

India

**Underweight** (no change)

**Highlighted Companies**

**Asian Paints Limited**

**HOLD, TP Rs3015, Rs3143 close**

APNT's best-in-class volume growth (+34%) came at the cost of margins. Aggressive prices hikes (14-15%) in 3QFY22F should abate cost pressure.

**Atul Ltd**

**REDUCE, TP Rs6370, Rs8295 close**

With most product price spreads over raw materials under pressure, we expect gross margin to decline in coming quarters.

**Deepak Nitrite Ltd**

**REDUCE, TP Rs1325, Rs2106 close**

We expect the company's gross margin to decline going ahead and it is unlikely to meet Bloomberg consensus earnings estimates. We reiterate our Reduce rating on the stock.

**Summary Valuation Metrics**

P/E (x)	Mar22-F	Mar23-F	Mar24-F
Asian Paints Limited	105.57	75.57	61.44
Atul Ltd	37.8	32.39	27.06
Deepak Nitrite Ltd	32.52	31.08	28.63
P/BV (x)	Mar22-F	Mar23-F	Mar24-F
Asian Paints Limited	21.38	18.93	16.59
Atul Ltd	6.37	5.45	4.65
Deepak Nitrite Ltd	9.24	7.27	5.89
Dividend Yield	Mar22-F	Mar23-F	Mar24-F
Asian Paints Limited	0.5%	0.69%	0.85%
Atul Ltd	0.32%	0.37%	0.44%
Deepak Nitrite Ltd	0.28%	0.28%	0.28%

**Analyst(s)**



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# Chemicals - Overall

## Phenol and epoxy resins: Boundless froth

- Epoxy resin spreads are on the decline and base prices will also fall as ECH and BIS phenol prices slip in coming months – a positive for paints industry.
- Indian phenol prices enjoyed anti-dumping duty (ADD) protection. However, as ADD is removed and with supply chain easing, phenol prices are bound to fall.
- We reduce our TP for Deepak Nitrite to Rs1,325/share and reiterate REDUCE rating on the stock. We also maintain our REDUCE rating on Atul Limited.

### Froth in phenol, ECH, epoxy resins and BIS phenol-A prices

Globally, phenol is an oversupplied commodity. Against a demand of 11.4mt, capacity is 13.8mt. We expect 1.33mt of phenol capacity to be commissioned over the next three years in South East Asia and Europe, further exacerbating the demand-supply imbalance. ECH (epichlorohydrin) prices went up because of a sudden shutdown in Chinese capacity. Please note that China used to be self-sufficient in ECH, but India is the second-largest global net importer of ECH. BIS phenol-A is produced by condensation of phenol and acetone. Rising acetone prices (because of Covid-19) and phenol (supply chain disruption) led to high BIS phenol-A prices. Please note that BIS phenol-A is an oversupplied commodity (demand was 6.2mt and capacity was 7.8mt in CY20). Supply chains are normalising and a new variant of Covid won't wreak havoc because people have already learnt to live amid Covid protocols.

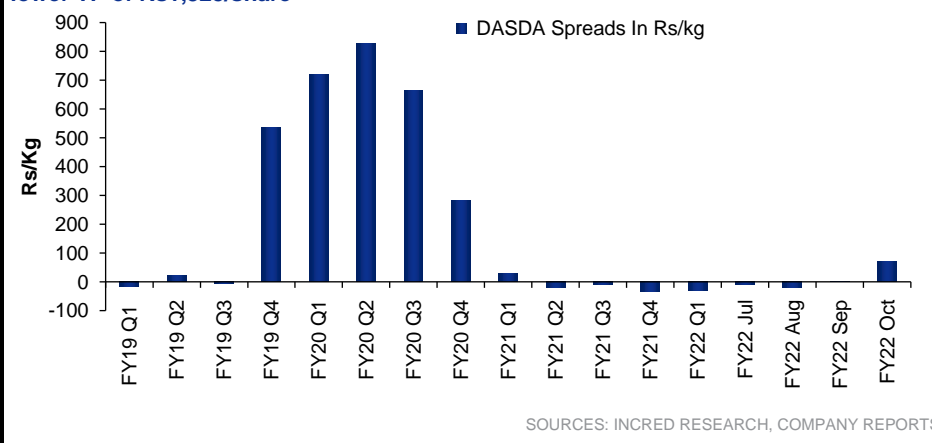
### Phenol spreads and epoxy resin prices may fall in coming weeks

In Indian market, phenol prices were artificially high because of anti-dumping duty (ADD) of US\$70-250/t, which kept domestic prices higher than international prices. Global phenol spreads have already eased and it's a matter of time before Indian spreads also fall. Please note that China is neither a top -10 net exporter or importer of this commodity and hence, phenol is certainly not a China+1 play. Epoxy resin spreads are already at their four-year bottom, but absolute prices are up because of higher ECH and BIS phenol-A prices. However, as shown in this report, that higher ECH and BIS phenol-A prices are because of transient events and hence, their prices are set to fall. Falling ECH and BIS phenol-A prices will lead to a decline in absolute prices of epoxy resins as well. The fall in epoxy resin prices is good for India's paints industry.

### We cut our TP on Deepak Nitrite to Rs1,325/share; Retain Reduce

With the likely fall in phenol spreads, consensus earnings estimates are at risk. We reduce our target price (TP) on Deepak Nitrite to Rs1,325/share (from Rs1,745 earlier). We value Deepak Nitrite at 18x FY24F EPS (a 50% premium to historical average) to arrive at our TP of Rs1,325/share. We also maintain Reduce rating on Atul Limited with a TP of Rs6,370/share.

**Figure 1: DASDA will not be a saviour for Deepak Nitrite; retain REDUCE rating with a lower TP of Rs1,325/share**



## Phenol and epoxy resins: Boundless froth

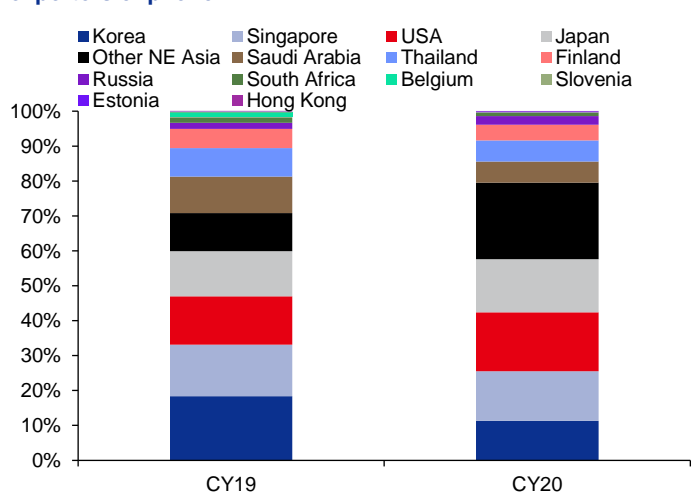
In this report, we attempt to decipher the long-term trend in bulk chemicals. We have analysed phenol, DASA (diamino stilbene disulfonic acid), epoxy resins, ECH, and BIS Phenol-A. Based on Comtrade data on import and export of these chemicals, we decipher that contribution margins of all these chemicals are at a multi-decade high. Assigning 30x-40x PE multiple to these earnings is fraught with risk. We have REDUCE rating on Atul Ltd, Deepak Nitrite, and Aarti Industries.

### Phenol group: Multi-year high margins, cut Deepak Nitrite TP to Rs1,325/share

Indian phenol manufacturer Deepak Nitrite uses benzene and propylene to manufacture phenol. The phenol manufacturing process yields acetone. One kg of phenol yields 0.60kg of acetone during the production process.

