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RHOBARR™ 320 Barrier Dispersion awarded 2022 Team Innovation Award

The team that developed RHOBARR™ 320 Polyolefin Dispersion, from the Dow Chemical Company, is the winner of the 2022 Team Innovation Award given by the Midland Section of the American Chemical Society. David Malotky and Alan Piwowar are the primary technical investigators.

Paper cups, bowls and plates require a barrier coating to cover the paper and make it impervious to hot and cold liquids. Historically used coatings make the paper incompatible with paper recycling. RHOBARR™ 320 Polyolefin Dispersion is the first polyolefin coating applied as an aqueous dispersion for paper applications. When sprayed on paper, it makes a liquid barrier suitable for demanding applications like hot and cold beverage cups. The coating is so thin that the cups can be recycled with other paper. RHOBARR™ 320 Polyolefin Dispersion is the thinner, more recyclable, more sustainable coating for paper-based food contact and packaging applications.

“Midland is an innovative place.” said Joel McDonald, current chair of the Midland Local Section. “The advances underlying RHOBARR™ 320 were made right here in Midland. It is great that innovation in our community is leading to a more sustainable, more circular world.”

RHOBARR™ 320 Polyolefin Dispersion is made by finely dividing polyethylene plastic and suspending it in water, making a milky looking liquid that pours and handles like water. Polyethylene is the polymer used to make milk jugs, plastic bags, and more. When RHOBARR™ 320 is sprayed on paper, the water evaporates and, after just a little heating, leaves a defect-free, very thin coating on the paper. The finished paper goods, since so little coating is used, are repulpable, compatible with existing paper recycling infrastructure. The coating provides a barrier to liquids, chemicals, and grease as good as or better than the incumbent technology but at much lower raw material use.

The aqueous dispersion technology is unique to Dow, developed right here in Midland. Prior to advances made here in Midland, polymer dispersions required forming small polymer particles by reaction in water. That is the way latexes were initially made. Doug Leng, who sadly recently passed away, was one of the developers of the aqueous dispersion technology. These developments allowed polymer pellets to be melted and blended with water under high shear conditions to give a colloidal dispersion. Developments have continued in the technology. RHOBARR™ 320 Polyolefin Dispersion is more groundbreaking technology developed right here in Midland.

The Midland Local Section recognized over 80 individuals and teams at a May 4th event. Awards were given for excellence in education, community service, membership, innovation, and service to the chemical profession. A full list of the awards and recipients can be found at awards.midlandacs.org and a more complete summary will appear in the May *Midland Chemist* (midlandchemist.org), the Midland Section’s newsletter.