

# BONDTECH CORPORATION

- **Medical Waste Treatment System**



- *High Volume Commercial Plants*
- *Hospital Installations*

- **Compactors**

- *Solid Waste*
- *Recycling (Cardboard, Paper)*

- **Shredders**

- *Medical Waste Shredders*
- *Confidential Paper (HIPPA)*



# BIO-MEDICAL WASTE TREATMENT



Medical Waste Management to effectively  
reduce *Risk & Liability*



## Inside this issue:

About Us	2
General Performance	3
Treatment Method	3
Technical Background	4
Design, Installations	4
Important Factors	5
Autoclave Systems	6-7
Shredders, Compactors	8-12
Medical Waste Article	13-20

## BONDTECH TREATMENT TECHNOLOGY (BTT):

Cost effective medical  
waste treatment.

- Custom design to specific customer's requirements
- Extensive experience in the Medical Waste industry.
- Complete line of equipment and accessories for the medical waste industry.
- Advance commercial and on-site technology

## ABOUT US

**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 20 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 stainless steel 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



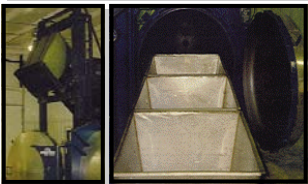
Hospital—Bondtech Autoclave Installation

## 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.
- In-Service training program to improve performance and/or acquaint company personnel to operate equipment properly and efficiently.



## BONDTECH TREATMENT TECHNOLOGY



**“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.

## 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, effectively controlling nuisance odors 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 volume reduction can be realized with the installation of an optional post-treatment shredder and compactor. 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 200 waste autoclaves/ sterilizers for the treatment of infectious medical waste for commercial operations processing more than 4.0 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.



Commercial—Bondtech Autoclave Installation

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 to effectively control nuisance odors. The control system provides automatic sequencing and operation of the system and also records and provides data on every cycle of

## 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

**International:** Argentina, Canada, Korea, Mexico, Peru, Qatar, Thailand and the Philippines, Guam, South Africa, Costa Rica, Puerto Rico, Colombia, China, Uruguay



**BONDTECH IS  
THE LEADER IN  
BIOMEDICAL  
WASTE  
AUTOCLAVES**



1278 HWY 461  
Somerset KY 42503  
Toll Free: 800.414-4231  
Direct: 606.677-2616  
Fax: 606.676-9157  
WWW.BONDTECH.NET



## ADDITIONAL PRODUCTS/PROGRAMS



Bags: Autoclavable,  
Red, Chemo, &  
more, custom made  
to order



Aluminum Carts / Autoclavable Liners



Medical Waste Handling Storage Shipping Containers



399V Touch-tone  
dialing with hi/  
normal volume



Industrial, commercial, domestic use containers

- ♦ Roll-Out waste
- ♦ Recycling containers

Containers available in various sizes, colors & lids

237V - Touch-tone  
with on/off switch,  
hi/normal dialing and  
side volume control

DispozAfone, Deluxe Line of Phones

- Waste Recycling
- Confidential Paper Destruction (HIPPA)

## IMPORTANT FACTORS TO CONSIDER

### FEATURES:

#### No Shredding prior to treatment:

- ♦ No potential aerosolization 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
- ♦ 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
- ♦ Single push button
- ♦ Automated System

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.

To maximize landfill space, autoclaved medical waste can be safely compacted to achieve 70% 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 20 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**



BTT FULLY-AUTOMATED

# AUTOCLAVE SYSTEM





BTT SEMI-AUTOMATED

# AUTOCLAVE SYSTEM



# ELECTRIC & HYDRAULIC SHREDDERS

**Bondtech** offers its model BTT M55 shredders to process materials including:

- Mixed Waste
- Wood
- Plastics
- Medical Waste
- Paper / cardboard
- Document Destruction
- Pharmaceuticals
- Product Destruction
- Organic Waste
- Glass
- Light Electronic Scrap
- Light Gauge Metals
- Fibers / Textiles
- and more ...

## ELECTRIC OR HYDRAULIC

BTT M55 shredders are available in both electric and hydraulic versions to meet your specific processing requirements.

