

# RFID Sweetens Imperial's Shipping Process

The sugar manufacturer is using tagged plastic pallets to track its shipments from the refinery to the store, and to reduce the likelihood of contaminant exposure.

By Claire Swedberg

Oct. 30, 2007—Imperial Sugar is using RFID-enabled plastic pallets to track its shipments from the refinery to the store. The pallet tags are providing a more visible (and safer) supply chain, says Greig DeBow, Imperial's VP of consumer sales and marketing. The tags' unique ID numbers, and the data associated with each number, enable the company to know where the pallets have been in the past, and to ensure that the pallets have not been used to ship bacteria-laden products, such as raw meat, that could contaminate Imperial's products.

The RFID-enabled pallets were provided by Intelligent Global Pooling Systems (iGPS). Imperial has been using the pallets since Oct. 15, DeBow says, and is gradually introducing them into its pallet supply to replace the wood versions used at its two plants in Gramercy, La., and Savannah, Ga.

Initially, DeBow explains, the company had sought to correct problems involving the wooden pallets it was using. Those pallets, he says, were frequently damaged, with splinters, nails and broken wood protruding from them. Such protrusions not only made it difficult to stack products in a truck—the pallets often snagged against each other or collapsed—but also tore the packaging carrying Imperial's granulated, powdered and brown sugars. In addition, there was also a concern regarding food safety, because wooden pallets can absorb bacteria or other contaminating leakage from other products they carry, which can then be transferred to another product, such as bags of sugar.

The iGPS pallets, DeBow says, offer a solution at no greater cost than that of the wooden pallets. Because they are made of plastic, he notes, there is virtually no damage on them—and unlike wood, they can be sanitized. In addition, says Rex Lowe, president of iGPS, each plastic pallet comes with a unique Electronic Product Code (EPC) ID number written on each of the four passive EPC Gen 2 RFID tags embedded in the corners of the pallet. Lowe says the four pallet tags (supplied by Alien Technology or Avery Dennison) carry the same ID number and provide enough redundancy to ensure a read despite the density of the products loaded on the pallet.

Imperial uses those ID numbers to track its products being shipped on the pallets, and iGPS employs the same data to track each pallet's location at any given time. It also utilizes the numbers to maintain a record of who uses a particular pallet, and what is loaded on it. This helps to ensure that a company such as Imperial does not receive pallets that might have previously carried potentially contaminating shipments, such as raw meat or peanuts (for allergy concerns).

The sugar is refined and packaged at Imperial's plants, then moved down a conveyer, where it is stacked on a pallet and stretch-wrapped. At that time, workers input product data—such as the type of sugar, when it was refined and its destination—and fixed Alien interrogators capture the pallet's EPC number.

The product data and pallet ID number are transmitted to a server on the plant floor, which directs it to the company's warehouse management system via a cabled connection. There, iSum (Intelligent Stock Use and Movements) asset-management software, written by Xterprise, directs the data to Ryder Logistics, iGPS' third-party data manager, which stores the data and provides shipping, delivery and billing data to iGPS. Lowe equates the system to a fishing boat, with iSum acting as a fishing net bringing fish onto a boat, and Ryder being the boat that brings the data home.

When shipments arrive at an RFID-enabled retailer—Wal-Mart, for instance—RFID interrogators read the pallet tags, affording Imperial and iGPS another glimpse into the shipment's location. Once unloaded, the pallets are sent to pooling areas located near major retail stores. At these sites, Lowe says, Alien interrogators provide iGPS with its second (or third, in the case of some Wal-Mart shipments) reading of that pallet's tag, alerting the company that the pallet has been emptied and is ready for reuse.

At present, Imperial is in the process of installing RFID readers at its own additional product storage locations near its two refineries, as well as in the Houston area. This will provide the company another RFID read when a loaded pallet is brought into and out of the center en route to the retailer. Eventually, DeBow predicts, more retailers will install readers at their own dock doors, providing additional data to Imperial and iGPS.

"This is absolutely working well," DeBow states. "The [staff at] the plants couldn't be happier." Just having the recycled plastic pallets at about the same price as wooden pallets was an advantage, he says, adding that the RFID tracking "was certainly a bonus."

According to Lowe, there are currently 2 billion wooden pallets in use within the United States. The iGPS pallet offers an environmental benefit, he claims, because it is made entirely of recycled plastic, which is melted and reused whenever a pallet breaks. "You won't see one of these pallets in a landfill," he says, indicating that wooden pallets account for 20 percent of all wood waste in landfills.

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Imperial has signed an exclusive agreement with iGPS to be the only sugar company using the pallets for the next year.

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