Appendix D
Background Information and Technical Data on Autoclave Technology

BONDTECH

BIO-MEDICAL WASTE TREATMENT

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BONDTECH'S AUTOCLAVES:

Cost effective medical waste treatment.

- Custom design for independent customers needs.
- Extensive experience in the Medical Waste sector.
- Complete line of equipment and accessories for the medical waste industry.
- Advance commercial and on-site technology

INTRODUCTION

Bondtech Corporation specializes in the sale and manufacturing of Autoclaves and Autoclave Systems. ***Bondtech*** has designed, engineered and manufactured autoclave systems for technical industries such as aerospace composite, glass lamination, rubber vulcanizing, wood treating, infectious medical waste treatment, yarn setting and many other technical applications.

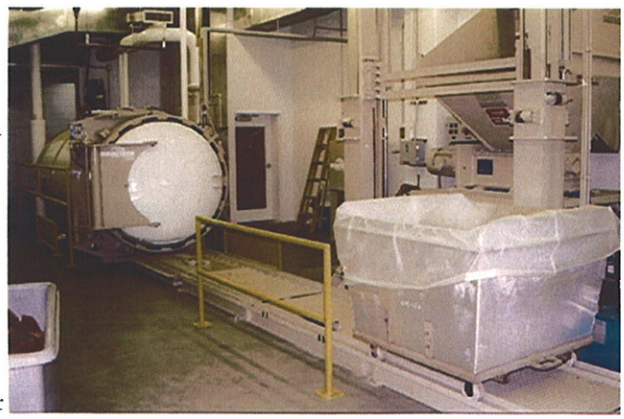
Bondtech has supplied autoclaves and autoclave systems to the medical waste treatment industry for the treatment of infectious waste for more than 15 years. ***Bondtech*** has made a total commitment to ensure that our customers purchase a quality autoclave system that is environmentally safe, reliable, easy to operate and priced competitively.

Bondtech has made a total commitment to provide the best possible service available. We offer a complete one-stop facility and turnkey service to improve pricing and customer accountability. Our ability to provide high quality equipment at competitive prices has made us the proven leader in the autoclave market and it has given us the respect of the industry.

Bondtech is the largest manufacturer and supplier of commercial medical waste autoclave systems in the world.

In an effort to assist our customers with reliable equipment as well as a one-stop accountable supplier, ***Bondtech*** is offering the following auxiliary equipment and accessories:

1. Shredders for biomedical waste, sharps and paper destruction.
2. Bin dumpers
3. Aluminum and Aluminum bins
4. Autoclavable bags
5. Red bags and Chemo bags
6. Reusable medical waste containers
7. Compactors and balers
8. Scissor lifts
9. Boilers and more



Hospital—Bondtech Autoclave Installation

SERVICES OFFERED

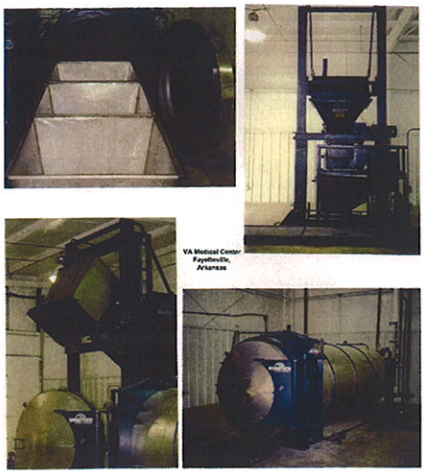
- Complete turnkey installation and maintenance service.
- Evaluation of equipment requirements to satisfy market conditions.
- Identification and specification of equipment for plant or business applications.
- Design fabrication and supply of autoclaves, vacuum pumps, material handling systems, boilers, shredders, balers, compactors, roll-off containers, waste bins, autoclavable bags and misc. bags.
- Development and performance of maintenance management and quality control.
- Creation of training program to improve performance and/or acquaint company personnel to operate equipment properly and efficiently.

"PROVEN AND RELIABLE MEDICAL WASTE TREATMENT SYSTEM"

GENERAL PERFORMANCE

Process Description: ***Bondtech Autoclave System's*** are high vacuum, high pressure systems. ***Bondtech*** autoclaves are subject to a pre-vacuum cycle, pulsating saturated steam cycle, and a post vacuum cycle to facilitate faster and more uniform penetration of steam into the medical waste to be treated.

Bondtech Autoclave System's high vacuum is achieved by using a top of the line liquid seal vacuum pump or a steam ejector. ***Bondtech Autoclave System's*** locking ring, quick opening door is used in the most sophisticated aerospace autoclaves, and designed with safety in mind. In this particular design, the door is stationary and the locking ring is mounted on the periphery of the vessel and is rotated through a short arc by hydraulic or pneumatic cylinders located on the side of the vessel.



On-site hospital operation depicting: Aluminum bins, shredder, bin dumper and *Bondtech's* autoclave.

TREATMENT METHOD

Bin Loading: Autoclave bins are loaded with infectious waste and are transferred into the autoclave vessel for treatment. This process can be performed by an automatic conveying system, in the most sophisticated commercial operations, or manually in smaller commercial and on-site operations; the door is closed, automatically or manually; and the operator is able to start the preprogrammed cycle by pushing a "start" button.

Treatment: After the autoclave door is closed the following steps are performed by the preprogrammed controller. The first step is the pre-vacuum process. A vacuum of 24"-28" Hg. is pulled during the pre-vacuum to evacuate the air from the vessel and to expedite and insure good steam penetration into the infectious medical waste. Steam ramps up the autoclave (275-305 Deg. F.). The waste load is then soaked at temperatures to meet the State regulations and to effectively treat the waste to render it noninfectious and safe for final disposal. Venting is performed through a steam condenser resulting in no steam being released into the atmosphere. The post vacuum cycle removes residual steam from the autoclave, flashes residual liquids drying the waste, minimizes the associated treatment smell and insures a safer environment for the operator and workers in the floor area.

Record Keeping: ***Bondtech Autoclave Systems*** have an automated chart recorder at the control panel which continuously records the temperature, vacuum and pressure. This information is maintained on permanent, hard copy records for each load of medical waste treated, further complying with quality control and satisfying environmental regulatory requirements.

Unloading: Once the cycle is completed, the autoclave will illuminate a green light showing the cycle is complete and the door is ready to be opened. The operator will then unload the autoclave and the bin dumper will empty the bins into a compactor or a shredder.