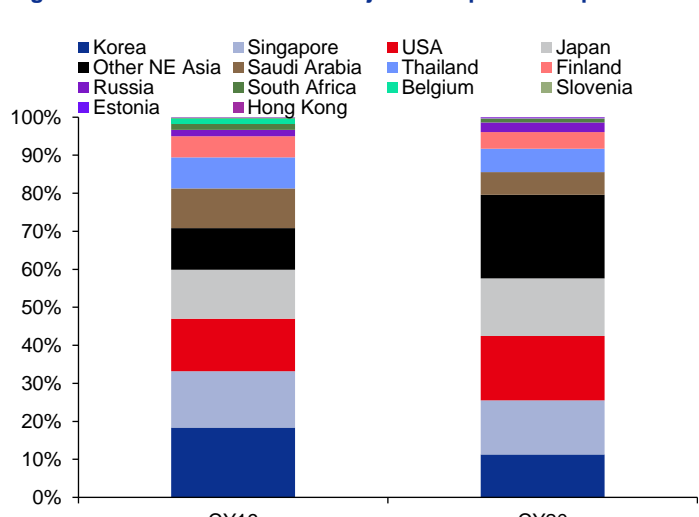
### USA, Korea and North East Asia are major exporters of phenol, while China and India are major importers ➤

**Figure 2: Korea, Singapore, Japan and USA are major net exporters of phenol**



SOURCES: INCRED RESEARCH, COMPANY REPORTS

**Figure 3: China and India are major net importers of phenol**



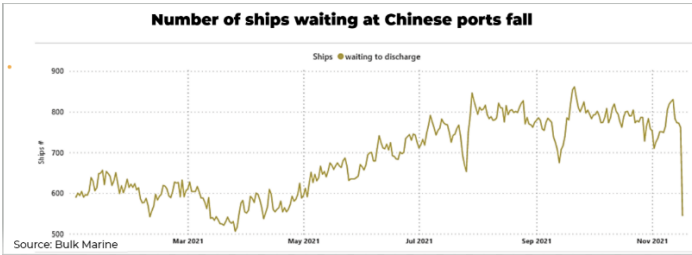
SOURCES: INCRED RESEARCH, COMPANY REPORTS

### Phenol is transported in special chemical vessels through the sea route ➤

Phenol is transported in a liquid form in special chemical vessels. High freight rates and congestion at ports made it more difficult to transport phenol.

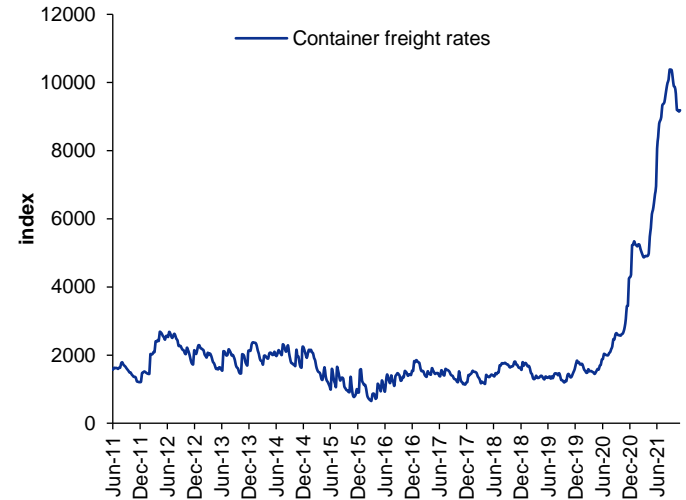
**Worst of shipping and freight problems are over ➤**

**Figure 4: Chinese shipping congestion is easing as the number of ships waiting at ports falls sharply**



SOURCES: WWW.STEELMINT.COM, INCRED RESEARCH

**Figure 5: Bloomberg container freight index has also peaked out**

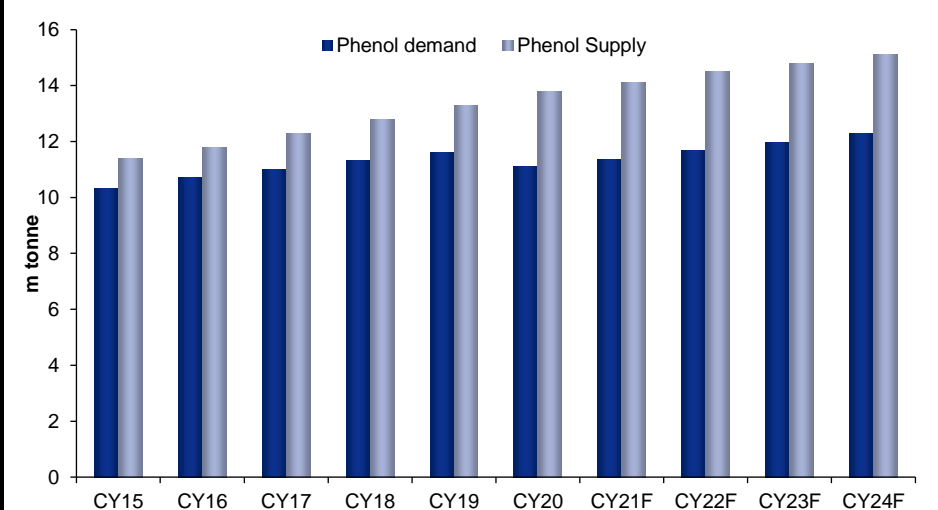


SOURCES: COMPANY REPORTS, INCRED RESEARCH

**Phenol is an oversupplied commodity globally ➤**

Globally, phenol is an oversupplied commodity. Against a demand of 11.4mt, capacity is 13.8mt. We expect 1.33mt of phenol capacity to be commissioned over the next three years in South East Asia and Europe, further exacerbating the demand-supply imbalance. Over the last five years, global phenol demand grew at a 1.5% CAGR and we factor in a 2.5% CAGR in demand over the next four years (to account for a lower base in CY20). However, with growth uncertainty, demand can only surprise us on the downside.

