

After a series of tests, K-C has chosen the inlay it plans to use on shipments bound for Wal-Mart and other retailers using RFID.

By Mary Catherine O'Connor

Feb. 28, 2006—Consumer packaged goods (CPG) maker and early RFID adopter [Kimberly-Clark](#) has chosen which EPC Gen 2 RFID smart labels it will use on shipments heading to [Wal-Mart](#) and other RFID-enabled retailers. After testing a variety of Gen 2 tags in its 5,000-square-foot Auto-ID Sensing Technologies Performance Test Center in Neenah, Wis., the company chose the AD-220 RFID Gen 2 inlay. Manufactured by Clinton, S.C.-based [Avery Dennison RFID](#), the AD-220 inlays will be converted into shipping labels by [RSI ID](#), an RFID inlay manufacturer and label converter located in Chula Vista, Calif.

K-C has not yet announced when it will begin placing the Gen 2 labels on shipments bound for Wal-Mart, but says it will soon begin. The company will not be the first Wal-Mart supplier to do so. In January of this year, [Texas Instruments'](#) Educational & Productivity Solutions (E&PS) division started sending product to Wal-Mart with Gen 2 tags (see [Wal-Mart Shipments Get Gen 2 RFID Tags](#)), and claims it has sent thousands of the labels since then.

Kimberly-Clark's Auto-ID Sensing Technologies group performs tests and makes RFID hardware recommendations for K-C's logistics division. Gary Clement, technology development manager for the Auto-ID Sensing Technologies group, says his team tested the Gen 2 tags in tandem with testing of Gen 2 interrogators. Last month, Kimberly-Clark announced its use of Alien's ALR-9800 RFID interrogator (reader), capable of reading and writing data to Gen 2 tags, in its RFID operations (see [Kimberly-Clark Deploys Gen 2 Readers](#)).

"We went through a similar process with our tag selection as we did with our readers," says Clement. "The Alien [ALR-9800] reader and the Avery tags were a good combination, and the Avery tags were optimal, based on performance and price."

Clement and his team evaluated seven separate tags, including inlays made with conventional etched copper antennas, as well as others utilizing etched aluminum antennas and those printed with conductive inks. (The AD-220 contains a printed antenna made with silver ink.)

The group designed the tests around the processes K-C uses to encode data to tags and then read the data to verify that each tag was still operational and encoded with accurate data. It also tested the readability of the tags on cases moving on a conveyor to simulate the receiving process used by Wal-Mart and other customers. The team also tested the readability of the tags as they passed by portal interrogators and other readers mounted on stretch-wrap machines.

With the inlay selected, Clement and his team turned their attention to choosing a label converter. "We went through a list of converters and requested pricing and support," Clement explains. "We picked RSI

because it provides an automated pick-and-replace system for bad tags. We feel most ensured that it will remove the bad tags."

After RSI converts RFID inlays into labels, it uses an automated system to confirm that the inlays are functional. The labels are run through a machine using an RFID interrogator to read each inlay. If the device senses the transponder's ID, encoded by the inlay manufacturer, it approves the label. If, however, the reader cannot detect the ID, the machine removes the label, replacing it with another label containing a functioning inlay.

"They [the Kimberly-Clark team] made a very extensive visit of our testing capabilities," says RSI's CEO, Wolf Bielas. RSI's vice president of sales and marketing, Tawnya Clark, notes that her company's ability to create customized smart labels—with specific antenna configurations and label sizes based on a customer's requirements—also made it a strong candidate. While K-C will not initially be using customized Gen 2 labels, Clark says the firm wants to retain the option of doing so for hard-to-tag products that cause RF interference.

Kimberly-Clark put out a call to a number of inlay manufacturers at the end of March 2005, requesting quantities of 5,000 Gen 2 tags for testing. The deadline for submitting the tags was July 2005. George Reynolds, vice president of sales and marketing at Avery Dennison RFID, says his company was the first to meet this deadline. "We provided a roll of 5,000 tags—not hand-made products, but mass-made, which was important," he says. "We showed we could provide production quantities."

Clement is pleased with the Gen 2 label and inlay selection. "So far, so good," he says. "We've run several hundred of the labels through tests so far and have had no failures. That's darn good, especially compared to Gen 1."

Kimberly-Clark is not releasing the quantity of labels and inlays it is ordering, nor the price or length of contract. In September, however, Avery Dennison RFID announced pricing for its AD-220 Gen 2 inlay at 7.9 cents apiece in quantities of 1 million. Moreover, RSI said it was selling its 4-by-6-inch printable smart labels with embedded EPC Gen 2 inlays for 14.9 each in the same quantities (see [Avery Dennison, RSI ID Lower Price Bar](#)).