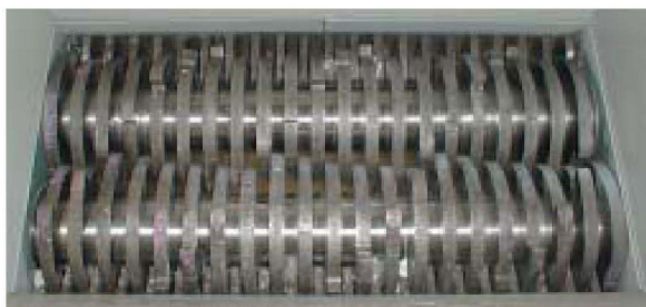
Factors to consider include:

### **Hydraulic drive when processing:**

- Mixed or unsorted materials.
- Batch fed materials.
- Materials containing non-shreddables.
- Materials requiring enhanced particle size or throughput control.

### **Electric drive when processing:**

- Sorted, uniform materials.
- Conveyor fed or metered materials.
- Materials containing limited non-shreddables.



## BTT ADVANTAGES

### **High-torque, low-speed design**

Delivers multipurpose shredding with greater on-line reliability and lower maintenance requirements than other technologies.

### **Direct drive motor**

Provides improved efficiency and reliability. Alternate speed and torque combinations available.

### **Auto reversal feature**

Protects against overfeeding and damage by non-shreddables.

### **Patented ACLS - Advanced Cutter Locking System™**

Eliminates daily requirement to tighten cutter stack while improving shredder performance and cutter life.

### **Shock load protection feature**

Protects shredder and drive components. Electric version offers patented SSP - Severe Shock Protection™ controlled torque coupling. Hydraulic version utilizes multiple relief valves.

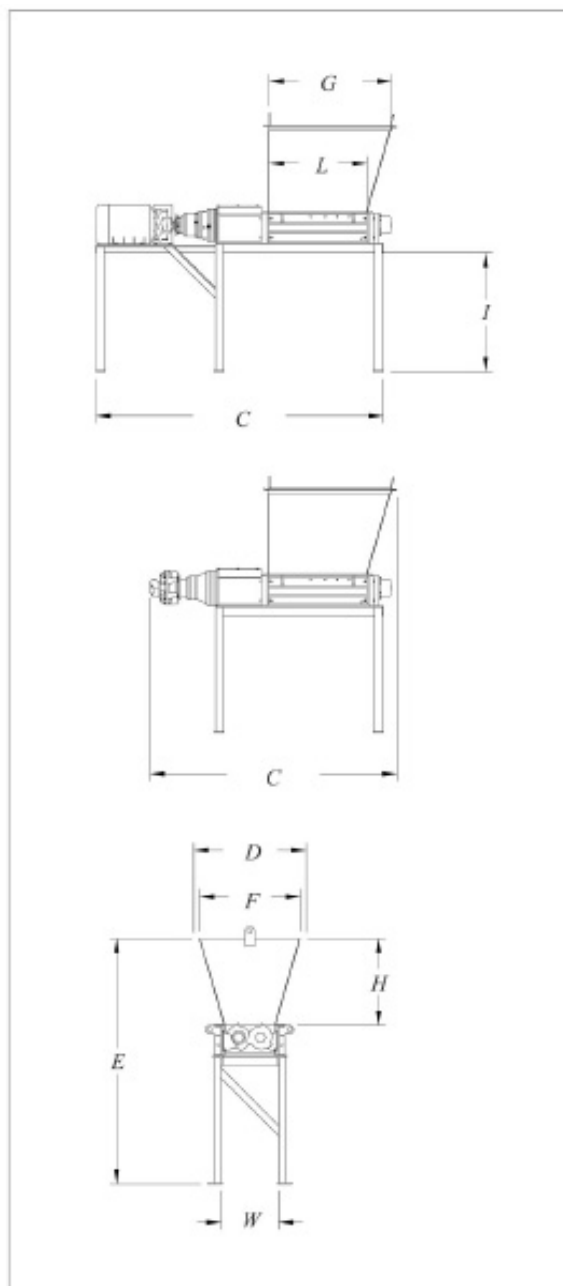
### **Proprietary bearing protection**

Isolates bearings from cutting chamber contamination and protects against bearing failure.

