

Consumption of epichlorohydrin set to surge

India's gross domestic product (GDP) has grown at an average rate of 7 per cent in the past decade and the country has emerged as one of the leading economies of the world. The Indian chemical industry, certainly, is one of the key contributors to India's growth journey.

Interestingly, despite the uncertainties posed by the COVID-19 pandemic and the growing differences with China – a major chemical exporter – the Indian chemical sector has established itself as an attractive hub of opportunities aided by the Union Government's call for 'Atmanirbhar Bharat' and 'Make in India'.

Growth in consumption

The major use of epichlorohydrin (ECH) is in the production of epoxy resins, which act as a key driver for the chemical compound's global demand. Epoxy resins are used in manufacturing a variety of materials in the building and construction industry like adhesives, paints, coatings, primers, plastics, sealants and other products. Generally, companies use petroleum-based feedstock in ECH production, but lately, there has been a sharp surge in its production from glycerine, which is bio-based and environmentally friendly.

The paints and coating segment largely uses epoxy resins manufactured using ECH, and this segment contributes to the majority share in the ECH market. It will continue to drive the market for the chemical compound in the future. ECH is used by the automobile industry in form of epoxy resin in paints. Many water cleaning initiatives taken up by the government also require the water treatment chemicals, which will create higher demand for ECH. The application of ECH in the

electrical and electronics segment is also expected to surge.

The global consumption of ECH is estimated to grow at an average rate of 4-5% annually during 2021 to 2026, driven primarily by the production of epoxy resins. The fastest-growing markets for ECH will continue to be in Asia, particularly China and India. In India, the demand for ECH is expected to grow at around 15% CAGR and currently 100% of demand is met through imports.

Pandemic affected ECH demand

The COVID-19 pandemic had a significant impact on the ECH market due to strict restrictions imposed by governments, and a decline in industrial output and product demand. The decline in manufacturing activities across key end-use verticals, owing to supply chain issues and lockdown measures, led to decreased ECH consumption. Many manufacturers were forced to shut down production activities or operate at reduced capacity, causing production and supply delays.

Rising demand

The global ECH market size is projected to reach US\$4.40-bn by 2030, according to a new report by Grand View Research, Inc. The market will witness healthy growth globally, as all countries have started spending heavily on infrastructure. The consumption story of India will lead to rising demand from epoxy resins used for paint and coatings, which will ultimately go in applications such as automotive, windmill, construction materials and electronics.

Looking at the current surge in demand for ECH, the present logistical issues and as a consequence of a few manufactures having shut down capacity due to conventional technology,

YASHODHAN CHITNIS

Vice President (Marketing)
Meghmani Finechem Ltd.

the ECH markets are currently short in availability compared to its demand.

Sustainable manufacturing – The future of the chemical industry

Through innovative design, creation, processing, use, and disposal of substances, the chemical industry plays a crucial role in advancing applications to support sustainability in a manner that will allow us to meet current environmental, economic and societal needs without compromising the progress and success of future generations.

Keeping strong focus on sustainable green chemistry, ECH is increasingly being manufactured through the glycerol route, even though the majority of the global production is still based on the propylene route. The glycerol route to ECH offers significant benefit in carbon footprint reduction, compared to the petrochemical route; renewable feedstock consumption; and lower energy and water consumption, compared to the petrochemical route.

ABOUT THE AUTHOR

Mr. Yashodhan Chitnis is VP (Marketing) at Meghmani Finechem. With over 32 years of industry experience in the chemical sector, he has led P&L in excess of Rs. 500-crore with consistent revenue and profitability growth. He has a strong background in leading global businesses, change management, technical services, new products & new business development of specialty chemicals.

