

CASE STUDY

PUNCTURE-RESISTANT

GLOVE

halts needlestick problems for waste management company

A 44-year-old trash collector was stuck in the leg with a needle that was in a bag of trash. A year later, he started having stomach pains. The doctors told him he had contracted Hepatitis C, most likely from the needlestick, and that they were unable to cure him. He is now in chronic liver failure and will more than likely die from this disease¹.

This scenario is not isolated and is very real. Consider this: Each year, three billion needles are utilized outside of the traditional healthcare environment. This number escalates when you consider those that are not traceable — those used by illicit drug users and that can be contaminated with the most serious of diseases. Many of these needles end up in the trash we collect and recycle.

Waste Management, Inc. (WM) and its subsidiary Recycle America Alliance (RAA) have worked diligently over the years to protect its Materials Recovery Facility (MRF) sorters. RAA established guidelines on how to deal with exposures to needlesticks, but the fundamental problems still existed: 1) millions of needles in the waste stream; and 2) employees must physically touch the materials to sort them, thus exposing themselves to potential needlestick risk.

Hope from a trade show

In September 2003 hope emerged. Michael Hagerty, Corporate Safety Director for Recycle America Alliance, met Steve VanErmen, President of HexArmor, at a tradeshow for safety products. Steve was demonstrating the needle resistance of a glove as Michael strolled by the booth. Within a week the two began working together on

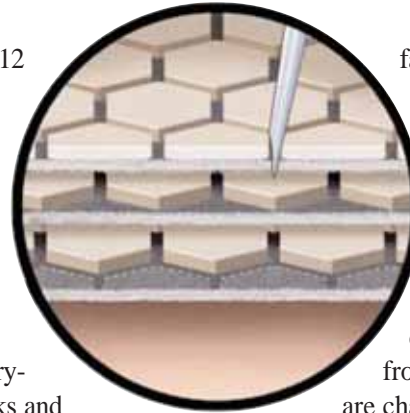
a journey that would take them through 12 different generations of glove design. Most importantly, it was a journey aimed at saving lives by dramatically reducing the incidence of needlesticks in the plants.

The unique technology employed by HexArmor was developed by an ex-3M Ph.D. named Dr. Young-Hwa Kim, who along with associates was trying to solve the problem of needlesticks and scalpel sticks in operating rooms. These scientists were working at a company called Higher Dimension Medical based in St. Paul, MN. They struggled to create something with the dexterity required for surgery (a problem that was subsequently solved). However, the technology had adequate dexterity for other industrial safety applications.

Impact on safety

VanErmen, an investor in HDM, became so convinced in the impact the technology could have on the safety market that he started HexArmor, eventually purchasing the exclusive license to the technology for the safety market.

The technology works by “trapping and blocking” the needle. (See graphic.) Most needles strike a guard plate directly, resulting in the immediate arrest of the needle. If a needle hits a “gap,” it is “trapped” and then blocked by the layer below. The gap provides flexibility to allow the material to bend and flex. Most safety applications require at least two layers of



Cut-away view of layered fabric technology

fabric; three layers provide an extra margin of safety.

RAA developed an internal marketing campaign to promote the new product and the protection. “In the initial rollout of any major change in a safety program, especially with regards to PPE, it is critical that our employees and our front-line managers understand why we are changing and what’s in it for them,” says Hagerty.

In the end, says Hagerty, needlesticks have been virtually eliminated at RAA with the implementation of the new gloves, arm guards and continued safe sorting practices. The implementation also reduced cuts and punctures from wood, nails, metal and glass. In addition, on a recent employee survey, RAA employees overwhelmingly related that they “felt better knowing that the gloves protect them from the hazards of bloodborne pathogens.” | **ISHN**

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