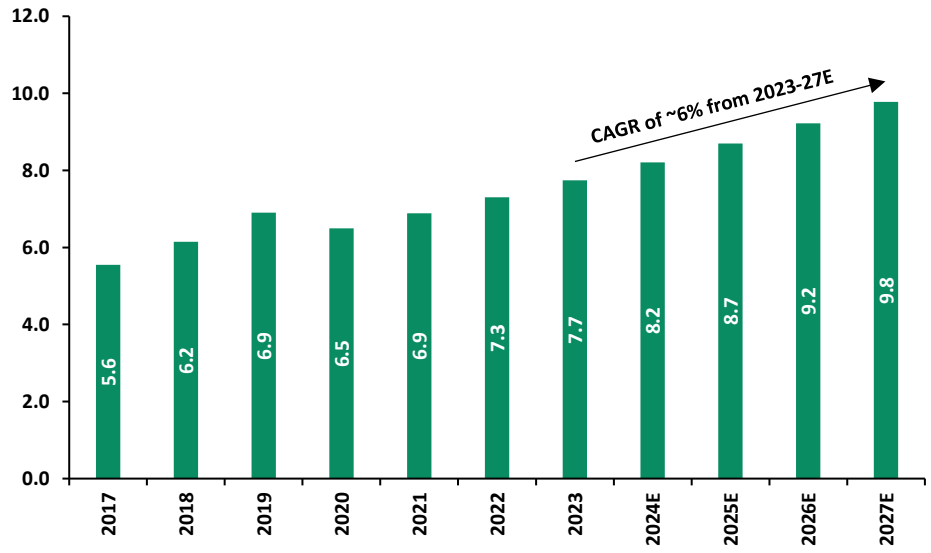
Global Uses of Sulphate of Potash (SOP):

- **SOP as a fertilizer:** SOP is usually defined as an essential nutrient for plants that serves to generate proper synthesis of proteins, to regulate the balance water, to assist the plant in case of periods of drought and they have a better resistance to diseases. SOP is straight potassic fertiliser which is chloride (Cl) free and has low salt index. It is also known as fertilizer for improving quality and is applied to crops in open field as well as under protected cultivation.
- **SOP for medical uses:** In the field of medicine, potassium sulphate also has a fairly important use as it is used to reduce the plasma concentration of potassium when hypokalemia occurs. It is also the main ion of many of the excitable cells that exist in the human body, for example cardiac cells , so when there is a serious decrease in potassium, the cardiac system is affected and potassium sulphate turns out to be the ideal medicine to be able to correct the problem immediately. By having a cathartic action, it also helps with constipation problems as they make the expulsion of stool through the colon an easier process. Potassium Sulphate is also used in the field of veterinary medicine.
- **SOP for uses in other industries:** Besides being an excellent fertilizer for crops, potassium sulphate is also used as raw material in various industries, including without limitation:
    - **Glass:** SOP is a necessary component in the manufacturing process of the glass and in the process of manufacturing of the potassium carbonate and the alum.
    - **Cosmetic**: In the cosmetic field, SOP is used as a type of reagent.
    - **Food & Beverages:** In the manufacture of beverages such as beer, SOP works as a type of water corrective agent. SOP also works as a type of flavouring agent for food.
    - **Others:** SOP can be used as a pyrotechnic as it produces a purple flame. Potassium sulphate is also used as a flash reducer in artillery propellant charges. It reduces muzzle flash, flare back and blast over pressure.

Overview of global market for SOP

- The global Sulphate of Potash market was approximately 6.5 million MT in 2020. Global Sulfate of Potash market is expected to reach 8.698 million MT by 2025 from 6.5million MT in 2020, at a CAGR of 6.0% in the forecast period 2021 to 2025.

Fig 53: SOP global market to grow at CAGR of ~6% from 2023-27E ***(In Mn MT)***



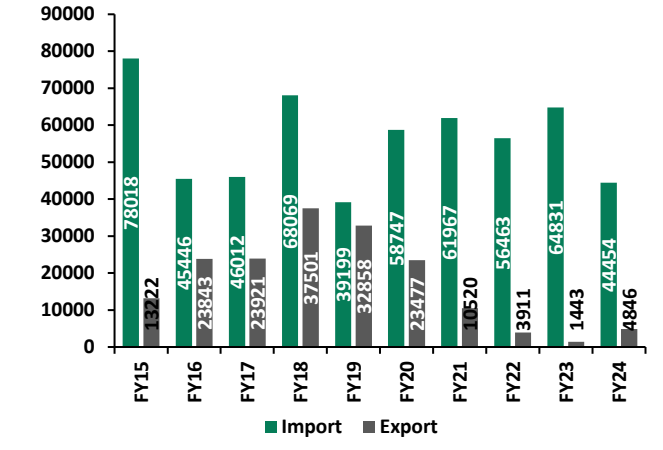
Source: Industry, SMIFS Research Estimates

- The global SOP market is driven by the rising advantages of SOP over MOP. In addition, rising middle-class population is anticipated to boost the growth of the market, as living standards improve, consumption of fruits increases at a faster rate than broad acre staples such as wheat and rice. The major factors contributing to the growth of the market includes factors such as rising global population and income growth in key emerging markets, reduction in arable land and chase for higher yields. The global SOP industry may be negatively hindered by growth in the trend of organic food consumption.
- China, which is the largest consumer of SOP in the world, accounts for more than 45% of global demand in 2023. With a population of 1.4 billion, it is the world's largest producer of tobacco, fruits and vegetables – premium crops that are better suited to SOP. Over the past 20 years, the demand for SOP in China has experienced significant growth, growing from approximately 0.5 million MT per year in the early 1990s to approx. 2.9 million MT in 2023.
- The global suppliers of SOP are K+S Group, Guotou Xinjiang LuoBuPo Potassium Salt, and the Tessenderlo Group who combined accounts for ~45% share of the total global supply.

Overview of Indian market for SOP

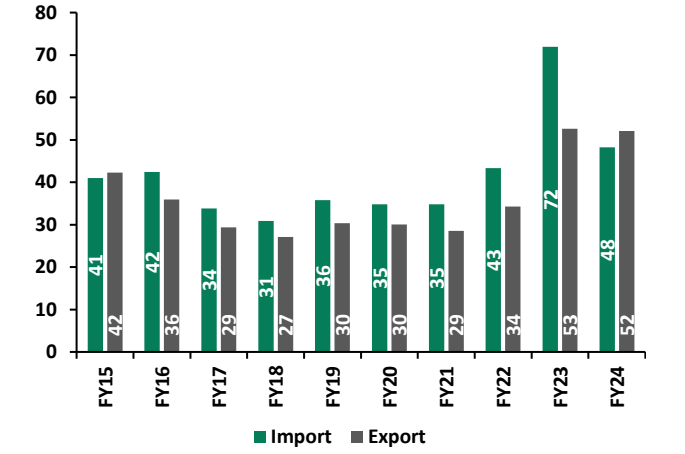
- The overall SOP market in India was approximately 55,757 MT in FY20. The growth in SOP in India is expected to follow the global trend of approximately 6% until 2025E.
- Being second most populous country India has huge food requirements and limited arable land to produce that food grains. Hence the need for fertilisers is increasing in India. About 90% of the potassium sulphate consumed in India is for agricultural purposes as fertilizers in tobacco, citrus fruits such as pineapples, tomatoes and oranges, walnuts, etc.

