

Dow Develops Recyclable Barrier Film for Liquid Packaging with Vishakha Polyfab using RETAIN™ Polymer Modifiers

AHMEDABAD, GUJARAT, INDIA - February 09, 2018



Dow Chemical International Pvt. Ltd has collaborated with its value chain partner in India to solve the issue of recycling barrier films. Dow Packaging & Specialty Plastics (P&SP), a business unit of The Dow Chemical Company (Dow), announced today the advancement of a partnership with a local leading barrier film manufacturer, Vishakha Group, to develop a "Recyclable Barrier Film" for liquid packaging at PlastIndia 2018. This allows for an increased use of recycled plastic materials and provide an incentive for recovery of post consumption plastics waste.

The food industry is increasingly using barrier packaging to extend a product's shelf life. Trims and scraps of barrier films are not easy to recycle due to the incompatibility of polar and non-polar polymers. Barrier film converters end up giving away these scraps at practically no value as they are not able to reuse the scraps in new films. They are now paying more attention to resource management and waste reduction at their facilities to increase their profitability.

Greg Bunker, global business director for Specialty Plastics of Dow P&SP said, "With Dow's RETAIN™ Polymer Modifiers, barrier film converters will be able to recycle up to 100% of their scrap and meet converters' and

industry's sustainability goals. RETAIN™ Polymer Modifiers were developed using Dow's extensive knowledge of material science and reactive chemistry to enable the efficient compatibilization of two otherwise immiscible materials while maintaining critically value added physical properties. RETAIN™ 2000 is most specifically designed to compatibilize polyamide (nylon) and ethylene-vinyl alcohol (EVOH) into a continuous polyethylene matrix."

Jigish Doshi, CMD of Vishakha Polyfab Pvt Ltd, said, "We at Vishakha always strive to be in businesses which contribute to the sustainable growth of the country, such as enhancing agriculture, storage solutions and packaging material for a longer shelf life with renewable energy participation. With this new development we have added a new tool to our tool box by offering a recyclable barrier film solution which will not only add to the shelf life of the product but also help our community through the recycling of packaging material."

Vipul Babu, sales director for Dow P&SP, India Sub-continent, added, "This was a joint effort between Dow P&SP and Vishakha team, to develop a nylon-based barrier film empowered with Dow's RETAIN™ Compatibilizer to make it recyclable. The project was triggered by an initiative with India's leading edible oil brand, and will lead to manufacturing and potential recycling of over 20,000 MT of barrier film in India."

This innovative technology is based on a reactive, ultra-low viscosity compatibilizer. Reactive groups "coat" the polar components, encapsulating them into micro-domains to enable excellent dispersion. When blended at specified ratios with pelletized barrier film recycle streams, the RETAIN™ polymers allow converters to recycle barrier film trim back into film production without sacrificing optical or physical properties.

The benefits include:

- Opportunity to make better use of recycle stream (versus selling for

low value or landfilling)

- May eliminate or reduce costs associated with collecting, packaging, and selling scrap
- Could reduce costs by utilizing scrap for bulk layer
- Potential to meet company's or industry's sustainability goals (e.g., "Zero-Landfill" objectives)
- Option to make post-industrial recycle content claims

For more information, please visit <https://www.dow.com/packaging>.

About Vishakha Group

Vishakha group is a diversified group with interests in Flexible packaging, agricultural enhancement systems, solar ancillaries and storage solutions. The group is one of the largest manufacturing hub for high barrier films and have been a pioneer in the said field. The group always envisions to be with the national interests of being environmentally sustainable.

About Dow India

Dow Chemical International Private Limited (Dow India) combines the power of science and technology to passionately innovate what is essential to human progress. The Company is driving innovations that extract value from the intersection of chemical, physical and biological sciences to help address many of India's most challenging problems including the need for clean water, clean energy generation and conservation, and increasing agricultural productivity. With 800+ employees in locations spread across the country, Dow India is continually finding ways to make people's lives healthier, safer and more convenient through exploring sustainable solutions based on technology development and application research in areas of infrastructure, transportation, energy, consumer and, lifestyle.

As a responsible corporate citizen, the company uses its technology expertise and employee volunteerism to partner with the communities in which it operates. Dow continues to support Jaipur Foot through free distribution of prosthetic limbs along with BMVSS, building homes for the

underprivileged through 'Habitat for Humanity' and supporting scientific thought and environmental awareness among the future generations through 'Multiply the Message' and 'Mobile Science Lab' programs. For more, visit www.dow-india.com / <http://in.dow.com>

About Dow Packaging and Specialty Plastics

Packaging and Specialty Plastics, a business unit of The Dow Chemical Company (Dow), combines core strengths of R&D, worldwide reach, broad product lines and industry expertise to deliver innovative and sustainable solutions for plastics. The business is one of the largest polyethylene producers in the world, and a leading collaborator across the value chain on the development of new technologies and applications for high growth markets in packaging, health & hygiene, transportation, consumer, and infrastructure.

For further information contact: