

Major Innovations



High-Performance SSBR Grades

With rising demand for eco-friendly tires and tire labeling requirements becoming increasingly common, demand for SSBR (solution styrene butadiene rubber), a material recognized for its superior silica filler dispersion characteristics, is growing rapidly. We produce a variety of SSBR grades that are expected to generate steady sales growth in the coming years. Through ongoing R&D, we have acquired proprietary manufacturing technologies for synthetic rubber denaturant, polymer structure control, and new compounds that enable us to develop and produce unique SSBR grades with superior properties.

We continue to work closely with major tiremakers on joint projects. These technical exchanges with both customers and universities at home and abroad position us to quickly respond to changing customer requirements and develop market-leading products. We aim to sharpen our technical capabilities in the years ahead through ongoing investment.



MSP Epoxy Paint Additive

Mono-styrenated phenol is a low-viscosity phenol chemical compound developed as a replacement for hormone-altering phthalates commonly used as plasticizers and hardeners in epoxy paint coatings. In addition to its eco-friendly properties, our MSP eliminates several shortcomings of existing products and is the industry's first to offer enhanced hardener storage stability and quality.

This technical leadership enabled our phenolic additives products to win the "World-Class Product of Korea" designation in 2015 for achieving a global top-5 market share as well as Korea's prestigious IR52 Jang Young-sil Award for innovation in 2016.

We continued to expand our MSP lineup in 2016 with our new MSP500 product. This non-reactive diluent for epoxy paints is now opening new market and profit opportunities for us in the specialty chemicals field.



Industrial NB Latex

Recognized for its excellent tensile strength and processability characteristics, our NB latex has enjoyed steadily rising sales since introduction. In the medical glove market, our NB latex continues to maintain an edge on the competition and we are continually developing new grades to meet the specific needs of our customers. We are also expanding our product portfolio by developing NB latex grades for high-quality industrial-use gloves as we expand our customer base and grow sales.

Expected to enjoy strong growth in the coming years, industrial-use latex gloves are highly resistant to wear and chemicals, making them essential safety wear in the automobile, metal, and chemical industries.



Enerpor EPS Resin

We have an exclusive manufacturing patent for this EPS resin, which has all the properties and strength of existing EPS resins with the added benefit of significantly improved thermal conductivity. Adopting the concept of radiant heat absorption through the crystal structure of conventional polystyrene foam, Enerpor offers 30% better insulation performance than standard white EPS foam insulation, setting a new standard for energy savings and eco-friendliness.

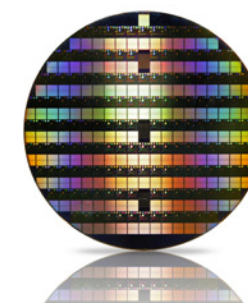
Enerpor has a high market share in Korea and we have received patents for the manufacturing technology in a number of major global markets including the United States, Canada, Russia, China, and the European Union.

In 2016, we developed a new manufacturing technology capable of producing the sub-1-millimeter resin bead size preferred by customers, taking product competitiveness to the next level.



Butadiene Production

1,3-butadiene (BD) is a widely used industrial chemical feedstock. In our operations, we use it to produce synthetic rubbers and resins. Tight supply in the industry in recent years has led us to increase our captive BD production capacity. Our R&D teams have developed optimized process technologies that will enable us to do that, contributing to stable manufacturing costs and improved profitability for our core businesses.



ArF Immersion BARC

BARC (bottom anti-reflective coatings) are polymer coatings used on the lower layer of photoresist to control light reflectivity in high-resolution lithography. Since launching commercial production in 2015, we have upgraded the performance of our KrF immersion BARC product. In addition to attaining a higher refractive index than the original product, the new product also features improved etching performance.

We expect continued development of new materials like this designed for next-generation semiconductor production to drive sales growth in the coming years.



3D NAND Photoresist

Although NAND flash memory manufacturing is structurally simple, volatile pricing has kept it out of the semiconductor industry spotlight. That has rapidly changed with the recent development of 3D NAND flash memory and its accompanying increases in memory density, boosting margins and industry interest. Resist manufacturers around the world are now focusing their development efforts on thick KrF (krypton fluoride) photoresist for 3D NAND production.

In 2016, we moved a step closer to completing development of a photoresist that meets the performance requirements of our global customer base and expect to complete commercialization during 2017.



OLED Panel Sealant

In 2016, we continued to improve the properties of our OLED panel sealant during the ongoing development process. Having completed reliability testing with customers, the installation and optimization of production facilities, and the final audit, we are now awaiting final customer qualification. In 2017, we expect to further improve sealant properties as we work to wrap up commercialization and begin product deliveries during the year, becoming Korea's first domestic supplier in the process.