Fig 54: Indian SOP volumes import & export trend… *(In MT)*



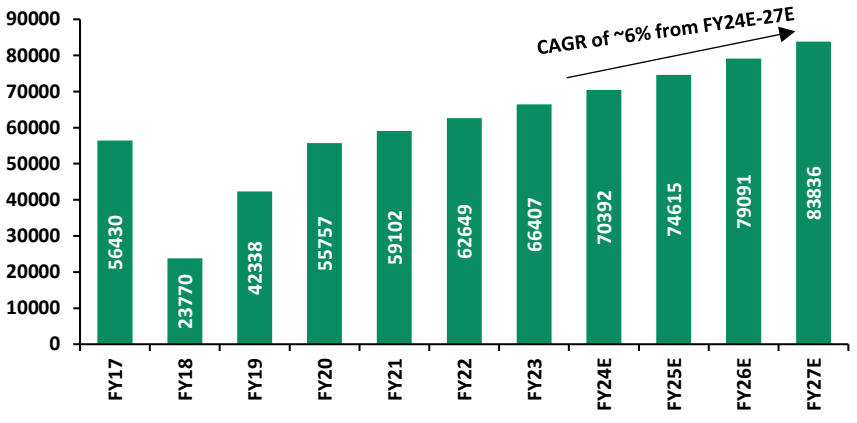
Source: Industry , SMIFS Research

Fig 55: …Realizations trend *(Rs per kg)*



Source: Industry, SMIFS Research

Fig 56: Indian SOP market to grow at CAGR of ~6% from FY24-27E *(In MT)*

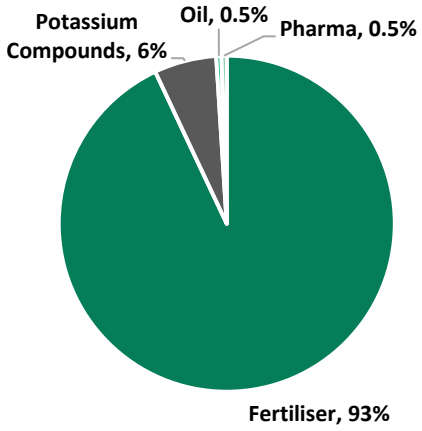


Source: Industry, SMIFS Research Estimates

Application segments of SOP in India

- **Fertilizer:** Sulphate of Potash is a premium potash fertilizer with a number of benefits over the more commonly used Muriate of Potash (MOP). SOP is recommended by Potash Research Institute of India and used by the farmers. SOP offers many advantages such as increased crop yield, ease of usage in plants as well as adequate sulphur and potassium content among others. That apart SOP usage reduces the toxic effects of chloride build up in soil especially in dry conditions. Over the last few years, the production of fruits, vegetables, treenuts (and tobacco as well) has registered a significant growth primarily driven by the population growth and changing consumer preference for healthier diets. Hence, there has been an increase in agricultural schemes by Government bodies to initiate the development of modern technology and high yield crops, which is increasing the demand for potassium sulphate and its application as a fertilizer and consecutively driving the market growth.
- **Potassium compounds:** Potash Alum and Potassium persulfate are the two important potassium compounds. Potash alum is used for longer food life, enhancing food taste, flavour & texture. It is also used in water purification treatment to improve the sedimentation of drinking water. In India, with the growth in population, the water treatment segment is expected to grow at double digit CAGR of 10.2% from Fiscal 2020 to Fiscal 2025. Persulphates are used as oxidizing agents for the treatment of water. With the increasing concerns about the environment and potable water requirements, the consumption of persulphates in the water treatment industry is expected to increase. Potash Alum is also used in leather tanning and as cosmetics like aftershave. Potassium persulfate is used as polymerisation initiators, as heat stabilisers (PVC, Nylon).
- **Oil Exploration:** Oil exploration India's oil demand is projected to rise at the fastest pace in the world to reach 10 million barrels per day by 2030, from 5.05 million barrel per day in 2020. Hence there is huge emphasis on oil production and explorations. SOP is added to drilling fluids in oil exploration activities and have the advantage of leaving fluids which are rich in potassium and may be used as fertilizer or otherwise disposed of without environmental damage. India has launched India Hydrocarbon Vision 2025, laying foundation for its future focus areas like intensification of exploration efforts and achievement of 100% coverage of unexplored basins in a time bound manner to enhance domestic availability of oil and gas. According to the Company Commissioned F&S Report, the drilling and oil exploration industry in India is expected to grow at a CAGR of 6% from 2019 to 2030.
- **Pharmaceutical drugs:** In recent times, these are majorly used in osmotic laxatives in the pharmaceutical industry. With ageing population, sedentary lifestyle and changing food habits, laxative markets are growing substantially in India,

Fig 57: SOP end-user applications in domestic market



Source: Industry, SMIFS Research Estimates

Requirement of fertilizer grade Potassium Sulphate

- The SOP material shall be crystalline, white or light grey in colour and free from visible contamination with clay and grit. The particle size of the material shall not be less than 0.25 mm that is 95% of the material shall be retained over 250-micron Indian Standard sieve. In India, the material shall also comply with IS 2764, requirements as set below:

Fig 58: Highest potash content ensures continued volume momentum for SOP

Characteristics	Requirement
Potash Content (as K2O), percent by mass, Min.	48.0%
Moisture percentage by mass, max.	1.5%
Total chlorides (as Cl) by mass, max.	2.5%
Sodium (as Na Cl) by mass, max.	2.0%

