

MAKING FOR A SUSTAINABLE POLYMER WORLD



Govind Khetan, Managing Director, Kraton Polymers

talks about how consumer demand decides the industry's course of growth. He also points out that sustainability is driving the need for safer, healthier, environmentally-friendly products in the polymer industry today.

Trends and development in polymers industry.

Styrene block copolymers (SBC) continue to be the largest consumed product in the thermoplastic elastomers (TPE) market, providing high performance polymers in various markets. Paving and roofing are expected to grow as consumer preference for customized homes continues to rise. Furthermore, consumer demand for sustainability is driving the need for safer, healthier, environmentally-friendly products. Therefore, raw material suppliers like Kraton are becoming a more essential part of the value chain to ensure the delivery of sustainable end-use products.

Growth potential for polymers in Asia Pacific and India.

We believe that India will grow above global GDP. The high population growth in the region will demand more sustainable, innovative solutions to replace aging infrastructure. Kraton's HiMA technology can play an important role in the development of durable, cost-effective roads to help reduce expenses related to maintenance, construction delays and traffic problems. We expect the Asia Pacific region may also experience similar trends to India as demand for sustainable, more durable infrastructure continues to grow globally.

Future of things for the SBC industry.

Continued light weighting efforts in the automotive, purity and safety in medical, and higher durability performance in paving and roofing are some key trends that we are paying attention to. Furthermore, we expect to see growth in several industries including paving and roofing, adhesives and sealants and wire and cable – all of which Kraton is a key player in.

Demands from end users of plastics & polymers products.

In certain markets, such as India, we are noticing higher demand in the paving and construction industry for more durable, sustainable, safe materials. In Europe, where there is a high focus on environmental impact, there is an increasing need for

biobased, renewable materials to meet new sustainability initiatives and mandates.

Demands in developed and emerging markets.

In developed markets, there is a deeper concentration on risks assessment, such as reducing levels of residuals and the impact they have on end-use products, such as health and safety. In emerging markets, we're seeing regulations around chemical control, food contact and medical device as well as the development of chemical control types of regulations, such as the implementation of the Globally Harmonized System for Hazard Communication. All of these demands are opportunities for Kraton given our innovation capabilities in meeting these requirements for enhanced safety, purity and durability.

Overview on company's polymers business in Asia Pacific and India.

We recently launched Highly Modified Asphalt ("HiMA") in India, and have seen several successes. For example, HiMA-based asphalt was used as an alternative to mastic asphalt on several sections of Mumbai's expressway – some of which are the busiest roads in the city. We expect these sections will act as technology demonstrators in India, so formulators will continue to look at HiMA for specifying roads in the future. Across the Asia Pacific region, we notice the local government's increasing focus on creating new infrastructure with an emphasis on solutions that provide long-term stability. We see a need to bring advanced technologies, such as HiMA, to the region and work together with all elements of the value chain to promote those benefits and address regional needs.

R&D and innovation focus.

As a leading global producer of SBC and pine chemicals, we are continuously developing and advancing innovations for our key markets. Regardless of application area, our approach to innovation involves developing a thorough understanding of the problem and determining how

innovation tools can best deliver solutions to our customers. For example, we recently unveiled the Kraton Injection Molded Soft Skin (IMSS) technology, which enables the molding of large thin wall soft skin product designs. This capability opens the automotive market to larger applications like door panels, consoles and instrument panels as thin as 0.8mm. It allows manufacturers to achieve vehicle weight reduction, safety and manufacturing efficiency – all from a single technology.

Challenges faced by polymers manufacturers.

In some industries like paving, specification time can be extensive and lengthy including gaining technical approval from laboratory results and full-scale experiments to prove the benefits of our technologies. To help expedite that timeframe, we work with customers and agencies on the specification process and provide evaluation reports by third-parties, such as universities and research institutes.

Having an edge over others in the industry.

We invest in new markets and work closely with customers to create custom solutions that their specific needs are. Our insights and expertise in key markets, regulations and technologies enable our customers to stay ahead of the curve and develop high-performance innovations.

Meeting industry standards for sustainability.

Kraton focuses on innovations that deliver product performance and sustainability. In fact, approximately half of our product portfolio is made from biobased materials. In the paving industry, our SYLVAROAD RP1000 Performance Additives, based on pine chemicals, enables asphalt recycling and reuse up to 100 percent, while delivering equivalent performance to virgin asphalt. On the polymer side, our products enable more durable end-use products. Our Highly Modified Asphalt (HiMA), an SBS polymer technology, enables higher resistance to fatigue and deformation for excellent durability compared to existing technologies.