### **Convertible drive**

Versatile design accommodates electric or hydraulic drive. Optional conversion package available.



**Standard Cutting Chamber (W x L)****23" x 40" (580 mm x 1025 mm)****Optional Lengths available****25" (635mm), 30" (762 mm)**

SHREDDER	MODEL BTT M55E	MODEL BTT MDDH
Drive	Electric	Hydraulic
Number of Electric Motors	One	One
HP	40 HP (30 kW)	40 HP (30 kW)
HP Range	30 - 40 HP (23-30 kW)	30 - 40 HP (23-30 kW)
Voltage	460/3/60	460/3/60
Voltage Options	Many - Consult Factory	Many - Consult Factory
Autochop Feature	N/A	Included
Shock Load Protection	Yes (SSP™)	Yes (Multiple Relief)
Cutter Thickness (nominal)	1" (25 mm)	1" (25 mm)
Cutter Diameter	11.4" (290 mm)	11.4" (290 mm)
Cutter Material	4140 HT	4140 HT
Shaft Diameter	4.12" (105 mm)	4.12" (105 mm)
Cutting Chamber (W x L)*	23" x 40" (580 mm x 1025 mm)	23" x 40" (580 mm x 1025 mm)
Machine Length (C)*	122" (3105 mm)	101" (2560 mm)
Machine Width (D)	46" (1180 mm)	46" (1180 mm)
Machine Height (E)	100" (2551 mm)	100" (2551 mm)
Machine Weight	4,500 lbs (2,000 kg)	4,000 lbs (1,800 kg)
Hopper Opening (F x G)*	42" x 51" (1055 mm x 1290 mm)	42" x 51" (1055 mm x 1290 mm)
Hopper Height (H)	36" (915 mm)	36" (915 mm)
Stand Height (I)	48" (1220 mm)	48" (1220 mm)
HPU Configuration	N/A	Closed Loop
HPU Dimensions	N/A	6.5' x 5.5' x 6' (2 m x 1.7 m x 1.8 m)
HPU Weight	N/A	5,500 lbs (2,400 kg)

**Electrical controls including motor starters, PLC, and operator interface are supplied in NEMA 4 enclosures.**

\* Dimensions apply to the BTT M55 with standard 40" (1025mm) cutting chamber length. For 30" (762 mm) length option, subtract 10" (254 mm). For 20" (520 mm) length option subtract 20" (520mm).

Bondtech offers a full range of energy-efficient electric and hydraulic shredders as well as custom units to meet all processing requirements.



Note: Illustrations, specifications and descriptions presented reflect standard product at time of publication and are subject to change without notice. Dimensions are approximate and values have been rounded to the appropriate number of significant figures. Photographs may include optional equipment and accessories. Bondtech offers compactors, balers, granulators, conveyors and classifiers as well as specialized motors, stands, hoppers, and mobile configurations. Consult factory to discuss your processing needs.

