



SOLUTIONS OVERVIEW

ECOSTERYL : MEDICAL WASTE DISPOSAL SOLUTIONS

Executive summary

AMB s.a. is a manufacturer and specialist of the medical waste treatment industry. We work closely with our customers to provide market-leading alternative medical waste treatment equipment – delivering quality; reliability; compliance and cost-efficiencies.

VALUE we provide competitive prices with customer-specific requirements, with further cost reduction and financing mechanisms in place where possible.

COMPLIANCE we offer products fully compliant with state and federal regulations.

SUPPORT our sales, professional drafting and engineering team works closely with all departments throughout the business – providing comprehensive levels of customer service, commercial, technical and administrative support.

CAPABILITY we are in business since 1947. Over the past 10 years, we have developed equipment for the medical waste management industry.

INNOVATION we provide a variety of innovative feature and services, including efficacy and maintenance monitoring equipment for our devices, tele-maintenance service, state-of-the-art control panel and much more.

ENVIRONMENT our range of environmental initiatives, including our projects for repurposing and recycling treated medical waste, minimises waste going to landfill and our carbon footprint.

“We have certified the Ecosteryl process almost everywhere in Europe, North America & South America, Russia, Asia ...

We are now leader in our industry in many countries over all five continents. I think we can attribute this success primarily to the advanced technologies implemented in our systems.”

Philippe Dufrasne, CEO

WHO WE ARE

AMB has over 10 years of experience in the commercial treatment of medical waste without burning. The company designed four patented systems which enable the treatment of medical waste without any polluted discharge, through a continuous microwave technology.

WHAT WE DO

AMB Ecosteryl designs and manufactures equipment that provide a safe and environmentally friendly solution to medium and large hospitals as well as service providers for the treatment of biomedical waste. Ecosteryl products have already processed hundreds of millions of kg of biological waste since its first installation in France.

ABOUT US

AMB is a private family group which was established in 1947 to design and produce special machinery for the extraction industries. Following the decline of the mining companies and the rise of the environmental sector, AMB moved into the development of new equipment and machinery to be used for recycling, recovery and processing of medical waste. By doing this, AMB contributes to maintaining a safe, healthy environment and promoting sustainable development.

Our technology was designed to handle a large variety of regulated medical waste, including hospital and laboratory waste, solid and liquid medical waste, human and animal pathological waste, sharp containers and prickly hospital waste, cultures and stocks, as well as any other waste listed in state and federal regulations as medical waste.

ECOSTERYL machines are well known worldwide for superior performance in safety, speed, reliability and flexibility. Leaders in France and several European countries, we have for clients some of the biggest environmental companies worldwide specialized in waste management and water business. We provide an alternative medical waste treatment technology in many countries around the world.



HEAD OFFICE

AMB s.a. is a Belgium based company located in Mons near the French border.

The business is centered on a design office, on a sales & administration department, R & D department and on three production workshops

BRANCH OFFICE

Our company has two branch offices, one for the North and South American markets, and the other the Asian markets.

Our network of agents and distributors helps to promote our products worldwide.

PROCESS DESCRIPTION

TABLE OF CONTENT

1. Automatic weighing & loading
2. Shredding
3. Continuous microwaves
4. Holding, treatment & final output

1. Automatic weighing & loading

*Optional on Ecosteryl 75

A container (240 to 770 liters) is installed on the handling system. The latter lifts up the container after weighing and dumps it in the loading hopper. All these operations occur automatically.

Via a hydraulic cylinder, the loading hopper opens automatically when a container arrives. The loading hopper has an air treatment vessel (optional on some models), which creates a vacuum when it is opened. This one prevents the dust from flying when the hopper is opened. The airflow is washed, disinfected, deodorized and filtrated over activated charcoal. The airflow is rejected outside only after this treatment. The treated airflow is of about 250 m³/h. The hopper also includes level indicators (hopper full and hopper empty).



2. Shredding

When the lid of the loading hopper is closed, the content of the loading hopper is gradually pushed by a hydraulic ram (optional) and the shredder is activated. A screen is placed under the latter to get a homogenous size under 20 mm diameter. The shredder is of the four-shaft type including an automatic anti-blocking device (current controlled) reversing of the direction of the operation of the two motors in case of blockage (but also cyclical) in order to unblock the unit and return it to the normal operation.

The homogenous waste falls to the under-mill hopper before passing to the processing screw, which brings it to the second phase of the process. This under-mill hopper also includes level indicators.



PROCESS DESCRIPTION

3. Continuous microwaves

The processing screw is of spiral design. The processing screw brings the products into the microwave oven where it is heated up to a temperature of 100°C. The time needed for transferring it into the processing screw is of about 3 min. The microwave-heating tunnel is composed of 2 boxes beam of 12 kW (one box only for Ecosteryl 125).



- Cutting edge technology
- Intuitive monitoring and support
- Any type of medical waste
- Internationally Recognized Environmentally Friendly
- Process approved around the World

Each box beam includes 6 microwave generators with magnetrons of 2 kW (serial 250). The “Box Beam” patent covers the use of microwaves in stereo mode with controlled field polarization in a specially adapted recess. This makes it so possible to heat the products “to the core” with a rapid rise in temperature. The system provides for a temperature measurement at the Microwave outlet to check the treatment quality. A control system adjusts the operation of the equipment in order to maintain the desired temperature at the end of the zone.

4. Holding, treatment & final output

The waste enters the last hopper where its temperature is maintained.

The heat-insulated hopper is kept at its temperature level thanks to external heating resistors. The waste stays in this hopper for one hour so that the decontamination can be achieved.

At the end of the process, the waste leaves the equipment through an outlet screw (of the spiral type) in a container.