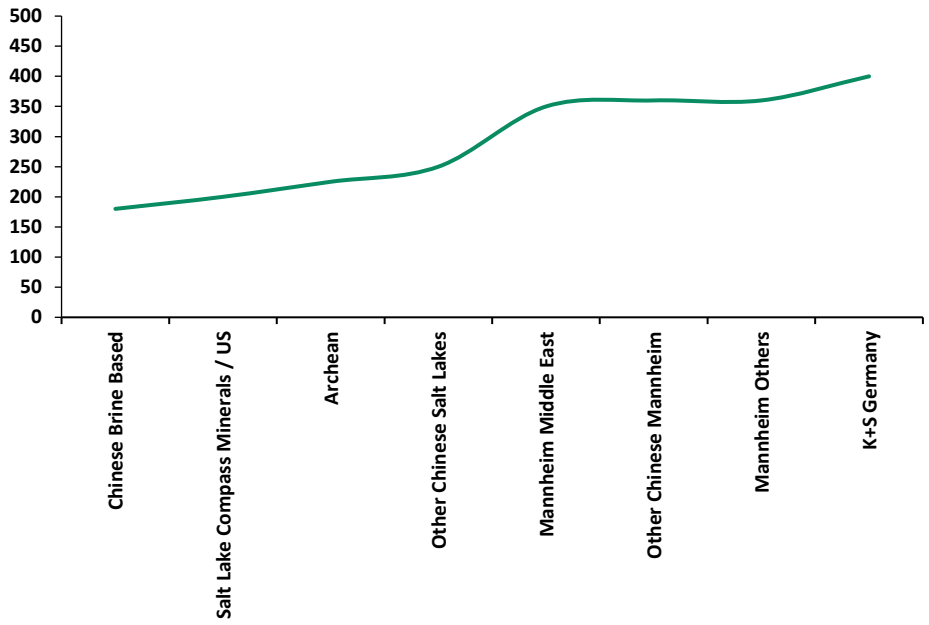
Source: Industry, SMIFS Research

- To ensure adequate availability of right quality of fertilizers at right time and at right price to farmers, SOP was declared as an essential commodity. Any SOP which is sold as fertiliser grade is subject to scrutiny and inspections by the Fertilizer Control Order (FCO) in India.

Key players in the global POS industry

- Sulphate of Potash is predominately produced from sea brine in India. Archean Chemical is India's only large-scale producer of fertiliser grade water soluble sulphate of potash. Globally, the other key players in the POS industry include Tessenderlo Group, Nutrien and Mosaic Company.
- The cost of production of SOP is lowest for brine-based production. Typical global cost of production curve is as shown below, with Archean Chemical among the top three cost competitive producers globally. Variations in cost curve happen every year considering the local utility costs, local inflation hence such curves are included without any single point cost of production but relative cost of production expected from various sources.

Fig 59: Cost of production of SOP is lowest for brine based production ***(In $ per ton)***



Source: Industry, SMIFS Research Estimates

Key risks to our thesis

Foreign currency fluctuations

- Archean ~70-75% of the revenues are derived from exports, hence it is exposed to foreign currency fluctuations.
- The company adopts forex hedging policy wherein exports are hedged for a period of 6 months, however, any unfavourable foreign currency movement could affect the company as one time forex expense.

Aggressive pricing by competitors

- Since ~60% of the global bromine market is captured by 3 players, hence any impact on demand will lead to reduction in prices by competitors will affect Archean and other bromine manufacturers.
- Since, Archean has strong foot in the domestic market where it can command some premium pricing over its competitors, in export market Archean faces competition from foreign players & will have to align with the pricing of bromine as per demand supply dynamics. This indicates medium pricing power by Archean.

Client concentration risk

- The company's customer includes leading domestic & International MNC's such as Sojitz Corporation, Shandong Tianyi Chemical Corporation, Unibrom Corporation, Wanhau Chemicals and Qatar Vinyl Company Ltd.
- Sojitz Corporation is the single largest customer of the company constituting ~20-30% of total revenues which makes it vulnerable owing to dependency on a single client is the highest.
- Any uncertainty or loss of big client can put a big dent on company's growth outlook.

Corporate Governance

We believe that good corporate governance is necessary for enhancing the trust of the shareholders. Hereby, we present a detailed framework on corporate governance for the comfort of the investors of Archean Chemicals considering board of directors, remuneration of key managerial personnel, contingent liability etc.

Promoters' Shareholding

The promoters currently hold ~53.5% of the equity capital. The details of the shareholding and its movement are indicated in the following table and chart:

Fig 60: Latest Promoter Shareholding

Particulars	% Holding
Chemikas Specialty LLP	30.6
Mr. P. Ranjit	22.9
Mr. P. Ravi	0.0
Total	53.5%

Source: Company Shareholding FY24, SMIFS Research

Fig 61: Promoter Shareholding

Source: Company Annual Report, SMIFS Research

The decline in promoter shareholding from FY22 to FY23 was because of IPO wherein promoter participated via OFS.

Promoter Compensation

The promoter compensation is at 4.5% of PBT.

Fig 62: Remuneration of promoter ***(Rs in mn)***

	FY19	FY20	FY21	FY22	FY23	FY24
Mr. P Ranjit	36	39	32	43	241	192
Mr. P. Ravi	0	0	0	0	0.3	0.3
As a % of PBT	*12.3%*	*-22.6%*	*3.6%*	*1.7%*	*4.7%*	*4.5%*

Source: Company Annual Reports, SMIFS Research

Independent Director's Compensation

As on FY24, Archean Chemical Industries board constituted of 4 independent directors. Independent directors were paid cumulative Rs102mn which is 3.2% of PBT as on FY24.

Fig 63: Remuneration of Independent Director *(Rs in mn)*

Name	Compensation (In Rs mn)		As a % of PBT	
	FY23	FY24	FY23	FY24
Mr. S Meenakshisundaram*	1.0	100.2	0.02%	2.3%
Ms. Padma Chandrasekaran	0.9	0.6	0.02%	0.01%
Mr. K M Mohandass	0.9	0.6	0.02%	0.01%
Mr. C G Sethuram	0.7	0.4	0.01%	0.01%
Total	**3.5**	**101.8**	**0.1%**	**2.4%**

Source: Company Annual Report FY24, SMIFS Research. *Consequent to the exercise of ESOP in FY24.

Board Composition

In FY24, Independent directors constitute ~50% of the board composition.

The details are given below:

Fig 64: Board Composition

	FY21	FY22	FY23	FY24
Independent Directors	1	3	3	3
Executive Directors & MD	1	1	1	1
Non-Executive Directors	0	0	2	2
Director & Nominee Director	3	1	0	0
Additional Director	0	1	0	0

Source: Company Annual Reports, SMIFS Research.

Contingent Liabilities

The company's contingent liability as a % of net worth is 3.3% in FY24 and it has decreased from 12.4% in FY19. A major portion of contingent liabilities is safe items which we have taken into consideration in calculating total liability.

Fig 65: Contingent Liability *(Rs in mn)*

	FY19	FY20	FY21	FY22	FY23	FY24
Disputed Service tax, Sales tax, Income tax and Wealth tax dues under appeal	54	0	166	171	65	568
Total	**54**	**0**	**166**	**171**	**65**	**568**
As a % of Net Worth	***12.4%***	***0.0%***	***22.5%***	***6.5%***	***0.5%***	***3.3%***

Source: Company Annual Reports, SMIFS Research

Related Party Transaction

As per our analysis of RPT, nothing specific has came to our notice.