Shredders: ***Bondtech Autoclave Systems*** shredders are heavy duty, single or double stage shredders to meet required particle size. Each knife configuration has been designed to suit the material for maximum throughputs and optimum size.

Advantages and Waste Volume Reduction: After autoclaving the waste volume is reduced by approximately 45-50%. Further reduction can be realized with the installation of an optional shredder. The major advantages of steam sterilization are the low costs associated with this process as well as the reliability of this well known technology.

TECHNICAL BACKGROUND

Bondtech has designed, supplied and installed more than 100 waste autoclaves/ sterilizers for the treatment of infectious medical waste for commercial operations processing more than 3.0 million pounds per day. These large autoclave systems have been designed in accordance with our customers requirements; follow EPA guidelines and regulations; and have been designed making sure decontamination of the waste occurs.

In order to insure proper decontamination, ***Bondtech*** offers a pre-vacuum cycle to facilitate faster and more uniform steam penetration into the infectious waste to be treated and a post vacuum to insure a dryer end product and reduction of nuisance odors. The control system provides automatic sequencing and operation of the system and also records and provides data on every cycle of operation.

Bondtech has a track record and a very good reputation in the Industry.

Commercial—Bondtech Autoclave Installation

BONDTECH IS THE LEADER IN BIOMEDICAL WASTE AUTOCLAVES

BONDTECH'S DESIGN

- Ruggedly Designed and Built for Commercial Use
- Hydraulic Quick Opening Door/with Safety Pin Interlock
- Vacuum Pump or Vacuum Ejector for High Vacuum Operation
- Temperature Probes for Added Protection Assurance
- Programmable Control Systems
- Recorders
- Packaged and Modularized for Easy Installation
- Volume Reduction Achieved by the Vacuum Cycle and the Heat Cycle and Further Reduced if Shredding
- Weight Reduction at Time of Final Disposal Achieved by Removal of Moisture
- Built in Strict Accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1

WORLD WIDE INSTALLATIONS

Bondtech's medical waste autoclaves are operating in:

United States: Arkansas, Alabama, California, Colorado, Florida, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, New Mexico, New York, Oklahoma, Pennsylvania, Puerto Rico, South Carolina, Tennessee, Texas, Virginia.

International: Argentina, Canada, Korea, Mexico, Peru, Qatar, Thailand and the Philippines

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We are on the web!
www.bondtech.net

AUTOCLAVE SYSTEMS

FEATURES:

No Shredding prior to treatment:

- No potential aerosilization of pathogens.
- No bloodborne pathogen exposure
- Minimizes occupational exposure

High vacuum system:

- Ensures effective medical waste treatment
- No residual steam exposure
- Controls nuisance odors

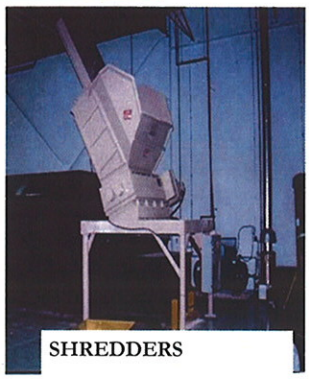
High pressure/temperature:

- Insures effective medical waste treatment
- Log 6 or better reduction against Bacillus stearothermophilus
- Reliable proven technology
- Largest company providing commercial medical waste systems
- Experienced in medical waste since 1983

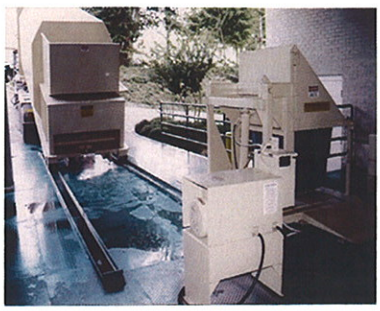
Simple and Safe System:

- Safe Operation
- No personal contact with infectious medical waste
- No personal contact with sterilized medical waste
- Minimal moving parts
- Sing le push button
- Automated System

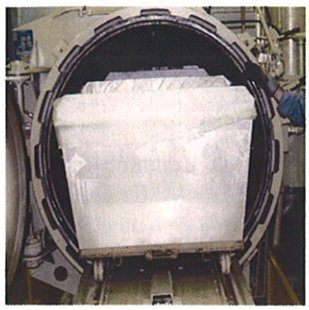
ADDITIONAL PRODUCTS



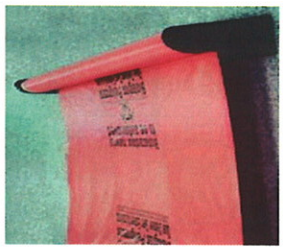
SHREDDERS



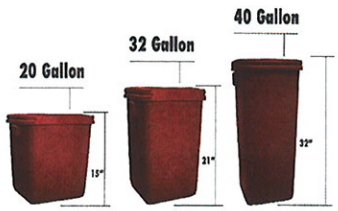
COMPACTORS/
CONTAINERS/
DUMPERS



ALUMINUM CARTS
AUTOCLAVABLE
LINERS



BAGS: Autoclavable, red, chemo & more



WASTE CONTAINERS

IMPORTANT FACTORS TO CONSIDER:

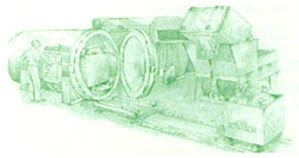
In the United States, the steam autoclave is the most popular and cost effective medical waste treatment technology. Unlike the incinerator, the autoclave technology does not generate any hazardous combustion air pollutant emissions, such as hydrochloric acid, carbon monoxide, dioxin/furnans, metal (particulate matter), etc. The autoclaved medical waste byproduct is sanitized and safe for landfill disposal.

More than 90% of the newly permitted commercial medical waste facilities since 1990 employ state of the art autoclave technology. ***Bondtech Corporation*** was awarded more than 90% of the contracts making ***Bondtech Corporation*** the worlds largest supplier of commercial medical waste treatment systems.

Today, landfills across the world where medical waste is regulated accept autoclaved medical waste. Medical waste that is properly steam autoclaved is rendered noninfectious and safe for disposal at sanitary landfills. The autoclaved medical waste does not exhibit any leachate characteristics (heavy metals, etc.), as found in ash generated by incinerators. Autoclaved medical waste basically consists of approximately 75% paper and plastic, 22% fluff (cloth) and 36% pathological (body parts). In the United States, body parts are generally incinerated.