**Figure 6: Globally, phenol is an oversupplied commodity, and it will remain so in the foreseeable future**

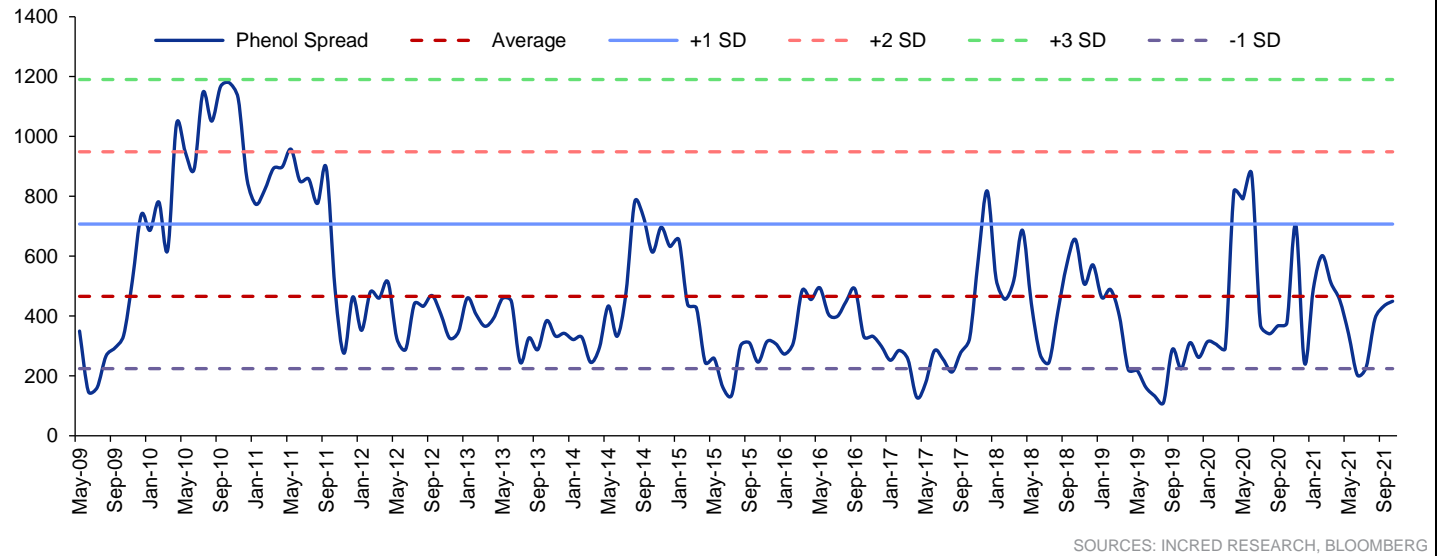


SOURCES: COMPANY REPORTS, INCRED RESEARCH

**Phenol spreads have come down as the Covid pandemic is easing and the worst of shipping crisis is behind us ►**

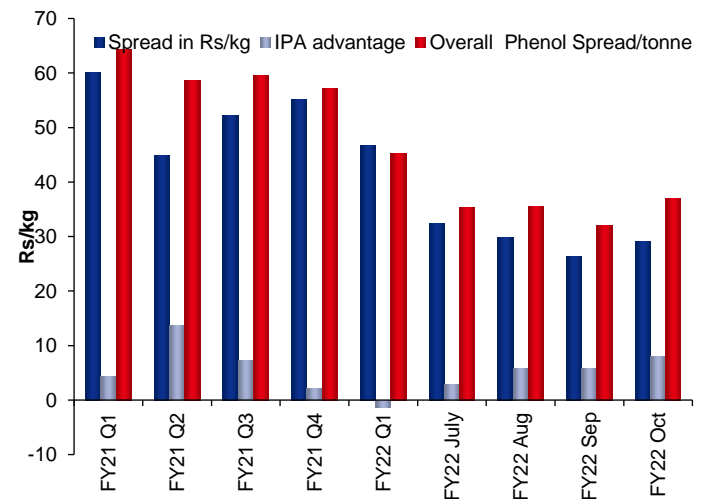
We calculate phenol spreads as **spread = phenol price + 0.62 \* acetone prices - 0.97 \* benzene - 0.71 \* propylene**. As the shipping problem is easing, phenol spreads are coming down.

**Figure 7: Global phenol spreads have declined from their May 2021 peak and are trading at historical average now**

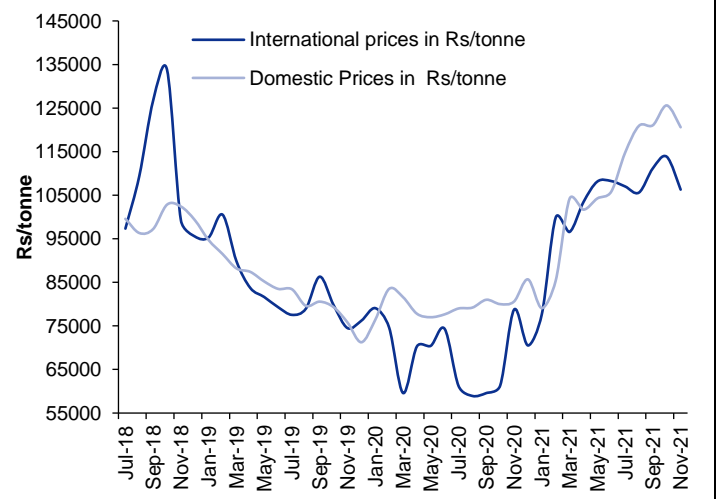


**In India, Deepak Nitrite minted money only because of anti-dumping duty of US\$70-250/t ►**

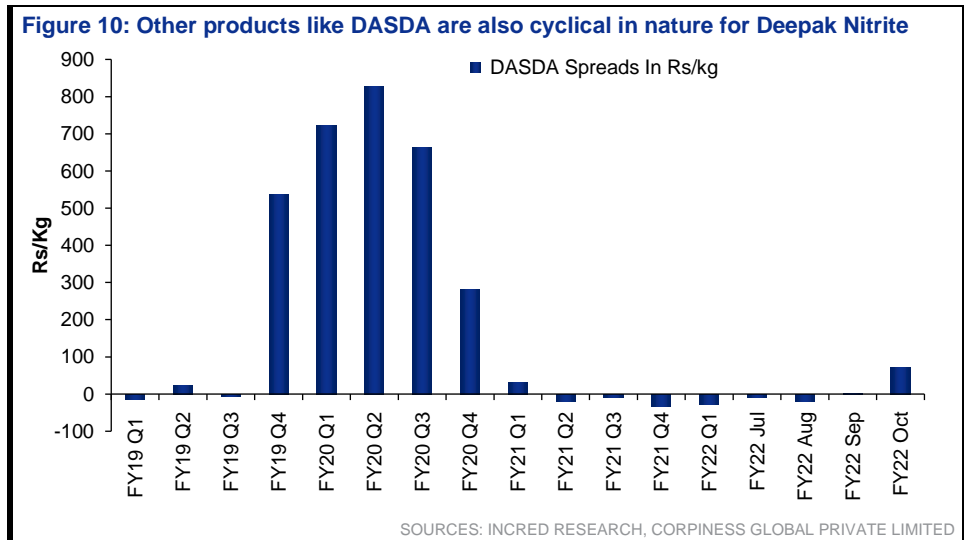
**Figure 8: Deepak Nitrite minted money during FY21 and a better part of FY22 as well**



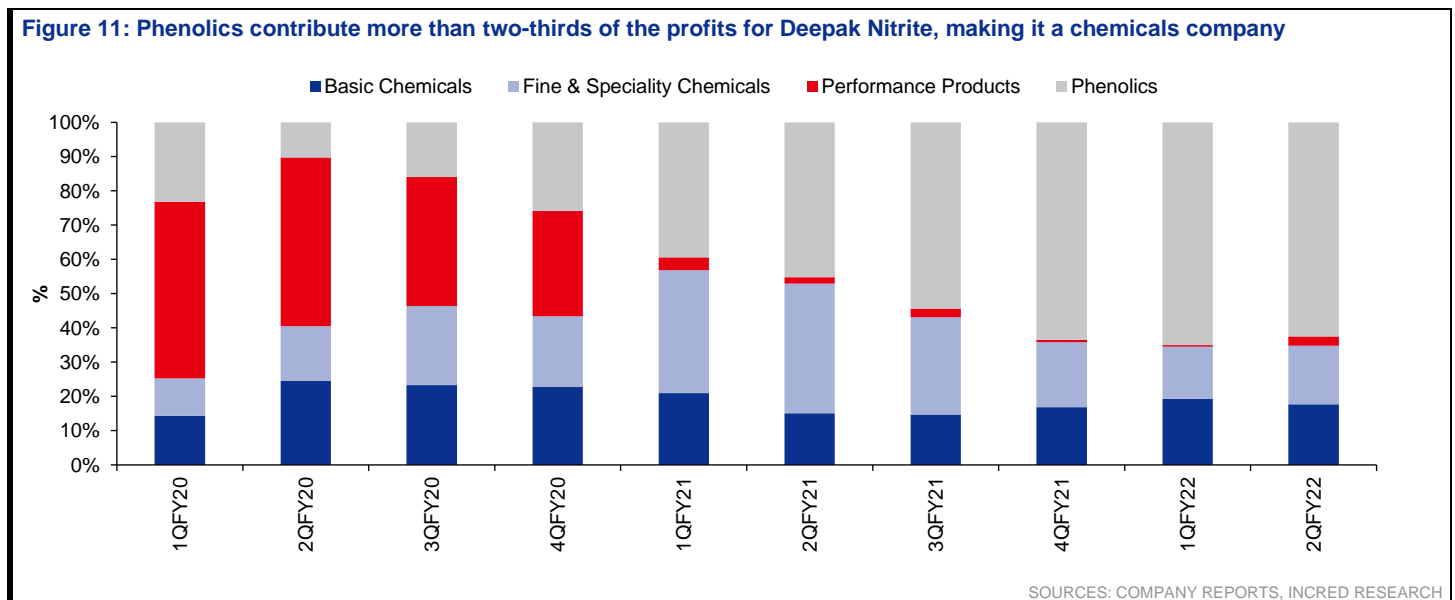
**Figure 9: Anti-dumping duty provided a big cushion during downcycles for Deepak Nitrite**



**Deepak Nitrite's other products like DASDA (diamino stilbene disulfonic acid) are also cyclical in nature ➤**



**Other chemicals don't contribute much to earnings ➤**

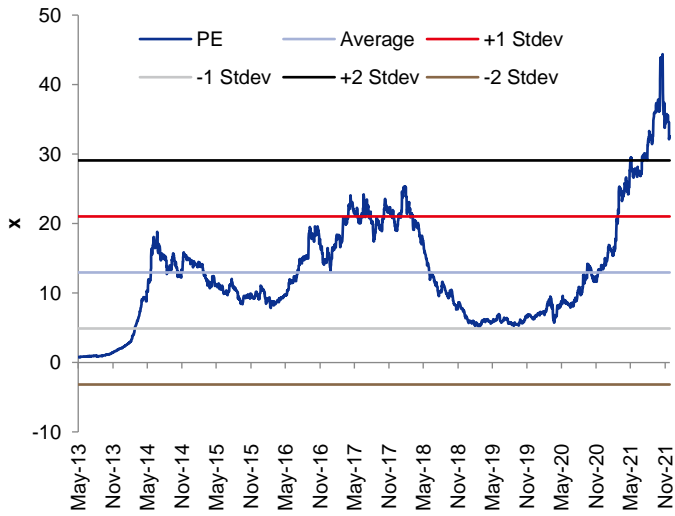


**With earnings volatility on cards, it can trade at a much lower multiple ➤**

Removal of anti-dumping duty on phenol has made Deepak Nitrite like any other commodity chemicals company. While in future it may change its shape and become a specialty chemicals company, but that is much far away. Meanwhile, the stock doesn't deserve to trade at 7x sales and 35x EPS on cyclical peak earnings. We reduce our TP on Deepak Nitrite to 18x FY24F EPS and maintain REDUCE rating on it with a new TP of Rs1,325 (from Rs1745 earlier).

