The Next Evolution in Polyethylene Technology for the Plastics Industry

For over 70 years, LyondellBasell and its predecessor companies have developed new products and processes that serve as the bedrock of the chemical industry. Today*, LyondellBasell is the global leader in the development and licensing of polyolefin processes and related catalysts.

LyondellBasell continues this tradition of innovation with the introduction of a new polyolefin process, Hyperzone PE technology, which produces high density polyethylene (HDPE) resin with exceptional characteristics. This technology utilizes three distinct reaction zones in two reactors, which enables the production of tailored polymer structures to meet customers’ demanding processing and product requirements. Hyperzone PE technology produces HDPE that enables our customers to obtain an optimal balance between ease of processing and high performance end-product physical properties.

Product Benefits**

Hyperzone HDPE Properties:
- Improved processability
- Superior toughness properties
- Improved chemical resistance

Customer Benefits:
- Achieve source reduction in some applications
- Increase productivity
- Improve durability of final products
- Improve crack growth resistance in pipes

Product processing methods

* 2017 data as of December 31, 2017
** Based on pilot plant results
Hyperzone HDPE Applications

Hyperzone PE technology can produce a broad spectrum of HDPE that is used in a variety of applications.

Some Typical Applications:

- **Water pipes**
- **Gas pipes**
- **Industrial pipes**
- **Household bottles**
- **Industrial bottles**
- **Toys**
- **Industrial packaging**
- **Intermediate bulk containers**
- **Retail carry out bags**
- **Institutional can liners**
- **Produce bags**

Journey to Developing the Hyperzone PE Process Technology

We have combined the best of what we have learned over the years in process technology, catalyst technology and product development to bring the Hyperzone PE technology to market. This technology is a product of years of work by LyondellBasell’s global research and development teams in Ferrara, Italy; Frankfurt, Germany; Cincinnati, Ohio; and Houston, Texas.

**Ferrara, Italy** – Developed proprietary Hyperzone PE process technology and custom catalyst.

**Frankfurt, Germany** – Constructed an operating pilot plant for process and product development.

**Cincinnati, Ohio/Houston, Texas** – Conducting product testing and customer trials using HDPE produced from Hyperzone PE process technology.

**La Porte, Texas** – Building first commercial, world-scale Hyperzone PE plant. La Porte is the ideal location due to its proximity to price-advantaged feedstocks and the transportation infrastructure needed to ship product to markets across the globe. Plant start up is planned in 2019.

New Hyperzone PE Plant

1.1 billion
pounds-per-year HDPE
Before using a product sold by a company of the LyondellBasell family of companies, users should make their own independent determination that the product is suitable for the intended use and can be used safely and legally. SELLER MAKES NO WARRANTY; EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY) OTHER THAN AS SEPARATELY AGREED TO BY THE PARTIES IN A CONTRACT. This product(s) may not be used in: (i) any U.S. FDA Class I, Health Canada Class I, and/or European Union Class I Medical Devices, without prior notification to Seller for each specific product and application; or (ii) the manufacture of any of the following, without prior written approval by Seller for each specific product and application: (1) U.S. FDA Class II, Health Canada Class II or Class III, and/or European Union Class II Medical Devices; Hyperzone is a trademark owned or used by the LyondellBasell family of companies and is registered in the U.S. Patent and Trademark Office.

LyondellBasell (NYSE: LYB) is one of the largest plastics, chemicals and refining companies in the world. Driven by its 13,400 employees around the globe, LyondellBasell produces materials and products that are key to advancing solutions to modern challenges like enhancing food safety through lightweight and flexible packaging, protecting the purity of water supplies through stronger and more versatile pipes, and improving the safety, comfort and fuel efficiency of many of the cars and trucks on the road. LyondellBasell sells products into approximately 100 countries and is the world’s largest licensor of polyolefin technologies. In 2018, LyondellBasell was named to Fortune Magazine’s list of the “World’s Most Admired Companies.”

For more information, visit lyb.com or please contact:

Europe
EU.Polymers@lyb.com

North America
NA.Polymers@lyb.com

South America
SA.Polymers@lyb.com

Africa, Middle East, India
AFMEI.Polymers@lyb.com

Asia
AP.Polymers@lyb.com

Australia/New Zealand
AU.Polymers@lyb.com