To maximize landfill space, autoclaved medical waste can be safely compacted to achieve 60% volume reduction. Further reduction can be realized by installation of an optional shredder. The shredding process is performed only after the waste has been treated by the ***Bondtech Autoclave System***. No shredding is ever performed prior to treatment. The autoclave technology has been thoroughly proven and ***Bondtech Autoclaves*** have been tested for more than 15 years in the United States. Today the bulk of the medical waste treatment capacity is by autoclave technology.

BONDTECH IS READY TO HELP YOU DESIGN YOUR MEDICAL WASTE FACILITY. PLEASE DO NOT HESITATE TO CALL.
TEL.: 800-414-4231



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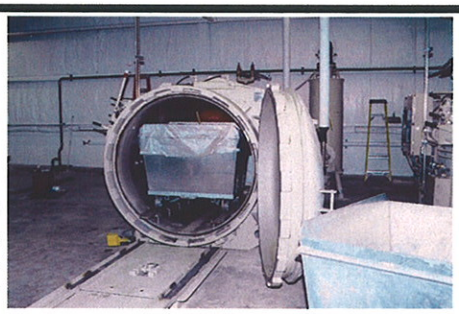
TREATMENT OF INFECTIOUS WASTE



Introduction

The purpose of treating infectious waste is to change its biological character so as to reduce or eliminate its potential for causing disease. Incineration and steam sterilization are the most frequently used infectious waste treatment techniques. However, autoclaves have become the most popular medical waste treatment technology in the past few years. Since 1990 more than 90% of newly permitted commercial medical waste treatment capacity in the United States went to autoclave systems. ***Bondtech Corporation*** was awarded more than 90% of the contracts making ***Bondtech Corporation*** the largest commercial medical waste manufacturer in the world.

Following is a list of other alternative processes used to treat infectious waste:

- Gas/vapor sterilization
- Chemical disinfecting
- Microwave technology
- Irradiation
- Others

Monitoring

A convenient approach to determine treatment effectiveness is the use of biological indicators. Biological indicators are standardization products that are routinely used to demonstrate the effectiveness of the treatment process. It is now current practice to use spores of a resistant strain of some particular bacteria species for testing each specific treatment process. *The United States Pharmacopoeia* recommends the use of biological indicators for monitoring treatment processes such as steam sterilization, incineration and thermal inactivation.

There are other indicators that provide an instantaneous indication — usually by a chemically induced color change — of the achievement of a certain temperature. However, these indicators are not suitable for use in monitoring the sterilization process because each treatment technique involves a combination of factors; therefore, no single factor is a valid criterion for indicating the effectiveness of the sterilization process. (For example, in steam treatment, the waste must be exposed to a certain temperature for at least a minimum period of time in order to achieve disinfection. Therefore, any indicator that indicates only the attainment of a particular temperature is not suitable for monitoring the effectiveness of steam sterilization).

Other indicators which monitor the treatment process may be used. However, it is recommended that the appropriateness and reliability of these indicators be confirmed before they are used to monitor infectious waste treatment.

It is essential that indicators be properly placed within the waste load so that they will indicate accurately the effect of treatment of the entire waste load. Therefore, to assure accurate monitoring, the biological indicator should be distributed throughout the waste load.

Monitoring is essential in development of standard operating procedures for each treatment technique to verify that the treatment process is effective. Monitoring also permits refinement of the operating procedures that excess processing can be avoided while savings are realized in expenditures of time, energy and/or materials. Subsequently periodic monitoring serves to demonstrate sterilization, thereby confirming that proper procedures were used and that the equipment was functioning properly.

Steam treatment of infectious waste utilizes saturated steam within a pressure vessel (known as a steam autoclave, sterilizer, or retort), at temperatures sufficient to kill infectious agents present in the waste.

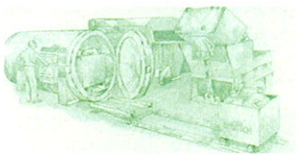
There are two general types of steam autoclaves - the gravity displacement type in which the displaced air flows out the drain through a steam-activated exhaust valve, and high vacuum type, in which the vacuum is pulled to remove the air before steam is introduced to the chamber.

Bondtech Autoclave Systems **are supplied with an industrial grade vacuum pump to pull 28" HG pre-vacuum to void autoclave chamber of air before induction of steam treatment. After the steam treatment is completed, the unit then pulls a post vacuum that voids the autoclave chamber of moisture and odor. The moisture/condensed steam is scrubbed and filtered during the post vacuum cycle and the result is drier waste than what you started with, and with virtually no odors.** With both types, as the air is replaced with pressurized steam, the temperature of the treatment chamber increases. This results in temperature increases within the waste load which under most conditions are sufficient to treat the waste

Treatment by steam sterilization is time and temperature dependent; therefore, it is essential that the entire waste load is exposed to the necessary temperature for a defined period of time. (Heating the containers and the waste usually lags behind heating of the ***chamber. Bondtech Autoclave Systems*** **are very efficient with total cycle time within approximately one hour.**

In steam sterilization, decontamination of the waste occurs primarily from steam penetration. Heat conduction provides a secondary source of heat transfer. Therefore, for effective and efficient treatment, the degree of steam penetration is the critical factor. For steam to penetrate throughout the waste load, the air must be completely displaced from the treatment chamber. The presence of residual air within the sterilizer chamber can prevent effective sterilization by reducing the ultimate possible temperature of the steam, regardless of the pressure; causing variation in temperature throughout the chamber, prolonging the time needed to attain the maximum temperature, and inhibiting steam penetration into porous materials

Bondtech Autoclave Systems **are full vacuum thus eliminating the chance for inadequate disinfection.** Factors that can cause incomplete displacement of air include: improper loading (which may prevent the circulation of steam within the chamber), and use of individual heat resistant plastic bags.