Fig 66: Related Party Transaction

Related Party Transaction (in Rs mn)	FY21	FY22	FY23	FY24
Jakhau Salt Company Private Limited				
Reimbursement of Jetty Expenses	20	36	42	51
Reimbursement of Expenses	5	2	2	0
Others	0	0.4	0	0
Bharath Salt Refineries Limited				
Reimbursement of Expenses	1	-3	2	0
Purchase of traded goods	0	0	44	0
Transportation charges receivable	3	2	0	0
P. Ranjit				
Office Rent GDM	4	5	4	5
Payment of dividend	0	0	0	127
Goodearth Maritime Private Limited				
Reversal of provision for doubtful receivables	0	-5	0	0
Expenses towards jetty services	279	141	212	257
Shipment Management fee expenses	0	67	50	54
Advance given for jetty charges	100	0	0	0
Security charges for jetty charges	118	0	0	0
Reimbursement of expenses	0	43	58	83
Archean Industries Private Limited				
Reimbursement of Expenses	2	1	0	0.2
Sea Salt Holdings Pvt Limited				
Reversal of provision for doubtful receivables	0	0	-14	0
Reimbursement of expenses	0	0	6	0
Despatch income	0	0	0	2
Sale of salt	122	287	353	483
Chemikas Speciality LLP				
Payment of dividend	0	0	0	170
Cloudgen Digital Private Limited				
Others	1	0	0	
Archean Foundation				
Towards CSR expenses	0	10	12	12
KGF Granites Private Limited				
Reimbursement of Expenses	0	0	0.1	0
Total	**657**	**586**	**772**	**1243**

Source: Company Annual Reports, SMIFS Research

Key management personnel

Fig 67: Details of promoter and director

Name	Designation	Profile
Mr. Ranjit Pendurthi	Promoter & MD	Mr. Ranjit Pendurthi holds an MBA from The University of Chicago. He is also is currently a Director at Goodearth Maritime Ltd., Jakhau Salt Co. Pvt Ltd., and a Director at Archean Salt Holdings Pvt Ltd., Kgf Granites Pvt Ltd., Acume Chemicals Pvt Ltd., Archean Design & Development Pvt Ltd., and Archean Fertilizer Pvt Ltd. Mr Ranjit has ~21 years of experience within the chemical industry and has been associated with Archean since 2003.
Mr Ravi Pendurthi	Promoter & Non-Independent Director	Mr. Ravi Pendurthi completed his undergraduate degree at Monmouth University. He is also currently a Director at Goodearth Maritime Ltd., Jakhau Salt Co. Pvt Ltd., Archean Industries Pvt Ltd., Archean Chemical Industries Ltd., Kgf Granites Pvt Ltd., Greenergy India Pvt Ltd., and Seleccion Consulting Pvt Ltd. Mr Ravi has been associated with Archean group for last 14 years. He has several years of experience in chemical industry.
Mr. R Raghunathan	Chief Financial Officer	Mr. R Raghunathan joined Archean in June, 2022 and has more than a decade of experience in financial planning, budgeting and cash management while implementing strict budgetary controls. He was associated with Wheels India, Chettinad Cement Corporation, Hatsun Agro Products and MRF. Mr. R Raghunathan is an associate of Institute of CharteredAccountants of India and has passed the final examination held by the Institute of Cost and Works Accountant.
Mr. Subrahmanyam Meenakshisundaram	Non-Executive Director	Mr Subrahmanyam has ~40 years of experience in accounting, finance and tax and also has previously worked with Muljibhai Madhvani & Co, Chemplast Sanmar and Mohan Breweries and Distillers. He is a Chartered Accountant by profession and hold a bachelor's degree of Commerce from University of Madras.
Ms. Padma Chandrasekaran	Independent Director	Ms Padma has been associated with the company since 2019 and ~32 years of experience in various industries such as IT and finance. She has been previously associated with CAMS and Sterling Software. She holds a post graduate diploma in business administration from IIM Ahmedabad, a degree of bachelor of Science from University of Calcutta and a MBA in telecommunication from University of San Francisco

Source: Company Investor Presentation, SMIFS Research

CSR Activities

Archean Chemical Industries Ltd has spent ~Rs56mn in FY24. The spend as % of prescribed limit is above 100% for FY24.

Fig 68: CSR spend ***(Rs in mn)***

Company	Avg Net Profit (last 3 Yrs)	Prescribed Expenditure	Total Spends	Spend as % of prescribed limit
FY24	2856	55	56	102%
FY23	1067	21	15	72%
FY22	341	0	10	NA
FY21	-242	0	6	NA

Source: Company Annual Reports, SMIFS Research

Auditors

Archean Chemical Industries Ltd appointed M/S. PKF Sridhar & Santhanam LLP, Chartered Accountants as the statutory auditor. The auditors have given a true and fair view for the results of the financial year 2023-24.

