



Medical Waste Management Leader\*



Case Study

# Medical Waste Containers & Polymer Fusion Labeling

How a Medical Waste Management Brand partnered with Polyfuzer to find a labeling solution that could withstand the industry's high regulations.



\*This company's identity (including logo) has been intentionally withheld in this case study at their request for confidentiality. The photos shown are only references of possible label implementations.

# Executive Summary

A global leader in medical waste management partnered with Polyfuzer to enhance their regulated medical waste container tracking and traceability. This collaboration aimed to address the unique challenges of medical waste management, ensuring safety and regulatory compliance.

## Background

This company specializes in the collection, transportation, and disposal of regulated medical waste, a critical service for healthcare facilities. In hopes to improve traceability of their containers, they joined forces with a well-known durable medical waste container manufacturer, praised for their robust healthcare logistics solutions. It was this manufacturer that connected the company to Polyfuzer, with the goal of finding a better tracking solution.

## Problem Statement

The primary issue was the ineffectiveness of traditional labels on regulated medical waste containers made of polyolefin thermoplastics. These materials, commonly used in healthcare environments, pose unique challenges for labeling due to their chemical structure and surface characteristics. Traditional labels often failed to adhere properly or withstand the harsh sanitization processes required in medical waste management, leading to loss of tracking information and potential health risks associated with untraceable medical waste. This problem necessitated a more advanced labeling solution that could endure these demanding conditions.

## Solution

Polyfuzer's solution for the company's medical waste management containers was more than a simple fix. Their polymer fusion labels ensured the branding and tracking information remained intact and clearly visible, despite the harsh conditions the containers endured. These labels underwent rigorous testing by an independent laboratory, exceeding performance criteria in several categories including high pressure water resistance, part washer durability for over 250 cycles, high and low-temperature endurance, rainfall, salt fog salt spray, blowing dust, and humidity resilience. In a unique personal test, the manufacturer's lead engineer ran Polyfuzer barcode label samples through his home dishwasher. After 8 months, despite his wife's insistence to remove them, the labels remained intact, demonstrating their exceptional durability.

## Implementation

The manufacturer implemented Polyfuzer's polymer fusion labels on the medical waste containers. The labels underwent rigorous testing to ensure their performance in extreme conditions. This included exposure to high pressure jets, high and low temperatures, and aggressive cleaning processes, simulating the real-world conditions that medical waste containers face. The robust testing ensured that the labels remained legible and intact, maintaining their tracking capabilities throughout.

## Results

The results were highly positive. Polyfuzer's labels not only withstood the harsh environmental and sanitation conditions but also demonstrated a significant advantage in preventing bacterial contamination. Unlike traditional labels, these polymer fusion labels did not harbor bacteria, thus reducing the risk of Healthcare-Associated Infections (HAIs). This enhancement was crucial, particularly in healthcare environments where traditional labels, with their multiple layers and adhesives, are vulnerable to damage. Such damage can expose the underlying structure and adhesives, creating potential harbor sites for pathogens and increasing the risk of microbial transfer.

## Conclusion

Polyfuzer's role in this collaboration was pivotal. Their innovative labeling technology not only solved the track and trace challenge but also brought additional benefits in terms of sustainability and branding integrity. The durability and recyclability of Polyfuzer labels represent a significant advancement in medical waste management, aligning with this company's commitment to environmental responsibility and efficient resource utilization. This innovative solution led to their product being named Product of the Year by an industry source. Recognized for its high-quality, antimicrobial Medical Waste Containers, the company demonstrated excellence in addressing healthcare waste management issues. This accolade underscores the significance of Polyfuzer's contribution in enhancing safety and sustainability practices in the healthcare industry, marking a milestone in this company's journey of continuous innovation and leadership.