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The principal factors that should be considered when treating infectious waste by steam are:

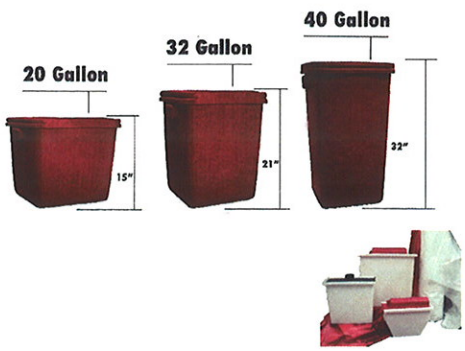
- Type of waste
- Packaging and containers
- Volume of the waste load and its configuration in the treatment chamber

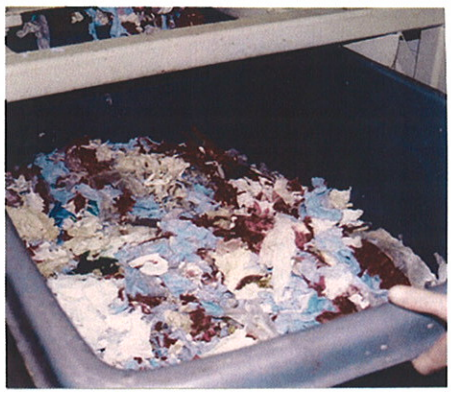
TYPE OF WASTE

Infectious waste with low density (such as plastics) is more amenable to steam disinfections. High density waste such as large body parts, and large quantities of animal bedding and fluids inhibit direct steam penetration and require longer disinfections time. Alternative treatment methods should be considered (i.e., incineration) for these wastes.

PACKAGING AND CONTAINERS

A variety of containers are used in steam sterilization including plastic bags, metal pans, bottles, and flasks. One consideration with plastic bags is the type and thickness of the plastic and its suitability for use in steam treatment. There are some plastic bags which are marketed as autoclavable (i.e., they are heat resistant and do not melt). These bags are constructed of high density polyethylene or polypropylene and help keep the autoclave carts clean. ***Bondtech*** **autoclave carts can be Teflon coated in order not to use autoclavable bags, or** ***Bondtech*** **can supply a low price heat resistant bag.** ***Bondtech Autoclave Systems*** **full vacuum will bust sealed containers thus providing excellent steam penetration.**





VOLUME AND CONFIGURATION OF THE WASTE LOAD

The volume of the waste is an important factor in steam disinfecting as it can be difficult to attain sterilizing temperatures in large loads.

Many infectious wastes that have multiple hazards should not be steam disinfected. Infectious wastes that should not be disinfected include those that contain antineoplastic drugs, toxic chemicals, or chemicals that would be volatilized by steam.

Persons involved in steam disinfecting waste should be educated in proper techniques to minimize personal exposure to the hazards posed by these wastes. These techniques include use of protective equipment, minimization of aerosol formation, and prevention of spillage of waste during autoclave loading. ***Bondtech*** **provides through operation and maintenance training.**

A chart recorder should be used to ensure that a sufficient high temperature is maintained for an adequate period of time during the cycle. ***Bondtech Autoclave Systems*** **are supplied with two temperature recorders - (1) stationary and (1) in the chart recorder.** Failure to attain or maintain operating temperature may indicate mechanical failure.

All steam autoclaves should be routinely inspected and serviced. Monitoring the steam process is required to ensure efficient treatment. The process should be monitored periodically to check that proper procedures are being followed and that the equipment is functioning properly. Bacillus stearothermophilus is recommended by the United States Pharmacopoeia as the biological indicator for monitoring steam sterilization/disinfecting. There are other indicators that may effectively monitor the treatment process; however, because steam disinfecting is time and temperature dependent, any indicator that is used should effectively monitor both of these factors

BONDTECH CORPORATION

Bondtech Autoclaves

High Vacuum Bio-Medical Autoclave

Commercial Systems • On-Site Systems • Mobile Systems

Bondtech's Autoclave systems have been operating commercially for the past ten years. Bondtech's Medical Waste customers include BFI, Waste Management, Med-x, Applied Recovery, SteriMed, and Med-Tech to name a few.

Bondtech biomedical waste autoclaves were developed to provide our customers significant cost savings on waste treatment by using high vacuum and high temperature with saturated steam. We can provide commercial, on-site and mobile systems.

Bondtech offers:

- *Turnkey projects*
- *One stop turnkey equipment supply and installation*
- *Engineering, maintenance, and consulting*

Special Equipment Features:

- *Ruggedly designed and built for commercial use*
- *High vacuum for effective waste treatment*
- *Easy to operate, programmable controller*
- *Continuous monitoring and recording*
- *Packaged and modularized for ease of installation*
- *Highly reliable*
- *Cost effective*
- *Proven at high volume commercial installations*

Bondtech's biomedical waste autoclaves are capable of treating from 200 lbs. – 7,000+ lbs. / cycle.

Bondtech's provides a hinged mounted door to provide full movement to a full opened position. It is a breech lock type door with a safety interlock to prevent the door from opening under pressure.