*One pass + four shafts =*

# *Uniform particle size*

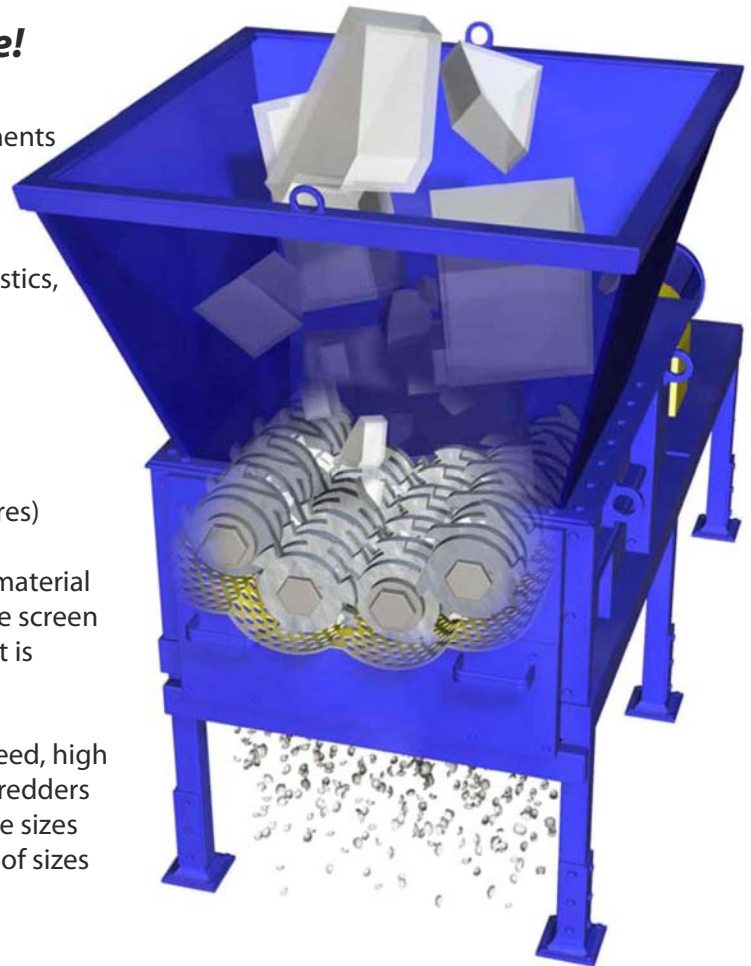
***... the BEST way to achieve small, consistent particle size!***

BIT Quad shredders are designed for processing environments that require uniform particle sizing for:

- **Fuels** - wood, paper, tires, plastics
- **Material Separation & Recovery** - electronics scrap, plastics, aluminum, UBC's, steel drums and more.
- **Composting** - organics, paper fibers
- **Product Destruction** - electronics, plastics, paper, manufacturing
- **Civil Engineering** - alternative daily cover & septic fill (tires)

Four shafts in the Quad shredder process and recirculate material within the unit until it is sized to pass through a removable screen set immediately below the cutters. No external equipment is required to accomplish consistent particle sizing.

The BIT Quad design is based on the same reliable low-speed, high-torque design successfully employed in our twin shaft shredders for over 20 years. Our Quad shredders can produce particle sizes that range from  $\frac{3}{4}$ " - 6" and are manufactured in a variety of sizes and configurations to match your specific needs.



## ***Better performance, less maintenance***

Quad shredders offer you the same, proven features found in BIT Dual-Shear™ technology:

- Heavy-duty design
- Direct drive
- Auto reversal
- Proprietary bearing protection
- Patented SSP™ (Severe Shock load Protection)
- Patented ACLS™ (Advanced Cutter Locking System)
- Roll out screen design







BTT incorporates robust features such as SSP™ (Severe Shock Protection), enabling systems to process tougher materials such as metals.

# Product Overview

Application	BTT Q55	BTT Q70	BTT Q85	BTT Q100	BTT Q140
Aluminum			X	X	X
Carpet					X
Electronics Blank Circuit Boards	X	X	X	X	X
Electronics Loaded Circuit Boards	X	X	X	X	X
Electronics Whole electronic scrap (cpu's, monitors, etc.)			X	X	X
Medical Waste	X	X	X		
Organics	X	X	X	X	X
Paper	X	X	X	X	X
Plastics	X	X	X	X	X
Steel drums			X	X	X
Tires Passenger		X	X	X	X
Tires Truck				X	X
UBC's			X	X	X
Wood		X	X	X	X

Product Overview	BTT Q55	BTT Q70	BTT Q85	BTT Q100	BTT Q140
Infeed Opening (W x L)	36" x 40" (900 mm x 1025 mm)	44" x 52" (1125 mm x 1315 mm)	54" x 52" (1380 mm x 1315 mm)	62" x 63" (1565 mm x 1610 mm)	82" x 98" (2075 mm x 2485 mm)
Optional Length	31" (790 mm)	40" (1025 mm)	63" (1610 mm)	75" (1900 mm)	75" (1900 mm)
Horsepower	50 - 60 (37 - 45 kW)	80 - 100 (60 - 75 kW)	120 - 150 (90 - 113 kW)	250 - 300 (188 - 225 kW)	400 - 500 (300 - 375 kW)
System Weight Range*	7,500 - 13,000 lbs. (3,400 - 5,900 kg)	19,000 - 25,000 lbs. (8,600 - 11,350 kg)	27,000 - 33,000 lbs. (12,250 - 15,000 kg)	50,000 - 60,000 lbs. (22,700 - 27,200 kg)	70,000 - 90,000 lbs. (31,750 - 40,800 kg)
Particle Size Range **	½" - 6" (12 - 150 mm)	¾" - 6" (20 - 150 mm)	1" - 6" (25 - 150 mm)	1 ¼" - 6" (32 - 150 mm)	2" - 6" (50 - 150 mm)
Throughput Range - lbs/hr** (kg/hr)**	500 - 2,000 (225 - 900 kg)	1,000 - 5,000 (450 - 2,250 kg)	1,500 - 8,000 (675 - 3,625 kg)	2,000 - 12,000 (900 - 5,450 kg)	2,500 - 30,000 (1,125 - 13,600 kg)

