



A COST EFFECTIVE SOLUTION TO MANAGING BIOHAZARD WASTE

INTRODUCTION

As of 2011, 7.8 billion syringes are used every year in the U.S. This number excludes veterinarian care which generates almost another 1 billion for domestic pets, large animal and livestock healthcare.

U.S. healthcare facilities spend over \$10 billion annually to dispose of biohazardous waste materials. This waste material creates exposure risks to employees and patients and is harming our environment.

Every year approximately 800,000 needlestick incidents take place in healthcare. Roughly 16,000 involve needles containing infected blood product. The most serious pathogens involved are HIV, Hepatitis B and Hepatitis C. The cost of needlestick injury follow-up in the U.S. per incident is around \$3,000. A total of \$3 billion is spent annually in the U.S. on needlestick injuries.

Over 8 billion syringes are used in the U.S. per year. That equates to thousands of tons of polypropylene plastic that makes up the syringe that is being incinerated and dump in landfills. Incinerators emit dioxins and mercury. Medical waste incinerators are one of the nation's leading emissions sources of persistent, toxic, bioaccumulative pollutants like dioxins and mercury. And that's not all, the diesel trucks that haul regulated medical waste long distances to incinerators also emit toxic pollutants. Exposure to these pollutants threatens public health.

A main benefit of recycling polypropylene plastic is the reduction in the consumption of raw, finite resources, such as oil and propene gas. It is estimated that around 8% of the oil used worldwide (around 400 million tons) is implemented in the traditional methods of plastic production with 4% as 'feedstock' and another 4% in manufacturing. Also, relative to production from oil and gas, there is up an 88% reduction in energy usage if plastic is produced from plastic. Given its inherent flexibility, polypropylene plastic can be recycled back into many different products, including: Clothing fibres, Industrial fibres, Compost bins, gardening apparatus to name just a few.

SIMPLIFYING WASTE MANAGEMENT USING A COST EFFECTIVE DEVICE

Until now, there hasn't been a cost effective alternative to manage biohazard waste on-site which leaves waste generators such as clinics, hospitals, dentists..... no choice but to contract with a disposal service. Disposal fees can be very costly.

Medical Engineering Development Solutions, Inc. (MEDS) recently introduced the sharpsPRO™ Model 100, a safe and effective device that processes biohazard waste at the point of generation. Waste generators can quickly and safely process sharps waste on-site simplifying waste management and creating a safer work environment as well as eliminating the need for a disposal service.

The sharpsPRO™ consumes a small amount of energy, 200 Watts, as compared to traditional incinerators of sharps waste and produces zero toxic emissions. The Model 100 operates a low dry heat process that melts and sterilizes sharps waste. The sharpsPRO™ also includes a comprehensive cradle-to-grave tracking system for audit and compliance purposes. The sharpsPRO™ is easy to use and requires no maintenance. Because the processed biohazard waste becomes sterilized and non-hazardous, it can be recycled or thrown away in the standard trash.

The sharpsPRO™ simplifies the management of biohazard waste by eliminating the storage of bulky secondary containers and the automated tracking system eliminates all paper work. Waste can be conveniently and safely processed on-site. Scheduling or waiting for a waste disposal pick-up are no longer necessary.

Eliminating disposal fees can quickly pay for the cost of the sharpsPRO™. In many markets, return on investment can be accomplished in just a few months.

ON-SITE PROCESSING IS SIMPLE AND EASY

Remove needle by turning the syringe barrel counterclockwise while the needle luer lock fitting is inserted into remover notch.



First, the needle portion can be removed from the syringe barrel by using the needle remover built into the sharpsCAN™ holder device called the Accessory Unit. Once full, the sharpsCAN™ is removed from the Accessory Unit, scanned by the built-in barcode reader and then placed into the sharpsPRO™. The entire heating and cooling process takes only 2 hours to complete.

The sharpsCAN™ can be processed up to 4 different times. This means that well over 1000 needles can be processed in a single sharpsCAN™.



The luer lock is made of polypropylene which melts and encapsulates the needles. The needles are sterilized.



This sharpsCAN contains over 1000 needles which have been processed in the sharpsPRO. The height of the processed material measures 3" from the bottom of the sharpsCAN.

If it is not possible to remove the needle portion, the entire syringe can be disposed of in the sharpsCAN™. Depending on the size of the syringe, a sharpsCAN™ can process well over 100 syringes after 4 uses.



During a process, syringes are melted and sterilized to form a compact recyclable plastic puck. This puck remains in the sharpsCAN™. The sharpsCAN™ is a recyclable container.

CARBON FOOTPRINT REDUCTION

Low energy consumption.

200 Watts



Fuel consumption and carbon dioxide emissions are eliminated.



Dioxin gas emissions are eliminated.



The sharpsPRO™ provides a platform for sustainability making generators of biohazard waste environmental stewards.

The sharpsPRO™ operates a low energy dry heat process which drastically reduces the carbon footprint associated with the processing of biohazard sharps waste. Also since disposal services are no longer needed, fuel consumption and CO2 emissions from service trucks are eliminated. Toxic emissions from traditional high heat incinerators are also eliminated.

Process in 3 simple steps.

STEP 1



Once the sharpsCAN is full, **SCAN** the barcode label located on the sharpsCAN container.

STEP 2



Insert the sharpsCAN™ container in the sharpsPRO. A single sharpsCAN can be processed 4 different times.

STEP 3



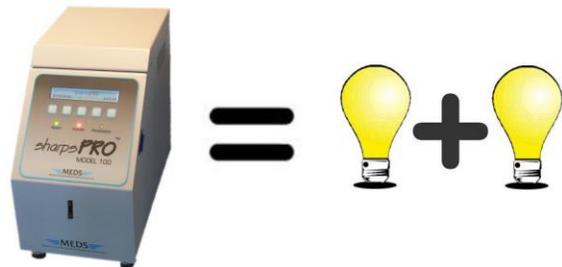
Press the "START" button. The process will finish in approximately 2 hours.



Place the green **NON-HAZARDOUS** sticker on sharpsCAN and recycle or throw away in standard trash.



The sharpsPRO is an energy efficient lightweight device that consumes an equivalent power usage of two 100 watt light bulbs.



CONCLUSION

Since the use of secondary containers, the preparation of these containers as well as the need to fill out manifest tracking forms are no longer necessary when using the sharpsPRO™, the management of medical sharps waste is greatly simplified and this saves time and money.

The sharpsPRO™ provides a convenient, simple and cost effective method of managing biohazard waste and creates a safer work environment. By using the sharpsPRO™, waste generators can be proud of the fact that they are doing their part to be environmental stewards by recycling waste and reducing their carbon footprint.