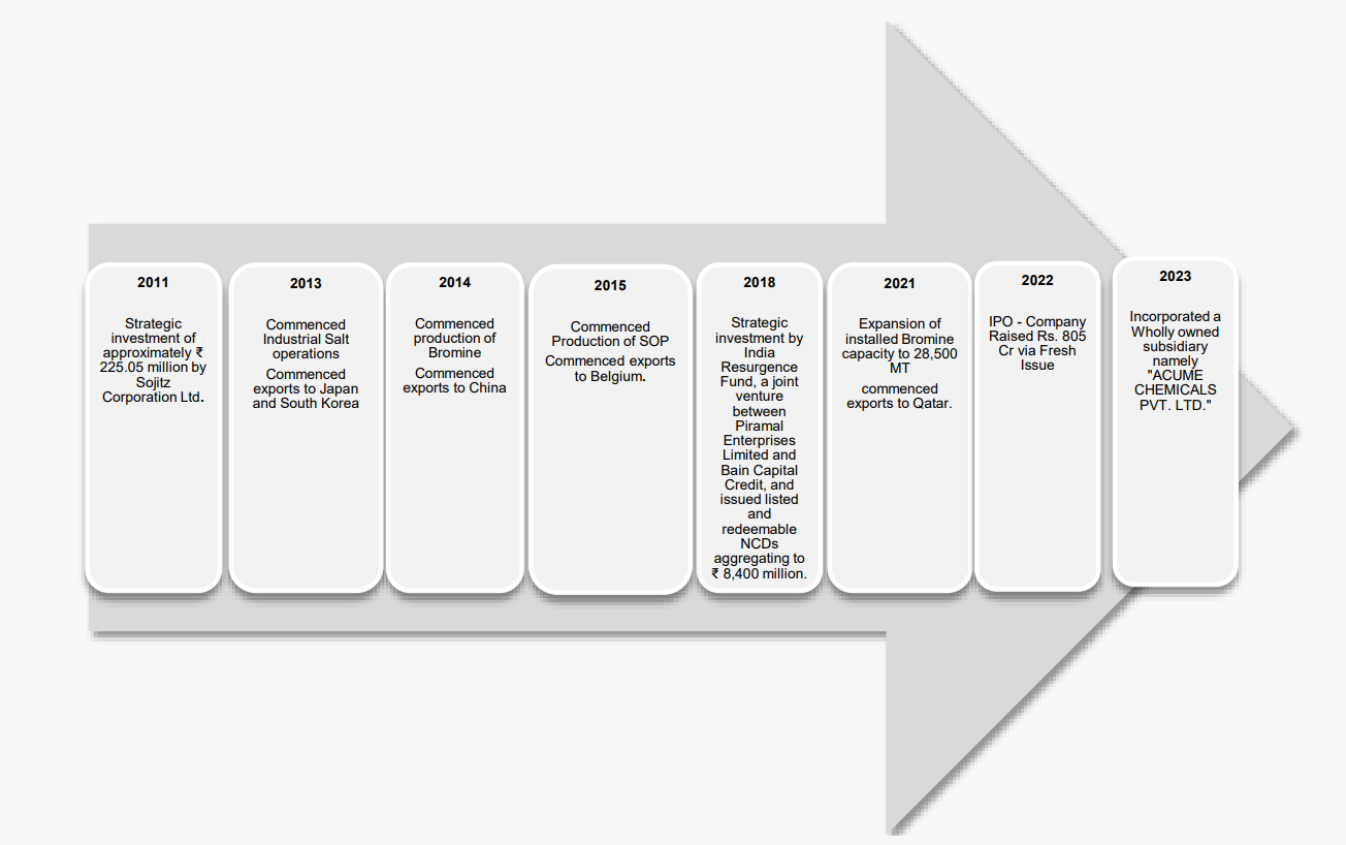
Fig 69: Auditor fee

Auditor Name	Type	Auditor Fees (Rs mn)	As a % of PBT
M/S. PKF Sridhar & Santhanam LLP, Chartered Accountants	Statutory Auditor	6.2	0.2%

Source: Company Annual Reports, SMIFS Research

Key milestones

Fig 70: Key Milestones of Archean Chemical Industries Limited



Source: Company Investor Presentation, SMIFS Research

Company Background

What is Archean Chemical all about?

- Incorporated in 2009, Archean Chemical is a leading specialty marine chemicals manufacturer in India focussed on manufacturing & exporting bromine, Industrial Salt & Sulphate of Potash.
- Archean holds leadership position in exports of Indian Bromine industry and also only manufacturer of Sulphate of Potash from natural sea brine in India.
- Archean use brine from own reservoirs as raw material which include Industrial Salt, kainite and end bittern. Other raw materials are primarily sourced from third-party suppliers in India.
- The company's facility and its surrounding salt fields and brine reservoirs span ~240 square km. Till date, the manufacturing facility had an installed capacity of 42,500 TPA of Bromine, 3.6 million tonnes per annum of industrial salt and 1,30,000 TPA of Sulphate of Potash.
- The manufacturing facility is located in close proximity to the Jakhau Jetty and Mundra Port. The Jakhau Jetty is a fair-weather facility, operating for seven to eight months a year from October to May.
- The company has a designed capacity of 5 million tonnes per annum and a capacity to load 42,500 TPA equipped with a twin conveyor system, diesel generator sets.
- Also, integrated manufacturing site with access to the Rann of Kutch reserves and a close connectivity to ports, results in production process efficiency, deliver superior quality and timely products.

Fig 71: Product wise capacity breakup details as on FY24

Location	No. of Units	Capacity (In MT)	Product name
Hajipir, Gujarat	1	42,500	Bromine
Hajipir, Gujarat	1	3,600,000	Industrial Salt
Hajipir, Gujarat	1	1,30,000	Sulphate of Potash

Source: Company, SMIFS Research

- The company has developed strong clientele track record over the years & entering in long term contracts of (12 months or more) is itself a testimony of the relationship & confidence of the customer in Archean which has developed over time.
- Archean enjoys relationships of over 5 years with seven out of the top 10 customers.
- Long standing relationship with customer also have helped the company to expand its product offerings and geographic reach. For other customers, it instead relies on purchase orders to govern the volume and other terms of its sales of products. Many of the purchase orders the company receive from its customers specify a price per unit and delivery schedule.
- The company's customer includes leading domestic & International MNC's such as Sojitz Corporation, Shandong Tianyi Chemical Corporation, Unibrom Corporation, Wanhau Chemicals and Qatar Vinyl Company Ltd.

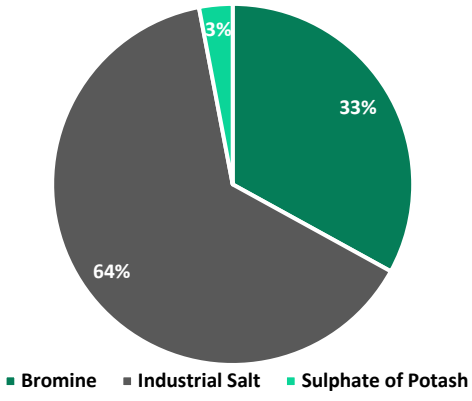
Fig 72: Key Clientele

Source: Company, SMIFS Research

Different product basket & diversified end user mix gives good visibility

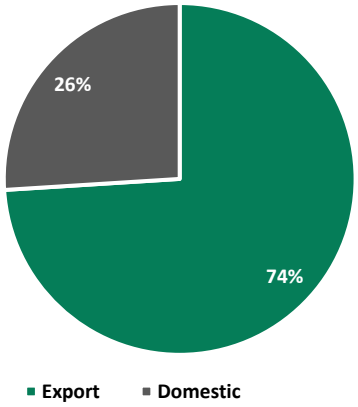
- The revenue breakup forms 64% from industrial salt, 33% from bromine & 3% from sulphate of potash as on FY24.
- Bromine end user industries are pharmaceuticals, agrochemicals, flame retardants, water treatment, oil, gas & energy storage. Industrial salt is 100% exported and it is produced through solar evaporation method. Its end user industries include food & beverage, water treatment, oil & gas and chlor-alkali chemicals.
- The company export its products to 18 global customers in 13 countries & also to 24 domestic customers. Some of the key geographies which Archean export include China, Japan, South Korea, Qatar, Belgium and the Netherlands. The company enjoy relationships in excess of five years with seven out of our top ten customers.

Fig 73: Revenue Breakup (FY24)



Source: Company, SMIFS Research

Fig 74: Segmental revenue break-up (FY24)