\* System weight varies. Drive configuration and options may impact total weight. Weight range assumes standard shredder configuration.

\*\* Particle size and throughput may vary depending on your specific material, screen size and feed method. Consult factory for detailed information on the BTT Quad best suited for your application.



Note: Illustrations, specifications and descriptions presented reflect standard product at time of publication and are subject to change without notice. Dimensions are approximate and values have been rounded to the appropriate number of significant figures. Photographs may include optional equipment and accessories. BTT offers compactors, balers, granulators, conveyors and classifiers as well as specialized motors, stands, hoppers, and mobile configurations. Consult factory to discuss your processing needs.



BTT designs screens of various sizes and configurations to fit customer applications.

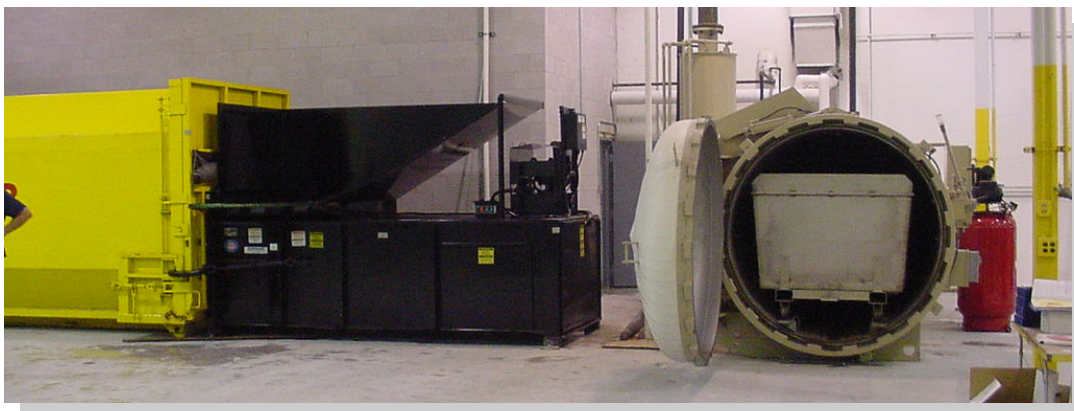
# BONDTECH'S SELF CONTAINED & STATIONARY COMPACTORS



**BTT/SC - Self Contained Compactor**



**BTT/SC - Self Contained Compactor**



**BTT/CX - Stationary Compactor**

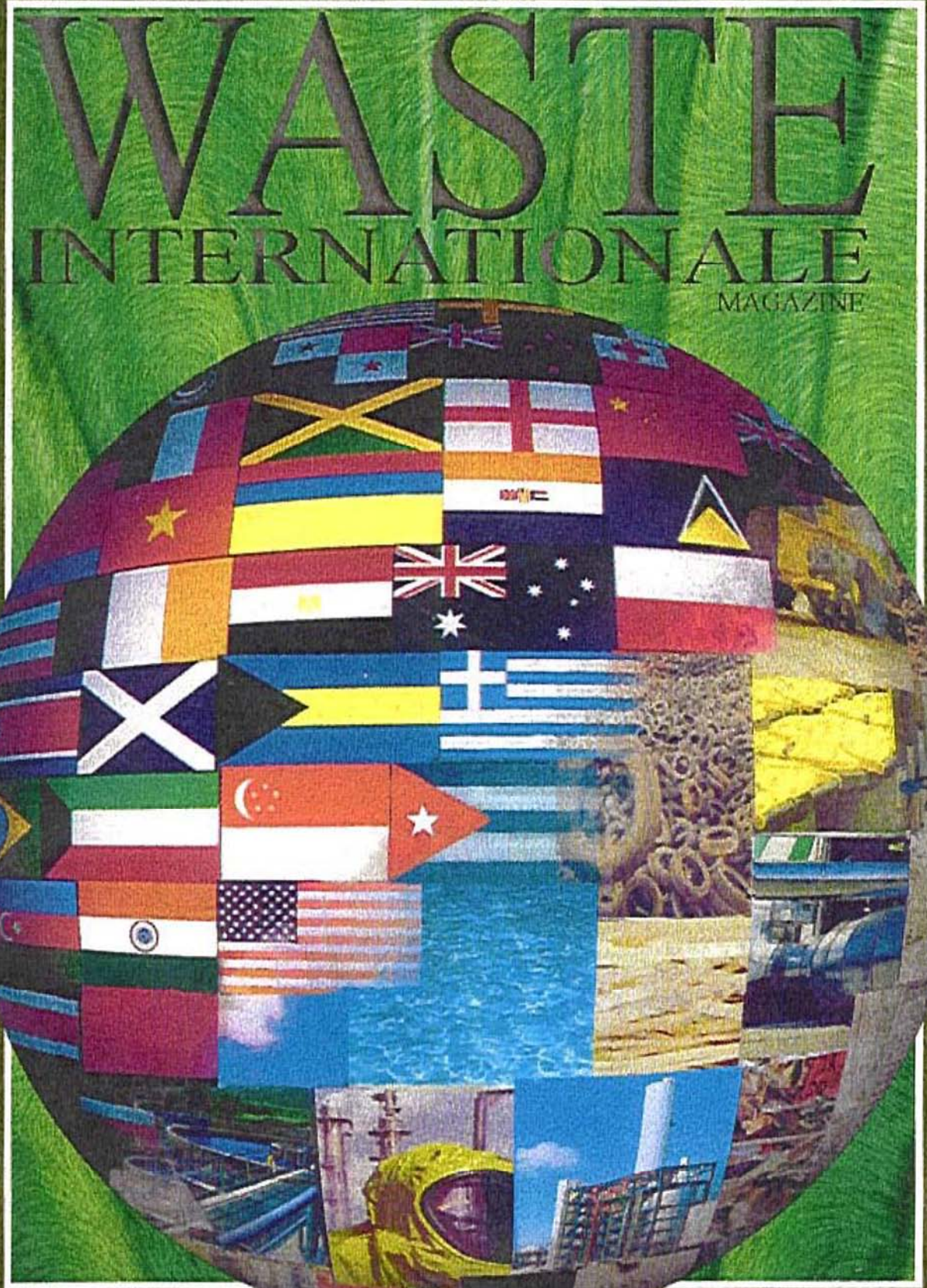


MEDICAL WASTE ARTICLE FEATURING

# BONDTECH CORPORATION

GATEWAY PUBLISHING

VOLUME II



THE TECHNOLOGICAL SUPERHIGHWAY OF THE WORLD'S WASTE INDUSTRY





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



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



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

## M edical 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 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

## L e 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

## E l 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







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. Furthermore, the U.S. Environmental Protection Agency issued recent regulations establishing tougher air emission standards which 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

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 déchets médicaux qui restent aux tats-Unis d'ici l'an 2000.

#### **Bondtech Corporation: Une expérience qui compte**

Depuis les 15 dernières années, les

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 las 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 residuos médicos más popular. Desde 1990, más del 90% de los permisos para instalaciones de tratamiento de





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 commercial 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. 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,

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



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.

### Technología avanzada

Bondtech ofrece los más avanzados sistemas de





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 autoclave 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 degrees 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

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

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 43.53 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 Celcio (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





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 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.

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 d'emarrage 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 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)



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.





- 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.
- 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.

**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 ultrasophistiqués et écologiquement rationnels à ses clients mondiaux. Au cours de ses 15 années d'opération dans des unes 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 log<sub>6</sub>  
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.