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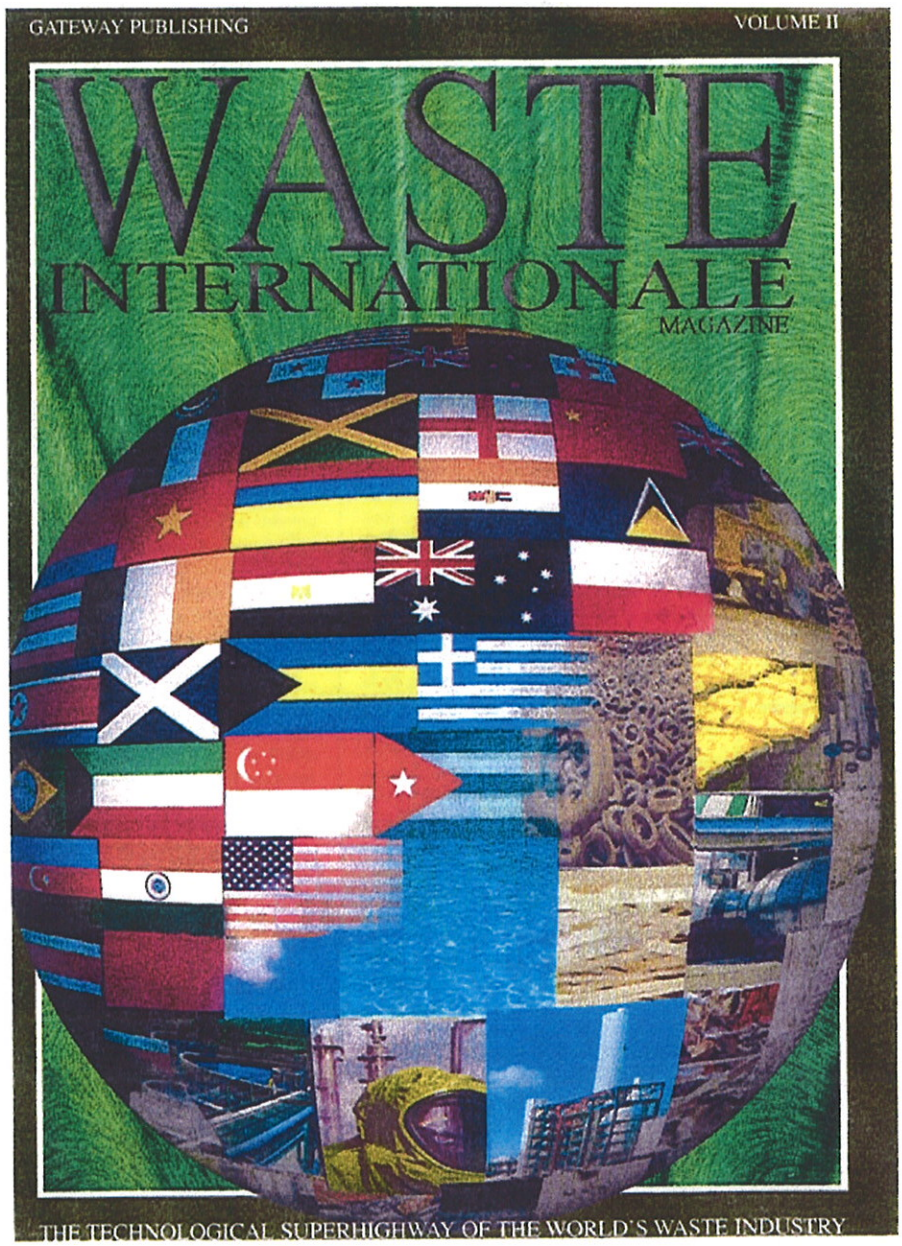
MEDICAL WASTE ARTICLE FEATURING

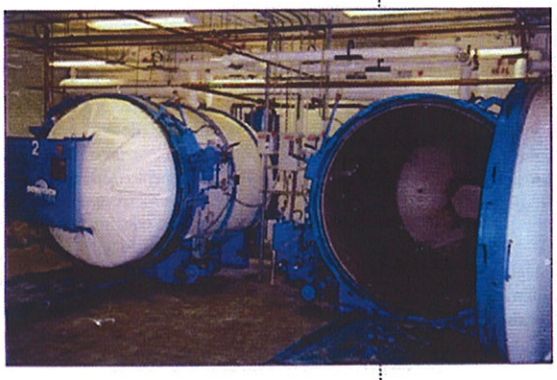
BONDTECH CORPORATION



MEDICAL WASTE

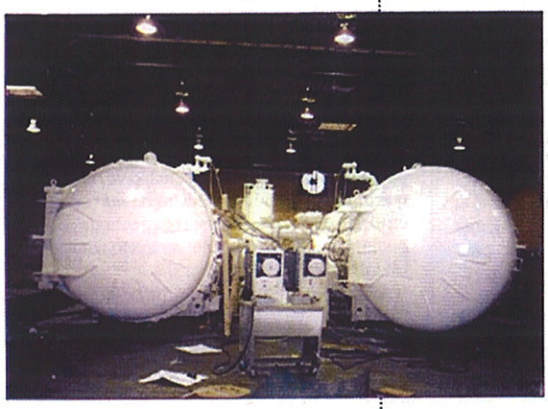
COST-EFFECTIVE MEDICAL WASTE TREATMENT PROVEN TECHNOLOGY: HIGH VACUUM / HIGH PRESSURE AUTOCLAVE SYSTEMS

Medical waste management has grown into a sophisticated industry market niche in the United States as well as various parts of the world. Worldwide education in health care occupational dangers from diseases such as AIDS, Hepatitis and other pathogenic diseases have many countries developing and establishing regulations for implementing safe packaging, transportation and treatment of infectious medical waste.



In the United States, this industry is now over a decade old and currently all medical waste is managed in accordance U.S. environmental and occupational safety regulations.

Regulations in the United States require that all medical waste must be properly treated and rendered non-infectious prior to final disposal at a sanitary landfill. In the early 1980s, incineration was the method of choice for medical waste treatment. However, due to the United States Clean Air Act and organized opposition from environmental groups, incinerators became heavily regulated and increasingly difficult to permit, construct and operate.



LE TRAITEMENT EFFICACE DE DÉCHETS MÉDICAUX EN TERMES DE COÛTS TECHNOLOGIE PROUVÉE: SYSTÈMES D'AUTOCLAVE À VIDE POUSSÉ ET À HAUTE PRESSION

Le domaine du traitement des déchets médicaux s'est constitué une niche sophistiquée sur le marché de l'industrie aux Etats-Unis et dans d'autres parties du monde. L'éducation au niveau mondial en ce qui concerne les dangers auxquels les professionnels des soins de santé sont exposés en raison de maladies comme le SIDA, l'hépatite et autres affections pathogènes a poussé de nombreux pays à développer et établir des règlements assurant l'emballage, le transport et le traitement sans danger de déchets médicaux infectieux. Aux Etats-Unis, cette industrie a pris son essor depuis dix ans et actuellement, tous les déchets médicaux sont traités conformément aux règlements américains concernant l'environnement et la sécurité au travail.

Les règlements américains exigent que tous les déchets médicaux soient correctement traités et rendus non infectieux avant leur rejet final dans une décharge contrôlée. Au début des années 80, l'incinération était la méthode de choix quant au traitement des déchets médicaux. Toutefois, en raison de la loi contre la pollution de l'air et de l'opposition organisée par des groupes concernés par l'environnement, les incinérateurs sont devenus extrêmement réglementés et de plus en plus difficiles à exploiter en termes d'obtention de permis, de construction et d'opération. De surcroît, l'Environmental Protection Agency américaine a récemment publié de nouveaux règlements déterminant des normes d'émissions atmosphériques plus strictes aboutissant à la fermeture anticipée de 80% des incinérateurs de déchets médicaux qui restent aux Etats-Unis d'ici l'an 2000.