**We reduce our target multiple to 18x, a 50% premium to historical average, and reduce TP to Rs1,325/ share ➤**

**Figure 12: For a commodity chemicals company, Deepak Nitrite is enjoying astronomical valuations**



SOURCES: INCRED RESEARCH, COMPANY REPORTS

**Figure 13: We cut our TP on it to Rs1,325/share and maintain REDUCE rating**

Valuation	
FY23F EPS	67.74
FY24F EPS	73.54
PE multiple	18.0
Target price	1,325

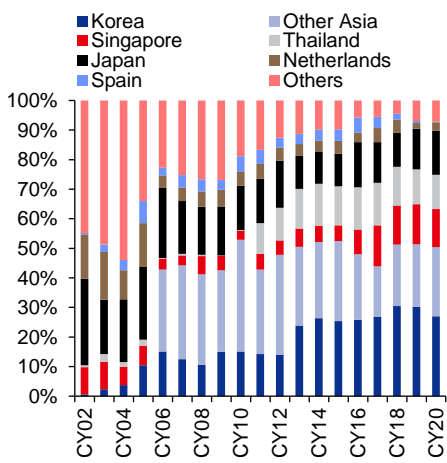
SOURCES: INCRED RESEARCH, COMPANY REPORTS

## BIS phenol-A, ECH and epoxy resins: Best is over, it's back to basics; BUY user industry stocks i.e. paints

BIS Phenol-A, ECH and epoxy resins: Exports of all these commodities are concentrated in five-to-six countries. This makes global supply highly prone to supply-chain shocks. We reckon the same happened last year and the spreads of epoxy resins as well as prices of ECH (epichlorohydrin) skyrocketed.

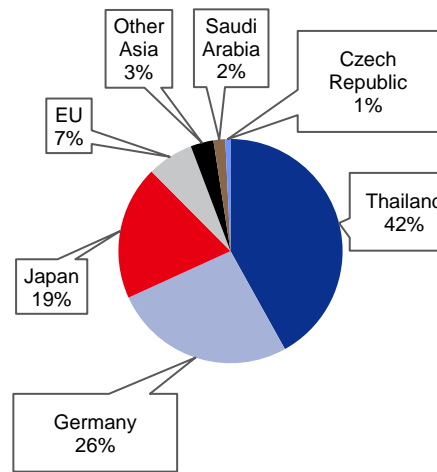
### Global exports of ECH, epoxy resins and BIS phenol-A concentrated in five-to-six countries

**Figure 14: 70% exports of BIS phenol-A are concentrated in South East Asia**



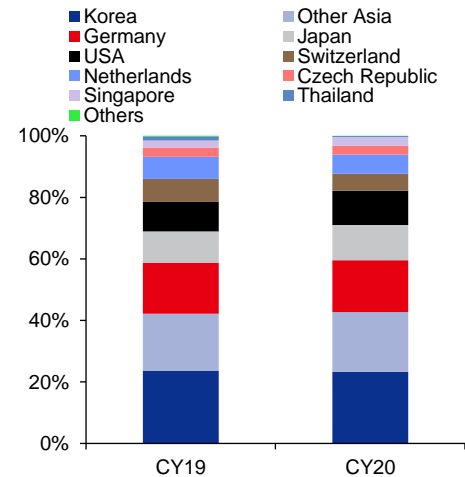
SOURCES: INCRED RESEARCH, COMTRADE

**Figure 15: Even 87% of global ECH net exports concentrated in three countries**



SOURCES: INCRED RESEARCH, COMTRADE DATA FOR CY20

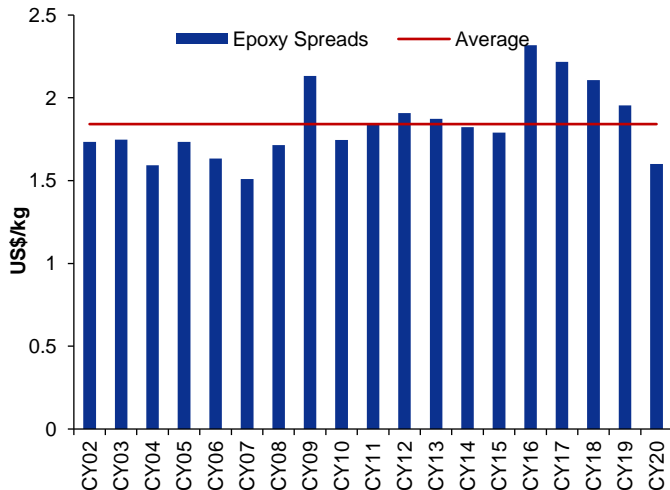
**Figure 16: In case of epoxy resins, two-thirds of exports concentrated in five nations**



SOURCES: INCRED RESEARCH, COMTRADE

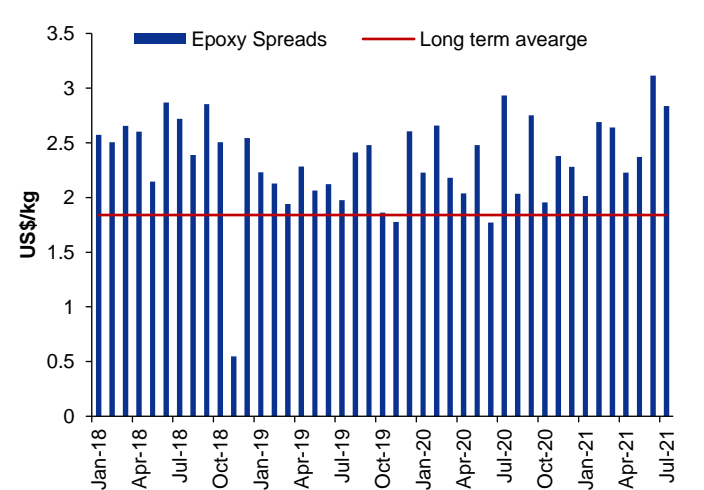
### Epoxy resin spreads just shot up in the past few months but are normalizing as supply chain is stabilizing

**Figure 17: While last 20 years' average spread has been US\$1.84/kg**



SOURCES: INCRED RESEARCH, COMTRADE DATA

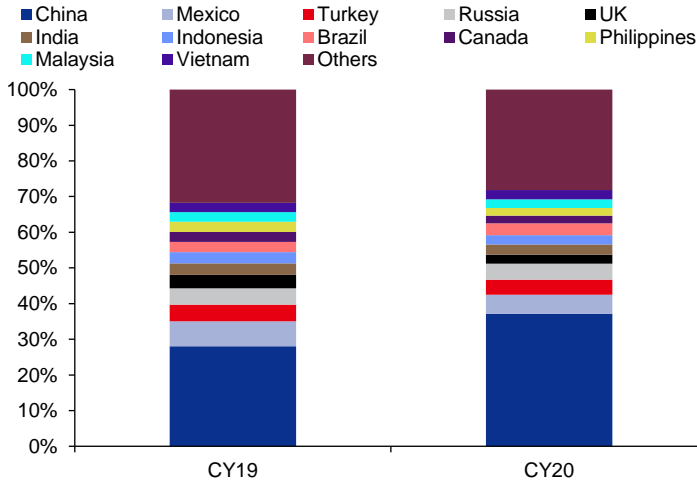
**Figure 18: ...the last 24 months' average spread has been 30% higher than last two decades' average**