Source: Company, SMIFS Research

Fig 75: Archean product portfolio

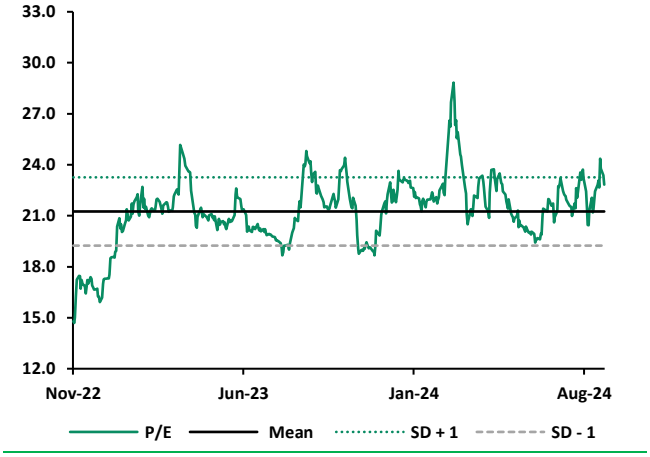
	Overview	Archean's Position	End User Industries	Export Business
Bromine	Bromine is the only non-metallic element that is a liquid at standard conditions. It is a member of the halogen family and is found naturally in seawater, underground brine deposits and other reservoirs.	Leadership position in Indian Bromine merchant sales.	Pharmaceuticals, agrochemicals, water treatment, flame retardants, Oil & Gas and Energy storage.	40-50%
Industrial Salt	There are ~14,000 commercial uses of salt, a source of Sodium and Chlorine which are basic components of an array of materials such as plastics, glass, synthetic rubber, cleansers, pesticides, paints, fertilizers, adhesives, etc.	Produced using the solar evaporation method	Chloralkali Chemicals, Food and beverages, Water treatment, Oil & Gas.	100%
Sulphate of Potash (SOP)	It is a high-end specialty fertilizer for chlorine-sensitive crops	Only manufacturer of SOP from natural sea brine in India.	Agrochemicals, Glass, Cosmetics, Medical uses, etc	65-70%
High-end Flame Retardant	Globally, properties worth billions of dollars are lost due to fire-related accidents every year. This makes anti-inflammatory agents or flame retardants crucial chemicals	-	Electronic industry, wire and cable compounds, rubbers, etc	-
Clear Brine Fluids	A chemical compound used with additives in well completion operations to make the solids free from brines. These fluids are extensively used in the oil & gas well-drilling industry	-	Produce calcium bromide which is used in oil drilling, organic synthesis and flow batteries	-
Pure Terephthalic Acid (PTA) Synthesis	Primarily used to produce polyster. A majority of PTA is consumed in the development of polyster resins, brominated catalyst is used for the production of PTA	-	Polyster resins such as polymer films, polyster fibre and yarn and PET material bottles.	-

Source: Company – Investor Presentation

Valuation and Recommendations

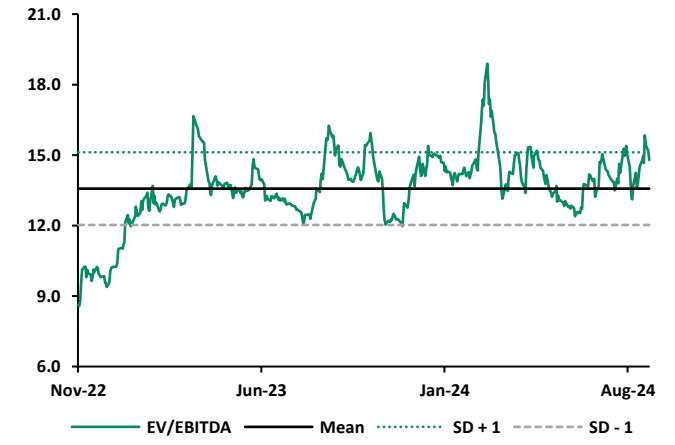
- A net cash company with strong entry barriers having strong relationship with its customers focusing on downstream expansion to diversify diversify across the value chain. Increasing volumes & adding new range of product segments thereby catering to entire value chain in bromine cycle is a big positive.
- We expect Archean to report a CAGR of 23%/24%/26% at Revenue/EBITDA/PAT level over FY24-27E. Also, long term contracts with customers (more than 1 year), robust cash conversion cycle (less than 2 months) & sustainable 20-25% ROCE, strong balance sheet with net cash position of Rs3.3bn deserves re-rating in multiple.
- The stock is trading at P/E of ~16.7x on Sept 26E EPS. We assign 25x as the target multiple and arrive at target price of Rs 1158 per share which is upside of ~50% from current valuations.
- Therefore, we initiate coverage with **BUY** rating on the stock.

Fig 76: 1-year forward P/E



Source: AceEquity, SMIFS Research

Fig 77: 1-year forward EV/EBITDA



Source: AceEquity, SMIFS Research

Fig 78: Key performance indicators

Y/E March (Rs mn)	FY20	FY21	FY22	FY33	FY24	FY25E	FY26E	FY27E
Volumes Data (In MT)								
Elemental Bromine	8855	14751	20293	18950	17300	21500	30100	36550
Industrial Salt	2905054	2879533	3585000	3756000	4244280	4244280	4668708	5100000
SOP	19042	2002	2400	8840	8200	13000	16900	27300
Bromine Derivatives						5900	9000	10800
Realization (Rs per kg)								
Elemental Bromine	243	233	298	378	247	210	225	235
Industrial	1.21	1.26	1.43	1.94	1.98	1.95	1.90	1.90
SOP	21	163	48	4	44	35	40	40
Bromine Derivatives						250	260	260
Revenue (Rs mn)								
Elemental Bromine	2155	3444	6052	7084	4274	4119	6154	7814
Industrial Salt	3520	3637	5129	7281	8401	8276	8871	9690
SOP	398	325	114	31	360	455	676	1092
Bromine Derivatives						1475	2340	2808
Oren Hydrocarbon						1000	2500	3000

Source: Company, SMIFS Research Estimates
Note: We have not modelled in Flame Retardant volumes in the bromine derivatives segment for the next 3 years as the project is kept on hold.

Quarterly financials, operating metrics and key performance indicators

Fig 79: Quarterly Financials

Y/E March (Rs mn)	Q2FY23	Q3FY23	Q4FY23	Q1FY24	Q2FY24	Q3FY24	Q4FY24	Q1FY25
Net Sales	**2,935**	**3,649**	**3,824**	**3,431**	**2,905**	**4,126**	**2,839**	**2,127**
Raw Materials	293	-64	-251	299	188	470	-79	-180
Employee Costs	115	265	244	203	192	182	147	147
Other Expenditure	1,341	1,850	1,887	1,583	1,570	2,020	1,900	1,448
EBITDA	**1,186**	**1,599**	**1,944**	**1,346**	**955**	**1,454**	**871**	**712**
Depreciation	169	168	173	175	175	177	177	186
Interest	350	194	34	30	19	19	17	17
Other Income	189	75	83	109	112	92	120	97
PBT	**856**	**1,312**	**1,820**	**1,250**	**873**	**1,351**	**797**	**606**
Tax	221	331	455	312	213	336	221	157
Tax rate (%)	*25.7%*	*25.2%*	*25.0%*	*24.9%*	*24.4%*	*24.9%*	*27.8%*	*26.0%*
PAT	**636**	**981**	**1,365**	**939**	**660**	**1,015**	**576**	**448**
YoY Growth (%)								
Revenue	*NA*	*18.7*	*2.6*	*-14.3*	*-1.0*	*13.1*	*-25.8*	*-38.0*
EBITDA	*NA*	*36.4*	*21.5*	*-16.4*	*-19.5*	*-9.1*	*-55.2*	*-47.1*
PAT	*NA*	*100.0*	*67.4*	*11.2*	*3.8*	*3.5*	*-57.8*	*-52.2*
QoQ Growth (%)								
Revenue	*-26.7*	*24.3*	*4.8*	*-10.3*	*-15.3*	*42.1*	*-31.2*	*-25.1*
EBITDA	*-26.4*	*34.9*	*21.5*	*-30.7*	*-29.1*	*52.4*	*-40.1*	*-18.3*
PAT	*-24.7*	*54.2*	*39.2*	*-31.2*	*-29.7*	*53.8*	*-43.3*	*-22.1*
Margin (%)								
Gross Profit	*90.0*	*101.8*	*106.6*	*91.3*	*93.5*	*88.6*	*102.8*	*108.5*
EBITDA	*40.4*	*43.8*	*50.8*	*39.2*	*32.9*	*35.2*	*30.7*	*33.5*
PAT	*21.7*	*26.9*	*35.7*	*27.4*	*22.7*	*24.6*	*20.3*	*21.1*
Employee cost as % of sales	*3.9*	*7.3*	*6.4*	*5.9*	*6.6*	*4.4*	*5.2*	*6.9*
Other expenses as % of sales	*45.7*	*50.7*	*49.3*	*46.1*	*54.1*	*49.0*	*66.9*	*68.1*
Volumes in MT								
Elemental Bromine (Excl. Captive)	4588	4000	4391	4273	3400	5000	4800	4700
Industrial Salt	690187	1100000	997000	1060000	1000000	1300000	930000	660000
SOP	0	582	104	382	3800	4300	820	666
Revenue (Rs in mn)								
Elemental Bromine	1,732	1,608	1,685	1,511	823	1,070	1,020	937
Industrial Salt	1,242	2,044	2,103	1,887	1,844	2,745	1,790	1,170
SOP	-	36	38	34	139	184	29	21
Realization (Rs per kg)								
Elemental Bromine	377.5	401.9	383.6	353.7	242.1	214.0	212.5	199.4
Industrial Salt	1.8	1.9	2.1	1.8	1.8	2.1	1.9	1.8
SOP	0.0	61.9	363.0	88.7	36.6	42.8	35.4	31.5

