

Technology Breakthrough: Univation's Single-Reactor Bimodal Catalyst Now Available

HOUSTON, Texas -- 15 October 2004 -- Univation Technologies has achieved another technology breakthrough that enables bimodal HDPE film resins to be produced in a single UNIPOL™ PE reactor. The company's vanguard catalyst technology, trade named PRODIGY™ BMC100, delivers notable value to PE producers - HDPE film performance on par with the best-of-class multiple-reactor resins, and an estimated 40 percent investment savings exceeding \$35 million versus alternative 300 kta multi-reactor systems. Further, a single UNIPOL line supports capacities above 450 kta which increases its value vs. other 'size-limited' technologies. Long thought to be technically impossible, commercialization was achieved after several years of extensive research, development and commercial reactor validation.

"A single reactor UNIPOL PE line running PRODIGY bimodal catalyst provides remarkable savings in construction costs by avoiding multiple reactor technologies," said John Verity, president of Univation Technologies. "With the bimodal capability built into the catalyst instead of the process hardware the user can easily switch products when bimodal product performance is required - and the demand for bimodal products is growing strongly," Verity added. Univation estimates that nearly 50 percent of growth in PE between 2000 and 2010 will be in HDPE, and more than 60% of that consumption growth will be met by bimodal products. Film is anticipated to be the largest bimodal HDPE growth segment.

Dr. Gregory Stakem, Univation's vice president of R&D, asserts that PRODIGY BMC100 has been proven to deliver the product performance attributes of leading commercial bimodal film resins.

"We believe that bimodal catalyst technology will be an exciting competitive advantage due to the economic value and the fact that HDPE films show an excellent balance of processability and physical properties," Stakem reported.

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Bimodal HDPE film grades, mainly used in grocery sacks and can liners, have best-of-class product attributes:

- Excellent physical properties (tear, impact, stiffness)
- Excellent draw-down capability
- Excellent extrudability
- Excellent bubble stability to limit gauge variation
- Low gel content
- Excellent heat sealing characteristics

Through the combination of engineered catalysts and advanced reactor controls PRODIGY technology also offers potential licensees significant advantages in operation simplicity and product consistency:

- A single reaction environment is easier to control
- There is less process complexity – no slurry recovery equipment
- No second reactor means start-ups and shut-downs are simplified
- The intimate mixing of high and low molecular weight components yields improved product quality

“PRODIGY Bimodal technology,” says Paul Moyer, Univation Commercial VP, “is powering significant process economics and new product advantages that broaden the competitive capabilities of our customers. PRODIGY Bimodal Catalysts will help our clients cost-effectively compete in those HDPE markets that need bimodal performance.”

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Univation Technologies, headquartered in Houston, Texas, is a joint venture between ExxonMobil Chemical Company and The Dow Chemical Company. Univation has comprehensive technology programs focused on the UNIPOL™ polyethylene gas-phase process, XCAT™ Metallocene Catalysts, PRODIGY™ Bimodal Catalysts as well as conventional Ziegler-Natta and chrome-based catalysts trade named UCAT™ Conventional Catalysts.

To find out more about Univation visit <http://www.univation.com/>.

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