SOURCES: INCRED RESEARCH, COMTRADE DATA

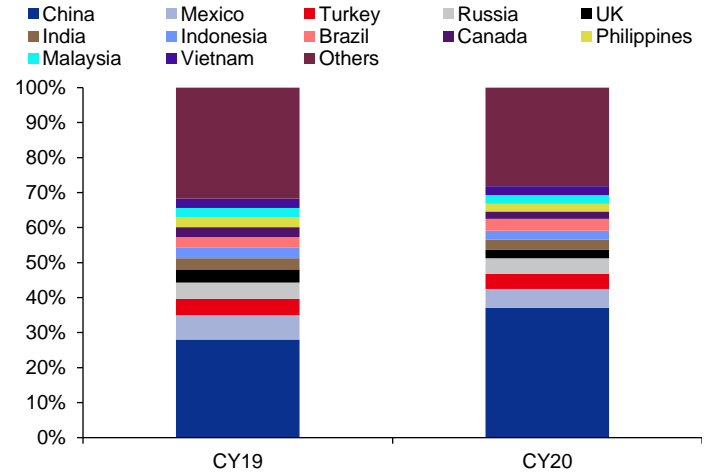
**India and China are major net importers of epoxy resins ➤**

**Figure 19: India and China are major net Importers of epoxy resins**



SOURCES: INCRED RESEARCH, COMTRADE DATA

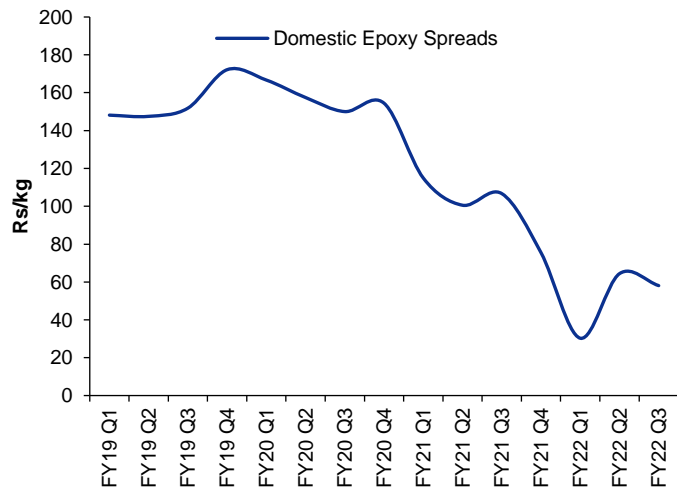
**Figure 20: While Korea, Japan, Germany and other Asian nations are major exporters of epoxy chemicals**



SOURCES: INCRED RESEARCH, COMTRADE DATA

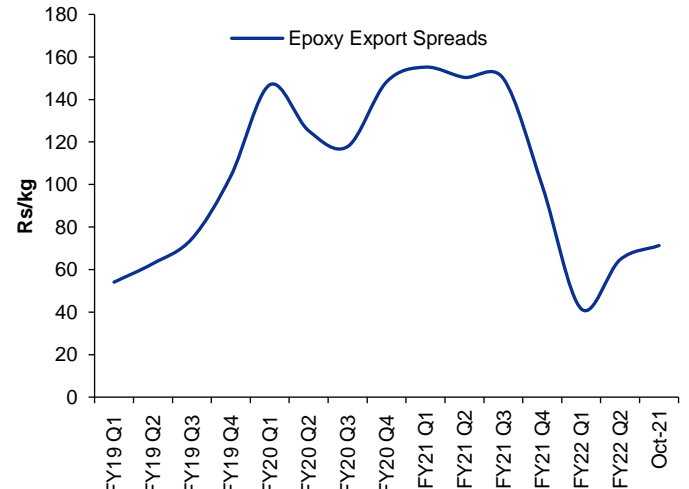
**Epoxy spreads are on the decline and as ECH/BIS phenol-A prices fall, their absolute prices will fall as well ➤**

**Figure 21: Domestic epoxy spreads are on the decline for some time now**



SOURCES: BLOOMBERG, INCRED RESEARCH

**Figure 22: However, Atul Limited's export spreads have also collapsed in the recent past**

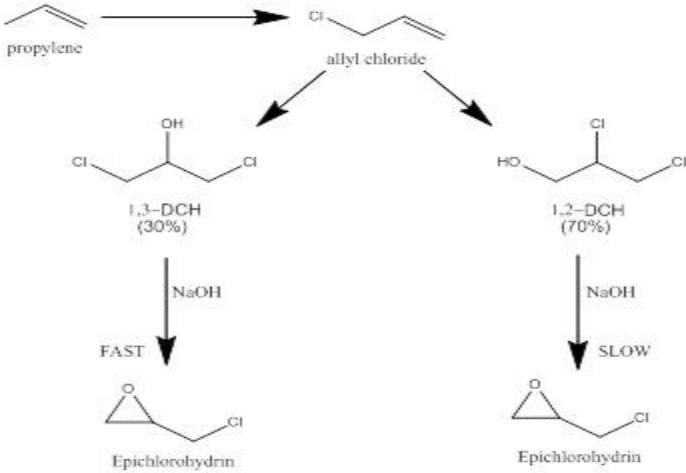


SOURCES: BLOOMBERG, INCRED RESEARCH



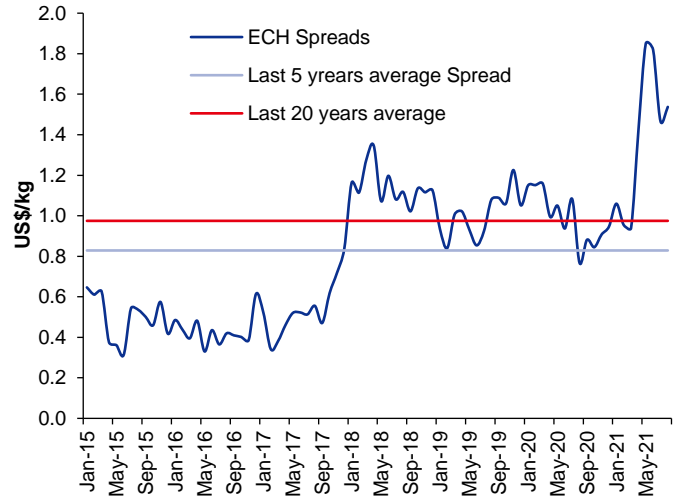
**ECH spreads just shot up and now returning to their mean level ➤**

**Figure 23: The most prevalent method to produce ECH is from chlorination of the propylene route**



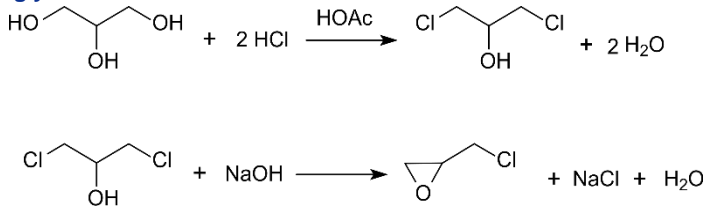
SOURCES: INCRED RESEARCH, COMPANY REPORTS