Bondtech Corporation: Une expérience qui compte

Depuis les 15 dernières années, les gestionnaires expérimentés de Bondtech se sont entièrement consacrés à collaborer avec l'industrie des soins de santé et les organismes de

TECNOLOGÍA COMPROBADA PARA TRATAMIENTO ECONÓMICO DE RESIDUOS MÉDICOS: SISTEMAS DE TRATAMIENTO EN AUTOCLAVES CON ALTO VACÍO/ALTA PRESIÓN

El control de residuos médicos se ha convertido en una industria sofisticada que se ha impuesto en el mercado estadounidense y en varias partes del mundo. La educación a nivel mundial sobre los peligros ocupacionales de la industria del cuidado de la salud debido a enfermedades como el SIDA, la hepatitis y otras enfermedades patógenas, ha hecho que muchos países establezcan reglamentos para poner en práctica medidas de seguridad para el embalaje, el transporte y el tratamiento de residuos médicos infecciosos. En Estados Unidos, esta industria tiene ya más de una década de existencia y en la actualidad todos los residuos médicos son manejados de acuerdo con reglamentos de seguridad ocupacional y para la protección del medio ambiente.

En Estados Unidos los reglamentos exigen que todos los residuos médicos sean tratados debidamente y clasificados como no infecciosos antes de su eliminación final en vertederos sanitarios. A principios de la década de los ochenta, la incineración era el método usual para el tratamiento de residuos médicos. No obstante, debido a la Ley Estadounidense de Pureza del Aire y protestas organizadas por grupos de protección del medio ambiente, los incineradores fueron objeto de rigurosas regulaciones que hacen difícil su construcción, funcionamiento y autorización. Más aún, la Agencia Estadounidense de Protección del Medio Ambiente emitió un reglamento reciente que establece normas de emisión de aire más estrictas que tendrán como resultado el cierre proyectado para el año 2,000, del 80% de los incineradores de residuos médicos que continúan en uso.

Bondtech Corporation: experiencia que cuenta

En los últimos 15 años, el personal de Bondtech con experiencia en el tratamiento de residuos, ha estado totalmente dedicado a trabajar con la industria del cuidado de la salud y con los funcionarios encargados de elaborar reglamentos relacionados con el medio ambiente, para resolver los problemas de los residuos infecciosos en todo el mundo. Bondtech ha proporcionado sistemas económicos e inofensivos para el medio ambiente, de tratamiento de residuos médicos que incluyen diseños rigurosos y programas de capacitación en control de residuos médicos. El tratamiento en autoclaves se ha convertido en la tecnología de tratamiento de

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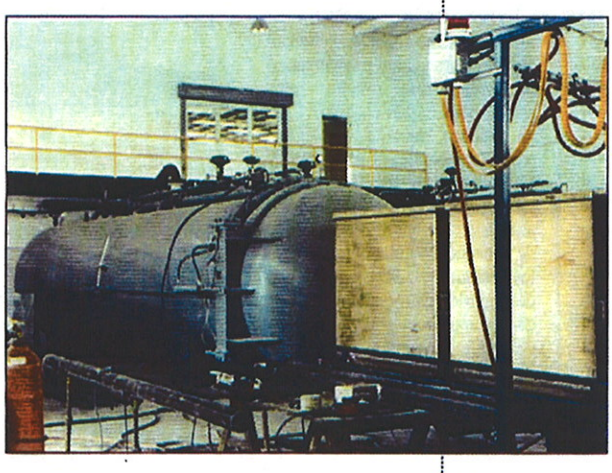
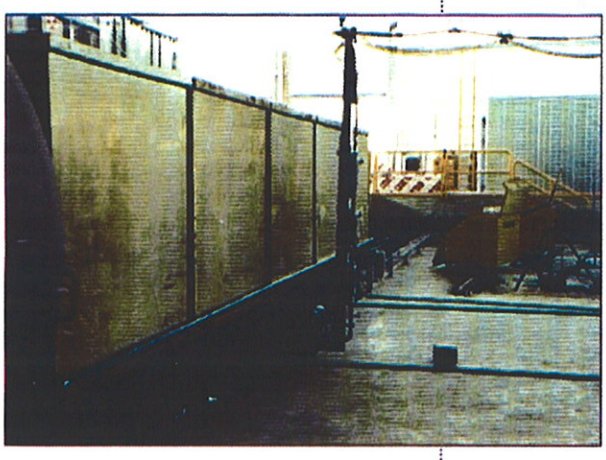
Furthermore, the U.S. Environmental Protection Agency issued recent regulations establishing tougher air emission standards that will result in a projected shut down of 80% of the remaining medical waste incinerators in the United States by the year 2000.

Bondtech Corporation: Experience that Counts

For the past 15 years, Bondtech's experienced management personnel have been fully committed to working with the health care industry and environmental regulators to resolve the infectious waste problem around the world. Bondtech has provided environmentally sound and economical medical waste treatment systems including comprehensive design and training of medical waste management. Autoclaves have become the most popular medical waste treatment technology. Since 1990, over 90 % of newly permitted commercial medical waste treatment capacity in the United States went to autoclave systems. Bondtech Corporation was awarded over 90% of the contracts making Bondtech Corporation the largest commerical medical waste manufacturer in the world.





Since 1983, Bondtech Corporation has specialized in the manufacturing and installation of autoclave systems. Bondtech has designed, engineered and manufactured autoclave systems for technical industries such as medical waste, foreign food/agricultural waste, aerospace composites, glass lamination, rubber vulcanizing, wood treating, yarn setting and many other technical applications.

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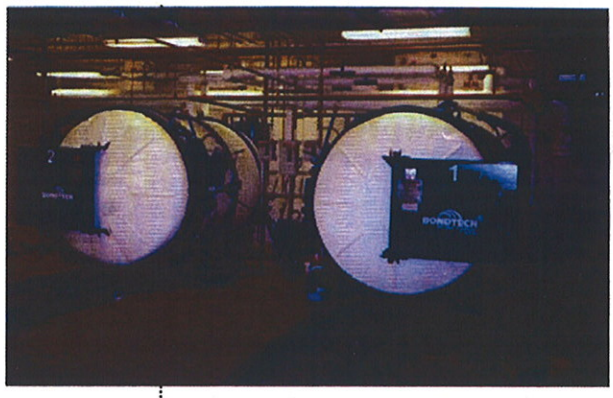
réglementation de l'environnement pour résoudre le problème mondial des déchets infectieux. Bondtech a produit des systèmes de traitement de déchets médicaux économiques et respectueux de l'environnement dont un projet complet de conception et formation se rapportant au traitement des déchets médicaux. Les autoclaves sont devenus la technique de traitement des déchets médicaux la plus populaire. Depuis 1990, plus de 90% des installations commerciales de traitement des déchets médicaux ayant reçu un nouveau permis aux Etats-Unis se sont tournées vers les systèmes à autoclave. La société Bondtech a adjugé plus de 90% des marchés ce qui la rend le plus grand fabricant commercial mondial de technologies de traitement de déchets médicaux.