Source: Company, SMIFS Research

Industry Comparison (Domestic & Global)

Fig 80: Domestic Industry Comparison *(In Rs mn)*

Company Name	Net Sales				EBITDA				PAT				EBITDA Margin (%)				PAT Margin (%)			
	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E
Archean Chemical Industries	**14,411**	**13,301**	**15,613**	**20,857**	**6,340**	**4,627**	**5,179**	**7,179**	**3,826**	**3,190**	**3,563**	**5,041**	44.0%	34.8%	33.2%	34.4%	26.5%	24.0%	22.8%	24.2%
Apcotex Industries	10,799	11,246	14,090	17,058	1,585	1,139	1,489	2,345	1,079	539	774	1,425	14.7%	10.1%	10.6%	13.7%	10.0%	4.8%	5.5%	8.4%
Galaxy Surfactants	44,640	37,944	42,028	47,796	5,683	4,622	5,265	6,242	3,810	3,015	3,404	4,150	12.7%	12.2%	12.5%	13.1%	8.5%	7.9%	8.1%	8.7%
PCBL	57,741	64,198	90,284	1,05,511	7,312	10,373	15,963	19,505	4,418	4,909	5,827	7,992	12.7%	16.2%	17.7%	18.5%	7.7%	7.6%	6.5%	7.6%
NOCIL	16,166	14,447	14,735	16,317	2,527	1,950	1,944	2,532	1,492	1,330	1,192	1,615	15.6%	13.5%	13.2%	15.5%	9.2%	9.2%	8.1%	9.9%
Aarti Industries	66,186	63,723	83,586	1,04,511	10,890	9,766	14,030	17,814	5,452	4,165	5,914	8,628	16.5%	15.3%	16.8%	17.0%	8.2%	6.5%	7.1%	8.3%

Source: Bloomberg & SMIFS Research Estimates

Company Name	CAGR FY23-26E (%)			ROE (%)				Dividend Yield (%)				P/E (x)				EV/EBITDA (x)			
	Rev	EBITDA	PAT	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E
Archean Chemical Industries	**13.1%**	**4.2%**	**9.6%**	**45.2%**	**20.4%**	**19.3%**	**22.8%**	**0.4%**	**0.8%**	**0.6%**	**0.7%**	**18.9**	**22.9**	**26.8**	**18.9**	**11.1**	**15.2**	**17.4**	**12.1**
Apcotex Industries	16.5%	13.9%	9.7%	24.8%	10.8%	14.0%	22.5%	1.1%	1.1%	1.4%	1.5%	24.9	48.6	31.2	17.0	17.2	23.7	16.3	10.0
Galaxy Surfactants	2.3%	3.2%	2.9%	22.0%	14.8%	14.7%	15.9%	0.8%	1.0%	1.0%	1.1%	26.0	31.0	31.1	25.5	17.6	19.7	19.4	16.1
PCBL	22.3%	38.7%	21.8%	16.2%	16.1%	15.9%	18.3%	4.5%	2.7%	1.4%	1.4%	10.4	15.6	26.1	19.1	7.4	11.6	12.1	9.9
NOCIL	0.3%	0.1%	2.7%	10.0%	8.2%	6.9%	8.9%	1.2%	1.3%	1.1%	1.2%	27.2	29.7	42.2	31.2	15.0	17.8	23.5	18.0
Aarti Industries	16.4%	17.8%	16.5%	11.6%	8.2%	10.7%	14.0%	0.4%	0.3%	0.3%	0.3%	47.1	47.4	45.1	30.9	26.0	23.4	21.5	16.9

Source: Bloomberg & SMIFS Research Estimates

Fig 81: Global Industry Comparison (FY24 of Archean vs CY23 for others)

(In Rs mn)	Archean Chemical	Israel Chemical (ICL)	Albemarle Corporation
Revenue	**13300.9**	**622168.1**	**793991.1**
YoY Growth (%)	**-7.7%**	**-21.0%**	**38.0%**
Gross Profit	**12424.2**	**220516.3**	**97908.0**
Gross Margin (%)	**93.4%**	**35.4%**	**12.3%**
EBITDA	**4626.6**	**138452.2**	**60273.6**
EBITDA Margin (%)	**34.8%**	**22.3%**	**7.6%**
PAT	**3189.7**	**53416.0**	**129905.3**
PAT Margin (%)	**24.0%**	**8.6%**	**16.4%**
EPS	**25.8**	**41.3**	**1107.1**
ROE	**20.4%**	**12.3%**	**27.3%**

Source: Bloomberg & SMIFS Research Estimates

- At first look, comparing Archean with its global counterparts, gives an impression that Archean has superior business model leading to better gross margins, however the other 2 companies are also into other businesses apart from bromine & Salt, hence we cannot compare directly.
- ICL Industrial Products is the world's largest manufacturer of elemental bromine. In 2023, ICL produced approx. 143 thousand tonnes of elemental bromine out of potential annual maximum production capacity of approximately 280 thousand tonnes.
- Lanxess and Albemarle produce bromine primarily from underground brine sources in the US. Albemarle also has a joint venture with a Jordanian company to produce bromine and bromine compounds on the Jordanian side of the Dead Sea.