**Figure 24: Even from the propylene route, the spreads appear to have peaked out**



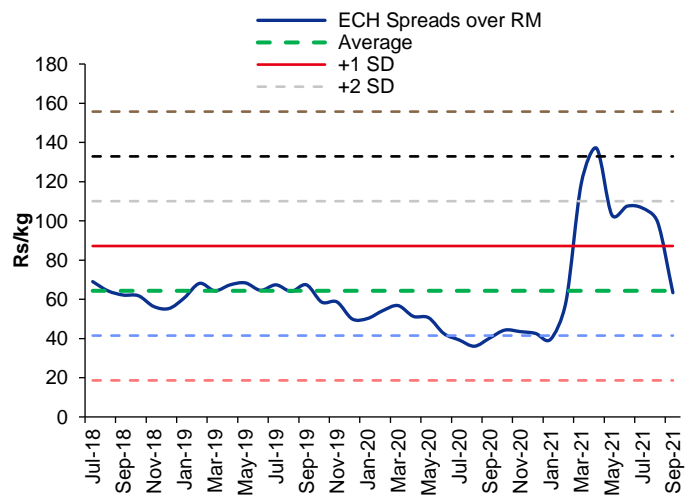
SOURCES: INCRED RESEARCH, COMTRADE DATA

**Figure 25: The second method to produce ECH is from the glycerin route**



SOURCES: INCRED RESEARCH, COMPANY REPORTS

**Figure 26: The spreads from the glycerin route are back to their medium-term mean**

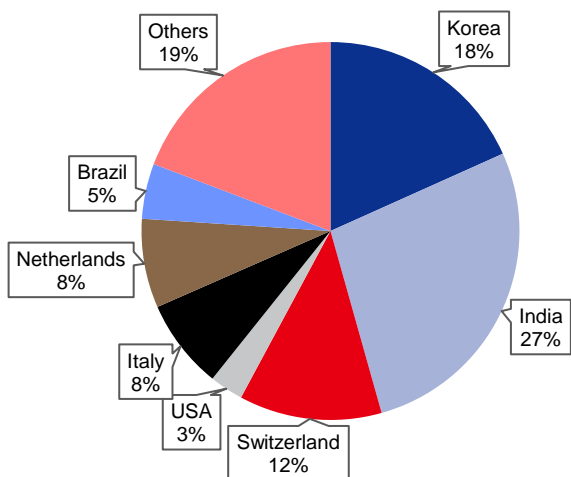


SOURCES: INCRED RESEARCH, BLOOMBERG

**Is ECH demand higher than capacity or just like other commodities it's just a supply chain issue? It's the latter ➤**

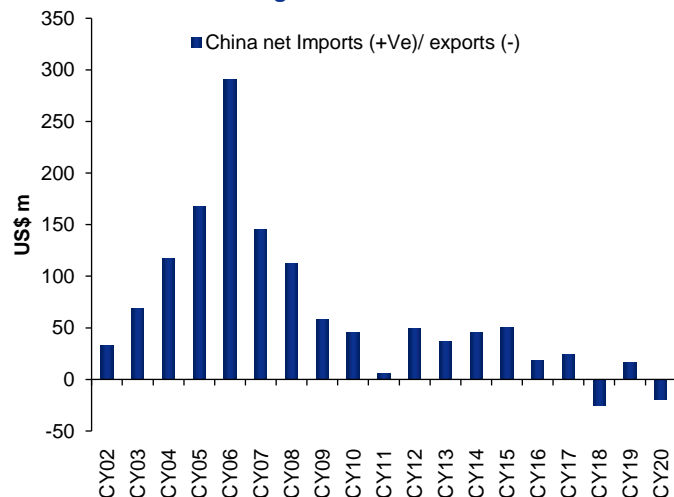
ECH is oversupplied globally. The key disruption has been in the recent past when one of ECH production facilities in China witnessed production suspension. This created a global demand-supply mismatch, and the Covid pandemic added to supply-chain problems.

**Figure 27: India and Korea are biggest importers of ECH**



SOURCES: INCRED RESEARCH, COMTRADE DATA

**Figure 28: For the past few years, China has been self-sufficient and hence, a sudden closure of production capacity created an imbalance in global trade**

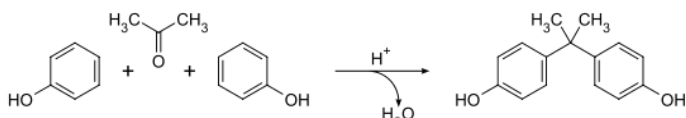


SOURCES: INCRED RESEARCH, COMTRADE DATA

**BIS phenol-A is produced from phenol and acetone, its spreads exploded after the Covid crisis ➤**

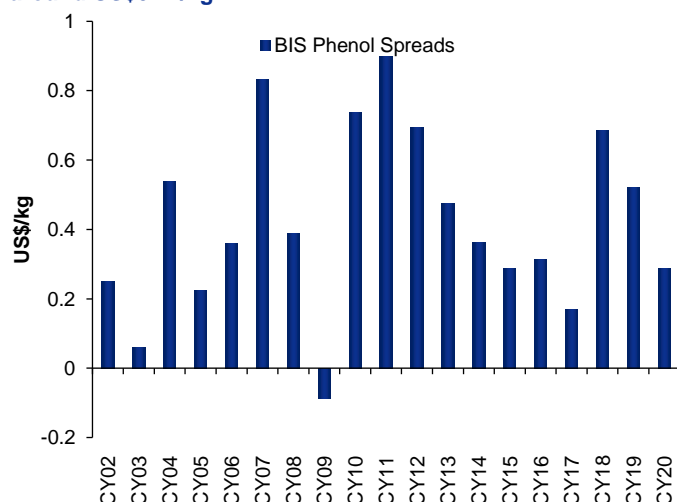
BIS phenol-A is produced by an acid-catalysed condensation reaction of two molecules of phenol and one molecule of acetone. Normally, H<sub>3</sub>PO<sub>4</sub> is used as a catalyst for the reaction.

**Figure 29: BIS phenol-A is produced from condensation of phenol and acetone in the presence of H<sub>3</sub>PO<sub>4</sub> catalyst**



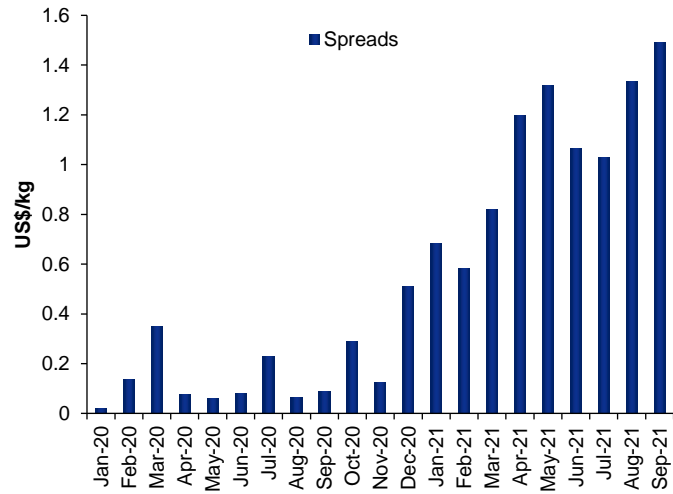
SOURCES: COMPANY REPORTS, INCRED RESEARCH

**Figure 30: Historically, BIS phenol-A spreads remained at around US\$0.42/kg**



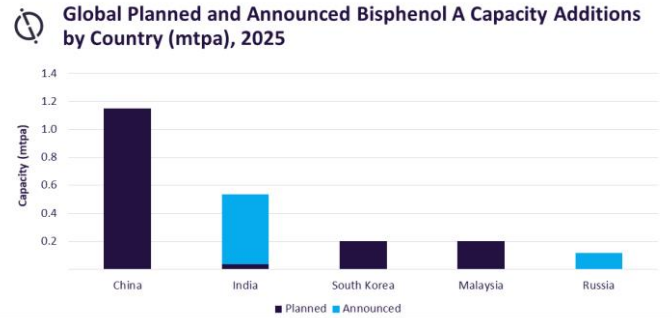
SOURCES: INCRED RESEARCH, COMTRADE DATA

**Figure 31: However, in the recent past these spreads have exploded, particularly after the Covid outbreak**



SOURCES: INCRED RESEARCH, COMTRADE DATA

**Figure 32: Global demand for BIS phenol-A was 6.2mt in 2020 whereas capacity stood at 7.8mt; capacity to touch 10mt by 2025F**



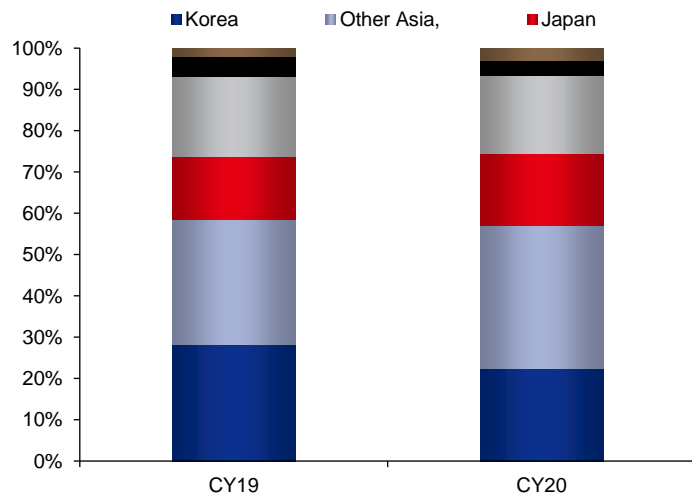
Source: Petrochemicals Analytics, GlobalData Oil and Gas Intelligence Center