Depuis 1983, la société Bondtech s'est spécialisée dans la fabrication et l'installation de systèmes d'autoclave. Bondtech a conçu, mis au point et fabriqué des systèmes d'autoclave pour les industries techniques telles que les déchets médicaux, les déchets agricoles et d'alimentation exotique, les composés de l'industrie aérospatiale, le laminage du verre, la vulcanisation du caoutchouc, le traitement du bois, la thermofixation du fil et de nombreuses autres applications techniques.

Les systèmes d'autoclave Bondtech sont actuellement en opération dans plusieurs usines appartenant et exploitées par la plus grande société mondiale de distribution de services se rapportant aux déchets médicaux, Browning Ferris Industry. De plus, ces systèmes d'autoclave sont utilisés dans des installations commerciales et hospitalières situées à travers tous les Etats-Unis, au Canada, au Mexique, au Pérou, en Argentine, en Arabie Saoudite, aux Indes et en Corée.

Technologie de pointe

Bondtech a produit des systèmes d'autoclave ultra-perfectionnés capables de vide poussé et de haute pression. Ces systèmes sont conçus spécialement pour répondre aux spécifications particulières des clients et sont capables de traiter de 115 kg (250 livres ou 1,81 yards cube) à 2,727 kg (6,000 livres ou 43,52 yards cube) par cycle.

Le système d'autoclave fonctionne selon un processus de charge par lot permettant de minimiser les coûts en main-d'oeuvre. Une fois que les déchets médicaux sont chargés par lot dans l'autoclave, il suffit à l'opérateur de pousser un bouton de démarrage pour activer un cycle de stérilisation des déchets complètement automatisé.

Le cycle commence par un traitement à vide poussé (à vide préalable) permettant de préparer les

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residuos médicos más popular. Desde 1990, más del 90% de los permisos para instalaciones de tratamiento de residuos médicos han sido emitidos para sistemas de tratamiento en autoclaves. El 90% de los contratos fueron asignados a Bondtech Corporation, lo que la convierte en el fabricante comercial de productos para residuos médicos más grande del mundo.

Desde 1983, Bondtech Corporation se ha especializado en la fabricación e instalación de sistemas de tratamiento en autoclaves. Bondtech ha diseñado, realizado y fabricado sistemas de tratamiento en autoclaves para industrias técnicas como la de residuos médicos, residuos de alimentos y de agricultura de otros países, compuestos aeroespaciales, laminado de vidrio, vulcanización de caucho, tratamiento de la madera, estabilización de hilados teñidos y muchas otras aplicaciones técnicas.

Los sistemas de autoclave de Bondtech se encuentran actualmente funcionando en instalaciones propiedad de Browning Ferris Industry, la compañía de control de residuos médicos más grande del mundo, que ésta opera. Además, hay instalaciones comerciales y en hospitales en diferentes regiones de Estados Unidos, Canadá, México, Perú, Argentina, Arabia Saudita, India y Corea.

Tecnología avanzada

Bondtech ofrece los más avanzados sistemas de autoclave con capacidad para alto vacío y alta presión. Los sistemas de tratamiento en autoclaves de Bondtech se diseñan de acuerdo con las especificaciones de los clientes y tiene capacidad para procesar de 115 kg (250 lbs.) o 1.81 yardas cúbicas a 2,727 kg (6,000 lbs.) o 43,52 yardas cúbicas/ciclos.

El sistema de tratamiento en autoclave ha sido diseñado como un proceso de tratamiento por lotes, para minimizar el costo de la mano de obra. Una vez que un lote de residuos médicos ha sido introducidos en el autoclave, el operador sólo tiene que oprimir un botón para activar un ciclo completo automático de esterilización de residuos médicos.

El ciclo comienza con un proceso de alto vacío (prevacío) para preparar los residuos médicos para una penetración de vapor efectiva. Posteriormente, los residuos médicos son sometidos a la acción de vapor de alta presión, con una temperatura de hasta 150 grados Celsio (300 grados F.). El alto vacío (prevacío) y la alta presión aseguran la total esterilización de los residuos médicos (con una reducción de log6 o mayor de bacilos estearotermófilos). Después del proceso de alto vacío/alta presión, se ventila el autoclave y se condensa el vapor. Un segundo proceso de alto vacío (postvacío) elimina totalmente el vapor y la humedad residuales. El postvacío aumenta la seguridad del operador asegurando que no haya

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Bondtech autoclave systems are currently operating at several facilities owned and operated by the world's largest medical waste service company, Browning Ferris Industry. In addition, there are commercial and hospital installations throughout the United States, Canada, Mexico, Peru, Argentina, Saudi Arabia, India and Korea.

State of the art Technology

Bondtech offers state of the art autoclave systems capable of high vacuum and high pressure. Bondtech's autoclave systems are custom designed to meet customers' specifications and are capable of processing from 115 kg (250 Lbs.) or 1.81 cubic yards to 2,727 kg (6,000 Lbs.) or 43.52 cubic yards/cycle.

The autocalve system is designed as a batch load process to minimize labor cost. Once the medical waste is batch loaded into the autoclave, the operator simply pushes a start button and a complete automated medical waste sterilization cycle is activated.

