

## Paving the way for epichlorohydrin manufacture in India – The time is now!

The pandemic has had a devastating impact on people's lives and businesses all over the world. The only significant silver-lining to this grim situation has been the agility and adaptability of people globally to tide over its aftermath. The Indian chemical sector is no different. It has revamped itself so as to leverage various opportunities that have come its way due to supply chain disruptions in China and continuing trade conflicts between the US, Europe, and China.

With anti-pollution measures and stricter environmental guidelines becoming the norm in China, specific segments of the Indian chemical industry have seen significant growth. This is an opportune time to make India a formidable player in the production of an important chemical, epichlorohydrin (ECH), and continue the dream run of the chemical industry.

### Production

ECH is an epoxide and a colourless liquid. It is mainly produced from allyl chloride, which, in turn, is derived from propylene. Concerns over propylene availability and price, and environmental footprint have led to the development of alternate processes that use a bio-based raw material, glycerine, instead of the petro-based raw material, propylene.

### Applications

ECH is an essential raw material for the production of epoxy resins, which, in turn, is used in various applications including corrosion protection coatings in industrial, automotive, and packaging. Beside protective coatings, epoxy resins are also used in the manufacture of composites, that have major application in aerospace, wind turbine and automotive industries.

Apart from the epoxy segment, ECH has important usage in the manufacture of

pharmaceuticals, adhesives, elastomers, sizing agents for paper & textiles, besides other specialty uses.

### Global trends

Epoxy resins account for 80-85% of the global ECH consumption and are expected to continue driving the ECH market. Global consumption of ECH is expected to grow at a CAGR of 5.2% between 2019 and 2027. Increasing demand for epoxy resins in India, China, Taiwan, and South Korea has made the Asia-Pacific region the largest consumer of ECH. China is the largest producer, manufacturer, exporter and consumer of ECH, mainly due to the increase in the number of epoxy resin production facilities in the country.

### Indian scenario

In India, ECH demand is growing at double digits. In FY2015, ECH demand was 34,000-tonnes, which increased by 94% to 65,000-tonnes in FY2019. A decline in demand was witnessed in FY2021, due to the pandemic; however, demand is expected to bounce back by end of FY2022. Based on historical trends, ECH demand is likely to grow at a CAGR of 10-12% per annum in coming years.

Even though China is the largest ECH manufacturer globally, India is expected to contribute significantly to global market growth in the coming years. This expectation is based on the expansion of epoxy resin capacities in the country, driven by growth in end-use segments such as automotive, construction, electronics, etc. Currently, all the Indian demand of ECH is fulfilled by imports.

### The way forward for the chemical industry

To drive progress in the domestic chemical industry, tangible steps need to be taken to build on the momentum now

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in India's favour. Emphasis is needed on development of integrated infrastructure for crude-to-chemicals production. Additional measures, such as tax breaks and special incentives for PCPIRs and SEZs, are needed to encourage the production and development of new value chains in the industry. Industry players, on their part, need to work on creating value by adopting improved sustainability practices, while continuing to comply with local regulations. They should fast-track the use of digital analytics to improve margins. A McKinsey analysis shows chemical companies could see an increase of three to five percentage points in earnings before interest, taxes, depreciation and amortization by the deployment of 'Industry 4.0' technologies. Over the last decade, the Indian chemical industry has been an outperformer. Its contribution to the country's trade volume is significant. But it now needs to rapidly capitalise on the opportunities that exist. The time to ensure another decade of the dream run is now!

### About the Author

As Chairman and Managing Director of Meghmani Finechem Ltd. (MFL) since 2017, Mr. Maulik Patel has created a



dynamic organisation with a team of technocrats and engineers backed by efficient administrative staff. He has expertise in expansion and new projects. Mr. Patel has completed his M.Sc. in Chemical Engineering from University of Southern California, USA and Master of Business Administration from Long Island University, USA.