GlobalData

SOURCES: INCRED RESEARCH, ASIA TO DOMINATE GLOBAL BISPHENOL A CAPACITY ADDITIONS BY 2025, SAYS GLOBALDATA - GLOBALDATA

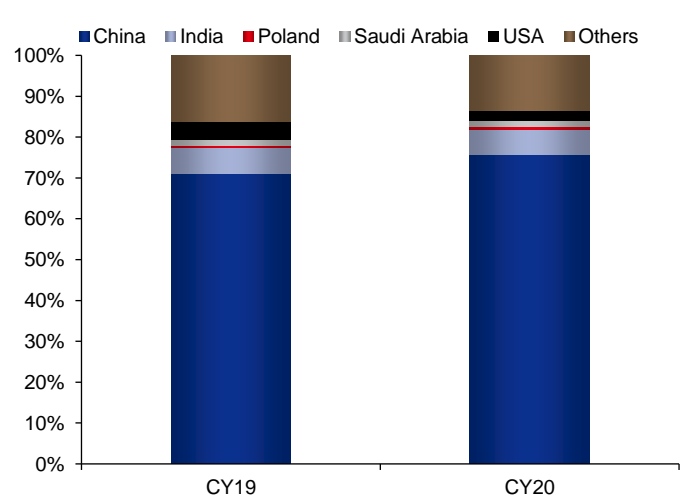
**BIS phenol-A global trade pattern indicates the vulnerability ➤**

**Figure 33: Korea and other South East Asian nations are major net exporters of BIS phenol-A**



SOURCES: INCRED RESEARCH, COMTRADE DATA

**Figure 34: China is the biggest importer followed by India**



SOURCES: INCRED RESEARCH, COMTRADE DATA

## BY THE NUMBERS (Deepak Nitrite Ltd)

<b>Profit &amp; Loss</b>					
(Rs mn)	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
<b>Total Net Revenues</b>	<b>42,297</b>	<b>43,598</b>	<b>48,154</b>	<b>52,056</b>	<b>56,343</b>
<b>Gross Profit</b>	<b>18,562</b>	<b>20,955</b>	<b>22,873</b>	<b>24,206</b>	<b>25,918</b>
<b>Operating EBITDA</b>	<b>10,258</b>	<b>12,470</b>	<b>13,583</b>	<b>14,326</b>	<b>15,410</b>
Depreciation And Amortisation	(1,397)	(1,526)	(1,561)	(1,790)	(1,896)
<b>Operating EBIT</b>	<b>8,861</b>	<b>10,944</b>	<b>12,022</b>	<b>12,536</b>	<b>13,514</b>
Financial Income/(Expense)	(1,149)	(742)	(430)	(399)	(319)
Pretax Income/(Loss) from Assoc.					
Non-Operating Income/(Expense)	352	215	215	215	215
<b>Profit Before Tax (pre-EI)</b>	<b>8,064</b>	<b>10,417</b>	<b>11,807</b>	<b>12,352</b>	<b>13,411</b>
Exceptional Items					
<b>Pre-tax Profit</b>	<b>8,064</b>	<b>10,417</b>	<b>11,807</b>	<b>12,352</b>	<b>13,411</b>
Taxation	(1,954)	(2,659)	(2,975)	(3,113)	(3,380)
Exceptional Income - post-tax					
<b>Profit After Tax</b>	<b>6,110</b>	<b>7,758</b>	<b>8,831</b>	<b>9,240</b>	<b>10,031</b>
Minority Interests					
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
<b>Net Profit</b>	<b>6,110</b>	<b>7,758</b>	<b>8,831</b>	<b>9,240</b>	<b>10,031</b>
Recurring Net Profit	6,110	7,758	8,831	9,240	10,031
<b>Fully Diluted Recurring Net Profit</b>	<b>6,110</b>	<b>7,758</b>	<b>8,831</b>	<b>9,240</b>	<b>10,031</b>

<b>Cash Flow</b>					
(Rs mn)	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
<b>EBITDA</b>	<b>10,258</b>	<b>12,470</b>	<b>13,583</b>	<b>14,326</b>	<b>15,410</b>
Cash Flow from Invt. & Assoc.					
Change In Working Capital	(1,112)	(441)	(1,364)	(679)	(747)
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense	133	111			
<b>Other Operating Cashflow</b>	<b>1,501</b>	<b>957</b>	<b>430</b>	<b>399</b>	<b>319</b>
Net Interest (Paid)/Received	(1,149)	(742)	(430)	(399)	(319)
Tax Paid	(1,985)	(2,365)	(2,975)	(3,113)	(3,380)
<b>Cashflow From Operations</b>	<b>7,647</b>	<b>9,990</b>	<b>9,244</b>	<b>10,534</b>	<b>11,284</b>
Capex	(4,174)	(2,096)	(4,655)	(1,500)	(1,500)
Disposals Of FAs/subsidiaries	14	10			
Acq. Of Subsidiaries/investments	3	(1,854)			
Other Investing Cashflow	(123)	(21)			
<b>Cash Flow From Investing</b>	<b>(4,279)</b>	<b>(3,962)</b>	<b>(4,655)</b>	<b>(1,500)</b>	<b>(1,500)</b>
Debt Raised/(repaid)	(1,088)	(5,217)	213	(1,000)	(1,000)
Proceeds From Issue Of Shares					
Shares Repurchased					
Dividends Paid	(1,060)	(4)	(800)	(800)	(800)
Preferred Dividends					
Other Financing Cashflow	(1,228)	(741)			
<b>Cash Flow From Financing</b>	<b>(3,376)</b>	<b>(5,961)</b>	<b>(587)</b>	<b>(1,800)</b>	<b>(1,800)</b>
Total Cash Generated	(8)	68	4,002	7,234	7,985
<b>Free Cashflow To Equity</b>	<b>2,280</b>	<b>812</b>	<b>4,802</b>	<b>8,034</b>	<b>8,785</b>
<b>Free Cashflow To Firm</b>	<b>4,516</b>	<b>6,771</b>	<b>5,019</b>	<b>9,433</b>	<b>10,103</b>

SOURCES: INCRED RESEARCH, COMPANY REPORTS

**BY THE NUMBERS...cont'd (Deepak Nitrite Ltd)**

<b>Balance Sheet</b>					
<b>(Rs mn)</b>	<b>Mar-20A</b>	<b>Mar-21A</b>	<b>Mar-22F</b>	<b>Mar-23F</b>	<b>Mar-24F</b>
Total Cash And Equivalents	314	2,202	5,128	12,178	20,059
Total Debtors	6,127	7,563	7,916	8,557	9,262
Inventories	3,945	3,827	4,618	4,992	5,403
Total Other Current Assets	1,177	1,175	1,175	1,175	1,175
<b>Total Current Assets</b>	<b>11,563</b>	<b>14,767</b>	<b>18,836</b>	<b>26,902</b>	<b>35,898</b>
Fixed Assets	20,043	20,596	23,854	23,564	23,168
Total Investments	24	25	25	25	25
Intangible Assets					
Total Other Non-Current Assets	457	214	214	214	214
<b>Total Non-current Assets</b>	<b>20,523</b>	<b>20,836</b>	<b>24,093</b>	<b>23,803</b>	<b>23,407</b>
Short-term Debt	2,484	31	2,484	2,484	2,484
Current Portion of Long-Term Debt					
Total Creditors	3,643	4,367	4,147	4,483	4,852
Other Current Liabilities	1,363	1,136	1,136	1,136	1,136
<b>Total Current Liabilities</b>	<b>7,490</b>	<b>5,535</b>	<b>7,768</b>	<b>8,104</b>	<b>8,473</b>
Total Long-term Debt	7,794	5,240	3,000	2,000	1,000
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	143	111	111	111	111
<b>Total Non-current Liabilities</b>	<b>7,937</b>	<b>5,352</b>	<b>3,111</b>	<b>2,111</b>	<b>1,111</b>
Total Provisions	940	1,250	968	968	968
<b>Total Liabilities</b>	<b>16,367</b>	<b>12,137</b>	<b>11,847</b>	<b>11,183</b>	<b>10,552</b>
Shareholders Equity	15,719	23,467	31,083	39,522	48,754
Minority Interests					
<b>Total Equity</b>	<b>15,719</b>	<b>23,467</b>	<b>31,083</b>	<b>39,522</b>	<b>48,754</b>