Financial Statements (Consolidated)

Income Statement					
YE March (Rs mn)	FY23	FY24	FY25E	FY26E	FY27E
Revenues	**14,411**	**13,301**	**15,613**	**20,857**	**24,752**
Raw Materials	27	877	770	1,082	1,263
% of sales	*0.2*	*6.6*	*4.9*	*5.2*	*5.1*
Personnel	720	724	996	1,309	1,515
% of sales	*5.0*	*5.4*	*6.4*	*6.3*	*6.1*
Other Expenses	7,323	7,073	8,668	11,286	13,102
% of sales	*50.8*	*53.2*	*55.5*	*54.1*	*52.9*
EBITDA	**6,340**	**4,627**	**5,179**	**7,179**	**8,873**
Other Income	433	433	439	452	592
Depreciation & Amortization	686	703	780	817	853
EBIT	**6,086**	**4,356**	**4,838**	**6,814**	**8,611**
Finance cost	970	85	67	63	53
Core PBT	**4,684**	**3,839**	**4,333**	**6,300**	**7,966**
Exceptional items	-	-	-	-	-
PBT	**5,117**	**4,272**	**4,771**	**6,752**	**8,558**
Tax-Total	1,291	1,082	1,209	1,710	2,168
Tax Rate (%) - Total	*25.2*	*25.3*	*25.3*	*25.3*	*25.3*
Reported PAT	**3,826**	**3,190**	**3,563**	**5,041**	**6,390**
Share of loss of an associate	-	-	-	-	-
Non-controlling interest	-	-	-	-	-
Adjusted PAT	**3,826**	**3,190**	**3,563**	**5,041**	**6,390**

Source: Company, SMIFS Research Estimates

Key Ratios					
YE March	FY23	FY24	FY25E	FY26E	FY27E
Growth Ratio (%)					
Revenue	27.5	-7.7	17.4	33.6	18.7
EBITDA	35.7	-27.0	11.9	38.6	23.6
Adjusted PAT	103.3	-16.6	11.7	41.5	26.8
Margin Ratios (%)					
Gross Profit	99.8	93.4	95.1	94.8	94.9
EBITDA	44.0	34.8	33.2	34.4	35.8
EBIT	42.2	32.8	31.0	32.7	34.8
Core PBT	32.5	28.9	27.7	30.2	32.2
Adjusted PAT	26.5	24.0	22.8	24.2	25.8
Return Ratios (%)					
ROE	45.2	20.4	19.3	22.8	23.5
ROCE	34.2	19.7	18.7	22.3	23.1
Turnover Ratios (days)					
Gross block turnover ratio	1.0	0.9	1.0	1.2	1.4
Adj CFO / Adj PAT (%)	83.4	114.1	96.6	86.1	93.1
Inventory	42	35	40	45	45
Debtors	30	43	40	45	45
Creditors	24	27	30	35	35
Cash conversion cycle	48	50	50	55	55
Solvency Ratio (x)					
Debt-equity	0.0	0.1	0.0	0.0	0.0
Net debt/equity	-0.1	-0.2	-0.3	-0.4	-0.5
Gross debt/EBITDA	0.1	0.2	0.1	0.1	0.1
Current Ratio	3.3	5.4	5.4	5.7	6.9
Interest coverage ratio	6.3	51.5	72.4	108.8	161.1
Dividend					
DPS	2.5	4.5	5.0	5.5	6.0
Dividend Yield (%)	0.4	0.8	0.6	0.7	0.8
Dividend Payout (%)	8.1	17.4	17.3	13.5	11.6
Per share Ratios (Rs)					
Basic EPS (reported)	34.7	25.9	28.9	40.9	51.8
Adj EPS	31.0	25.8	28.9	40.9	51.8
Adj CEPS	36.7	31.5	35.2	47.5	58.7
Adj BV	116.3	137.9	161.8	197.1	242.9
Valuation (x)*					
Adj P/E	18.9	22.9	26.8	18.9	14.9
P/BV	5.0	4.3	4.8	3.9	3.2
EV/EBITDA	11.1	15.2	17.4	12.1	9.2
EV/Sales	4.9	5.3	5.8	4.2	3.3
Adj Mcap / Core PBT	14.9	18.0	20.7	13.7	10.2
Adj Mcap / Adj OCF	22.1	19.3	26.3	20.0	13.7

Source: Company, SMIFS Research Estimates

Balance Sheet					
YE March (Rs mn)	FY23	FY24	FY25E	FY26E	FY27E
Source of funds					
Equity Share Capital	246	247	247	247	247
Reserves & Surplus	14,064	16,769	19,714	24,077	29,727
Shareholders' Fund	**14,310**	**17,016**	**19,961**	**24,324**	**29,973**
Total loan funds	694	978	742	696	594
Other Liabilities	1,155	1,288	1,465	1,957	2,322
Total Liabilities	**16,159**	**19,282**	**22,168**	**26,976**	**32,889**
Application of funds					
Gross Block	14,689	15,751	16,985	17,620	18,254
Net Block	11,101	11,617	12,072	11,890	11,671
Capital WIP	362	462	500	514	529
Quasi Cash Investments	-	-	-	-	-
Other Investments	-	-	-	-	-
Other Non-Current Assets	**325**	**1,218**	**1,558**	**2,027**	**2,378**
Inventories	1,678	1,273	1,711	2,571	3,052
Sundry Debtors	1,177	1,564	1,711	2,571	3,052
Current Investments	2,101	3,499	3,499	3,499	3,499
Cash & bank balances	327	455	2,296	5,763	10,915
Other current assets	485	471	554	740	878
Total Current Assets	**5,767**	**7,262**	**9,771**	**15,145**	**21,396**
Sundry Creditors	**956**	**998**	**1,283**	**2,000**	**2,374**
Other current liabilities	440	278	449	599	711
Total Current Liabilities	1,395	1,276	1,732	2,599	3,084
Net Current Assets	**4,372**	**5,985**	**8,039**	**12,545**	**18,312**
Total Assets	**16,159**	**19,282**	**22,168**	**26,976**	**32,889**

Source: Company, SMIFS Research Estimates

Cash Flow					
YE March (Rs mn)	FY23	FY24	FY25E	FY26E	FY27E
Operating profit before WC changes	**6,739**	**4,819**	**5,179**	**7,179**	**8,873**
Net changes in working capital	-1,570	64	-375	-1,017	-600
Tax Paid	-208	-1,090	-1,209	-1,710	-2,168
Cash flow from operating activities	**4,961**	**3,794**	**3,595**	**4,451**	**6,105**
Adj. OCF	**3,189**	**3,641**	**3,442**	**4,343**	**5,950**
Capital expenditure	-988	-2,070	-1,273	-649	-649
Adj FCF	2,201	1,571	2,170	3,694	5,301
Cash flow from investing activities	**-2,903**	**-3,073**	**-834**	**-197**	**-57**
Debt	-8,234	381	-150	0	0
Dividend	0	-554	-617	-679	-740
Interest and Lease	-1,772	-153	-153	-109	-155
Cash flow from financing activities	**-2,120**	**-326**	**-920**	**-788**	**-896**
Net change in cash	**-62**	**395**	**1,841**	**3,467**	**5,153**

Source: Company, SMIFS Research Estimates

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