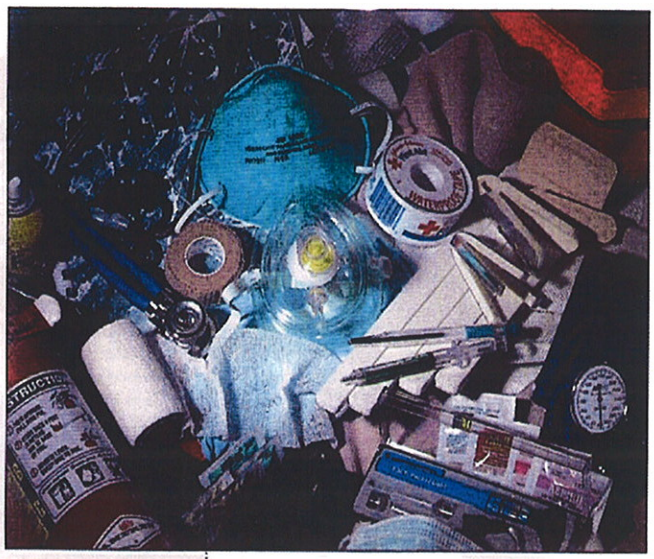
The cycle starts with a high vacuum (prevacuum) process to prepare the medical waste for effective steam penetration. Thereafter, the medical waste is subjected to high pressure steam achieving a temperature of 150 degress Celcius (300 deg F). The high prevacuum and high pressure ensures that the medical waste is completely sterilized (log6 reduction or greater of Bacillus Stearothermophilus). After the high pressure/high temperature process, the autoclave is vented and the steam is condensed . A second high vacuum (post vacuum) completely removes the residual steam and moisture. The post vacuum enhances operator worker safety ensuring that no steam is emitted exposing the worker once the autoclave door is opened. In addition, the post vacuum and steam condensation system prevents the generation of undesired odors and maintains the treated medical waste dry.

Proven & Reliable Medical Waste Treatment System

Bondtech Corporation has proven to be an industry leader in providing environmentally sound state of the art medical waste treatment systems to customers all over the world. Through its 15 years of operation at high volume commercial facilities, Bondtech has satisfactorily proven the reliability, durability and medical waste treatment effectiveness of the Bondtech high vacuum/high pressure autoclave systems.

- ❒ Pretreatment shredding is NOT required. To maximize landfill space, autoclaved medical waste can be safely compacted to achieve 60% volume reduction. Further reduction can be realized by installation of an optional shredder.
- ❒ Various capacities available, custom designed to customer's needs.
- ❒ Today, landfills across the world accept accepts autoclaved medical waste. Medical waste that is properly steam autoclaved is rendered noninfectious and safe for disposal at sanitary landfills.
- ❒ Proven installations, 15 years in operation.
- ❒ Effective Treatment, Log6 or greater reduction of Bacillus Stearothermophilus.
- ❒ High Vacuum System, prevents steam exposure to operators and prevents wetting of waste. ☐

déchets médicaux à une pénétration efficace de la vapeur. Ils sont ensuite soumis à une vapeur à haute pression atteignant une température de 150 °C. Le vide poussé et la pression élevée assurent la stérilisation complète des déchets médicaux (à une réduction log6 ou plus élevée du Bacillus Stearothermophilus). A la fin de ce processus de pression et de température élevées, l'autoclave est aéré et la vapeur est condensée. Un second cycle de vide poussé (second vide) élimine complètement la vapeur et l'humidité résiduelles. Le second vide améliore la sécurité de l'opérateur en assurant l'absence d'émissions de vapeur auxquelles il pourrait être exposé une fois que la porte de l'autoclave est ouverte. En outre, le système de second vide et de condensation de vapeur empêche le développement d'odeurs indésirables et maintient les déchets médicaux traités à l'état sec.



Un système de traitement de déchets médicaux prouvé et fiable

Bondtech Corporation a démontré qu'elle était le leader de l'industrie en fournissant des systèmes de traitement de déchets médicaux ultra-sophistiqués et écologiquement rationnels à ses clients mondiaux. Au cours de ses 15 années d'opération dans des usines commerciales à gros volume, Bondtech a démontré de manière satisfaisante la fiabilité, la durabilité et l'efficacité du traitement des déchets médicaux au moyen de ses systèmes d'autoclave à vide poussé et à pression élevée.

- ❒ Il n'est PAS nécessaire de procéder à un broyage préalable. Afin de maximiser l'espace de décharge, les déchets médicaux autoclavés peuvent être compactés sans danger pour obtenir une réduction de volume de 60%. On peut obtenir une réduction supplémentaire en installant un broyeur optionnel.
- ❒ Plusieurs capacités possibles, système conçu selon les besoins du client.
- ❒ Aujourd'hui, les décharges mondiales acceptent les déchets médicaux autoclavés. Les déchets correctement passés à l'autoclave à vapeur sont rendus non infectieux et ne posent pas de risque quant à leur rejet sur des sites de décharge contrôlés.
- ❒ Installations prouvées, 15 ans d'expérience industrielle.
- ❒ Traitement efficace, à une réduction log6 ou plus élevée du Bacillus Stearothermophilus.
- ❒ Le système de vide poussé évite aux opérateurs d'être exposés à la vapeur et assure que les déchets sont secs. ☐

ninguna emisión de vapor a la que el trabajador pueda estar expuesto al abrir la puerta del autoclave. Además, el sistema de postvacío y condensación de vapor evita la generación de olores desagradables y mantiene seco los residuos médicos tratados.

Sistema comprobado y confiable de tratamiento de residuos médicos

Bondtech Corporation ha demostrado ser un líder en la industria por su capacidad de facilitar sistemas avanzados de tratamiento de residuos médicos a sus clientes en todo el mundo. Durante sus 15 años de operación en instalaciones comerciales con altos volúmenes de residuos, Bondtech ha demostrado satisfactoriamente que sus sistemas de tratamiento en autoclaves con alto vacío/alta presión son confiables, durables y eficaces para el tratamiento de residuos médicos.

- ❒ NO se requiere trituración antes del tratamiento. Para maximizar el espacio en los vertederos, los residuos médicos tratados en autoclave pueden ser compactados sin peligro para lograr una reducción de volumen del 60%. Se pueden lograr reducciones de volumen aún mayores instalando trituradores opcionales.
- ❒ Hay varias capacidades disponibles, de acuerdo con las necesidades de cada cliente.
- ❒ En la actualidad, los vertederos en todo el mundo aceptan residuos médicos tratados en autoclaves. Los residuos médicos que han sido debidamente sometidos a la acción del vapor en autoclaves se consideran no infecciosos e inofensivos para ser eliminados en vertederos.
- ❒ Instalaciones comprobadas, 15 años de experiencia.
- ❒ Tratamiento efectivo, reducción de bacilos estearotermófilos de log6 o más.
- ❒ Sistema de alto vacío, evita la exposición al vapor de los operadores y que se humedezcan los residuos. ☐

BONDTECH CORPORATION