<b>Key Ratios</b>					
	<b>Mar-20A</b>	<b>Mar-21A</b>	<b>Mar-22F</b>	<b>Mar-23F</b>	<b>Mar-24F</b>
Revenue Growth	56.7%	3.1%	10.5%	8.1%	8.2%
Operating EBITDA Growth	147.8%	21.6%	8.9%	5.5%	7.6%
Operating EBITDA Margin	24.3%	28.6%	28.2%	27.5%	27.4%
Net Cash Per Share (Rs)	(73.05)	(22.50)	(2.61)	56.41	121.51
BVPS (Rs)	115.24	172.04	227.88	289.75	357.43
Gross Interest Cover	7.71	14.75	27.94	31.44	42.40
Effective Tax Rate	24.2%	25.5%	25.2%	25.2%	25.2%
Net Dividend Payout Ratio	12.1%	11.6%	9.1%	8.7%	8.0%
Accounts Receivables Days	51.25	57.31	58.66	57.75	57.72
Inventory Days	61.91	62.64	60.96	62.97	62.35
Accounts Payables Days	64.33	64.56	61.46	56.55	56.00
ROIC (%)	29.6%	30.5%	32.3%	28.9%	30.7%
ROCE (%)	35.8%	38.7%	35.8%	30.5%	27.6%
Return On Average Assets	22.8%	24.6%	23.3%	20.4%	18.7%

SOURCES: INCRED RESEARCH, COMPANY REPORTS

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#### Corporate Governance Report:

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The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey result may be changed after that date. CGS-CIMB Thailand does not confirm nor certify the accuracy of such survey result.

<b>Score Range:</b>	90 - 100	80 – 89	70 - 79	Below 70	No Survey Result
<b>Description:</b>	Excellent	Very Good	Good	N/A	N/A

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## Corporate Governance Report of Thai Listed Companies (CGR). CG Rating by the Thai Institute of Directors Association (Thai IOD) in 2021, Anti-Corruption 2021

**ADVANC** – Excellent, Certified, **AMATA** – Excellent, Certified, **ANAN** – Excellent, n/a, **AOT** – Excellent, n/a, **AP** – Excellent, Certified, **ASP** – Excellent, n/a, **AWC** – Excellent, Declared, **AU** – Good, n/a, **BAM** – Very Good, Certified, **BAY** – Excellent, Certified, **BBL** – Excellent, Certified, **BCH** – Very Good, Certified, **BCP** – Excellent, Certified, **BCPG** – Excellent, Certified, **BDMS** – Excellent, n/a, **BEAUTY** – Good, n/a, **BEM** – Excellent, n/a, **BH** – Good, n/a, **BJC** – Very Good, n/a, **BLA** – Very Good, Certified, **BTS** – Excellent, Certified, **CBG** – Very Good, n/a, **CGET** – n/a, n/a, **CENDEL** – Excellent, Certified, **CHAYO** – Very Good, n/a, **CHG** – Very Good, n/a, **CK** – Excellent, n/a, **COM7** – Excellent, Certified, **CPALL** – Excellent, Certified, **CPF** – Excellent, Certified, **CPN** – Excellent, Certified, **CPNREIT** – n/a, n/a, **CRC** – Excellent, Declared, **DELTA** – Excellent, Certified, **DDD** – Excellent, n/a, **DIF** – n/a, n/a, **DOHOME** – Very Good, Declared, **DREIT** – n/a, n/a, **DTAC** – Excellent, Certified, **ECL** – Excellent, Certified, **EGCO** – Excellent, Certified, **EPG** – Excellent, Certified, **ERW** – Very Good, Certified, **GFPT** – Excellent, Certified, **GGC** – Excellent, Certified, **GLOBAL** – Excellent, n/a, **HANA** – Excellent, Certified, **HMPRO** – Excellent, Certified, **HUMAN** – Good, n/a, **ICHI** – Excellent, Certified, **III** – Excellent, Declared, **INTUCH** – Excellent, Certified, **IRPC** – Excellent, Certified, **ITD** – Very Good, n/a, **IVL** – Excellent, Certified, **JASIF** – n/a, n/a, **JKN** – n/a, Certified, **JMT** – Very Good, n/a, **KBANK** – Excellent, Certified, **KCE** – Excellent, Certified, **KEX** – Very Good, Declared, **KKP** – Excellent, Certified, **KSL** – Excellent, Certified, **KTB** – Excellent, Certified, **KTC** – Excellent, Certified, **LH** – Excellent, n/a, **LPN** – Excellent, Certified, **M** – Very Good, Certified, **MAKRO** – Excellent, Certified, **MC** – Excellent, Certified, **MEGA** – Very Good, n/a, **MINT** – Excellent, Certified, **MTC** – Excellent, Certified, **NETBAY** – Very Good, n/a, **NRF** – Very Good, Declared, **OR** – Excellent, n/a, **ORI** – Excellent, Certified, **OSP** – Excellent, n/a, **PLANB** – Excellent, Certified, **PRINC** – Very Good, Certified, **PR9** – Excellent, Declared, **PSH** – Excellent, Certified, **PTT** – Excellent, Certified, **PTTEP** – Excellent, n/a, **PTTGC** – Excellent, Certified, **QH** – Excellent, Certified, **RAM** – n/a, n/a, **RBF** – Very Good, n/a, **RS** – Excellent, Declared, **RSP** – Good, n/a, **S** – Excellent, n/a, **SAK** – Very Good, Declared, **SAPPE** – Very Good, Certified, **SAWAD** – Very Good, n/a, **SCB** – Excellent, Certified, **SCC** – Excellent, Certified, **SCGP** – Excellent, Declared, **SECURE** – n/a, n/a, **SHR** – Excellent, n/a, **SIRI** – Excellent, Certified, **SPA** – Very Good, n/a, **SPALI** – Excellent, Certified, **SPRC** – Excellent, Certified, **SSP** – Good, Certified, **STEC** – Excellent, n/a, **SVI** – Excellent, Certified, **SYNEX** – Very Good, Certified, **TCAP** – Excellent, Certified, **THANI** – Excellent, Certified, **TIDLOR** – n/a, Certified, **TISCO** – Excellent, Certified, **TKN** – Very Good, n/a, **TOP** – Excellent, Certified, **TRUE** – Excellent, Certified, **TTB** – Excellent, Certified, **TU** – Excellent, Certified, **TVO** – Excellent, Certified, **VGI** – Excellent, Certified, **WHA** – Excellent, Certified, **WHART** – n/a, n/a, **WICE** – Excellent, Certified, **WORK** – Good, n/a.

- CG Score 2021 from Thai Institute of Directors Association (IOD)

- Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of August 5, 2021) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.

### Recommendation Framework

#### Stock Ratings

Definition:

Add	The stock's total return is expected to exceed 10% over the next 12 months.
Hold	The stock's total return is expected to be between 0% and positive 10% over the next 12 months.
Reduce	The stock's total return is expected to fall below 0% or more over the next 12 months.

*The total expected return of a stock is defined as the sum of the: (i) percentage difference between the target price and the current price and (ii) the forward net dividend yields of the stock. Stock price targets have an investment horizon of 12 months.*

#### Sector Ratings

Definition:

Overweight	An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation.
Neutral	A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation.
Underweight	An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation.

#### Country Ratings

Definition:

Overweight	An Overweight rating means investors should be positioned with an above-market weight in this country relative to benchmark.
Neutral	A Neutral rating means investors should be positioned with a neutral weight in this country relative to benchmark.
Underweight	An Underweight rating means investors should be positioned with a below-market weight in this country relative to benchmark.