A programmable controller with a touch-screen allows the automatic operation, real-time monitoring, control and storage of the equipment operating parameters.



OUR PRODUCT LINE

AMB Ecosteryl Serial 75 is the cutting edge technology in hospital waste disposal nowadays. It has a 20 kW four-shaft shredder designed for the processing of sharps and prickly, syringes, needles and waste drums that hold up to 60L. It comes with a built-in motorized wheelie bin lifting and dumping system.

AMB ECOSTERYL 75



DESIGNED FOR
MEDIUM HOSPITALS

PRODUCT SPECIFICATIONS

- Capacity : up to 100 kg/hr (220 lbs/hr)
- Volume capacity : approx. 1200 L
- Dimensions (L x l x h) : 4.5m x 4.5m x 3m
- Weight : 4 tons
- Required floor space : 5 x 5.5m
- Minimum ceiling height : 3.5m
- Electric power consumption : 20-30 kWh
- Electrical connection power : 80 Amp – starter motor

PRODUCT DESCRIPTION

- Microwaves screw
- Heat-insulated waste screw
- Patented four-shaft shredder
- Patented microwaves generator
- Microwaves power: 8 KW
- Shredder power: 20 KW in 4 rotors
- Microwaves frequency: 2.450 MHZ
- Fail-safe technology with alarms
- Challenge (Quality Control) Protocol using SCBIs and incubator
- Weighing system (optional)
- Container lifting and dumping system (optional)

AMB ECOSTERYL 75 PLUS



DESIGNED FOR
MEDIUM HOSPITALS

PRODUCT SPECIFICATIONS

- Capacity : up to 100 kg/hr (220 lbs/hr)
- Volume capacity : approx. 1200 L
- Dimensions (L x W x H): 4.5m x 5.5m x 5m
- Weight : 4.5 tons
- Required floor space : 6 x 6.5m
- Minimum ceiling height : 5.2m
- Electric power consumption : 22-32 kWh
- Electrical connection power : 80 Amp – starter motor

PRODUCT DESCRIPTION

- Microwaves screw
- Heat-insulated waste screw
- Patented four-shaft shredder
- Patented microwaves generator
- Microwaves power: 8 KW
- Shredder power: 20 KW in 4 rotors
- Microwaves frequency: 2.450 MHZ
- Fail-safe technology with alarms
- Challenge (Quality Control) Protocol using SCBIs and incubator
- Weighing system (optional)
- Built-in container lifting and dumping system

OUR PRODUCT LINE

Ecosteryl Serial 125 and 250 are ideal for medical waste and hazardous waste disposal service providers. In the automatic mode, a one man operation will achieve up to 600 kg/hr (1320 lbs/hr) or approximately 8000 L of waste.

AMB ECOSTERYL 125



DESIGNED FOR LARGE HOSPITALS OR SERVICE PROVIDER

PRODUCT SPECIFICATIONS

- Capacity : up to 175 kg/hr (385 lbs/hr)
- Volume capacity : approx. 2100 L
- Dimensions (L x W x H): 10m x 3.5m x 5.2m
- Weight : 10 tons
- Required floor space : 12 x 6m
- Minimum ceiling height : 6m
- Electric power consumption : 45-60 kWh
- Electrical connection power : 160 Amp – starter motor

PRODUCT DESCRIPTION

- Microwaves screw
- Holding hopper
- Patented four-shaft shredder
- Patented microwaves generator
- Microwaves power: 12 KW
- Shredder power: 37 KW in 4 rotors
- Microwaves frequency: 2.450 MHZ
- Fail-safe technology with alarms
- Challenge (Quality Control) Protocol using SCBIs and incubator
- Treatment parameters are continuously monitored and maintained during the process
- No intermediate handling of medical waste during the process

AMB ECOSTERYL 250



DESIGNED FOR SERVICE PROVIDER

PRODUCT SPECIFICATIONS

- Capacity : up to 300 kg/hr (660 lbs/hr)
- Volume capacity : approx. 3600 L
- Dimensions (L x W x H): 12m x 3.5m x 5.2m
- Weight : 12 tons
- Required floor space : 15 x 6m
- Minimum ceiling height : 6m
- Electric power consumption : 60-80 kWh
- Electrical connection power : 240 Amp – starter motor

PRODUCT DESCRIPTION

- Microwaves screw
- Holding hopper
- Patented four-shaft shredder
- Patented microwaves generator
- Microwaves power: 24 KW
- Shredder power: 37 KW in 4 rotors
- Microwaves frequency: 2.450 MHZ
- Fail-safe technology with alarms
- Challenge (Quality Control) Protocol using SCBIs and incubator
- Treatment parameters are continuously monitored and maintained during the process
- No intermediate handling of medical waste during the process

OUR ADVANTAGES

EFFICIENT

Repeatability – Highly accurate operations

Simplicity – Ease of operation, training and maintenance

Reduces the volume to landfill by up to 80% and weight reduction up to 10%

Continuous process with high productivity

ECONOMICAL

Automatic loading and system monitoring reduce costs

Competitive investment, low operational costs and quick return on investment

Reduce consumable consumption by up to 75%

Flexible – operator can operate two systems simultaneously

TECHNOLOGICAL

Powerful shredding technology: up to 37 kW, low speed, four-shaft, anti-blocking system

Output by-product is landfill ready, inert, unrecognisable and recyclable

Improve efficiency and safety with our remote industrial automation equipment.

Quickly disassembled, may be easily relocated, installation in 24-48h

SAFE ENVIRONMENT

Safety shutdown with any unexpected operation

Safe, secure and reliable process by monitoring

Real-time monitoring and efficiency control

Improved safety – allows good occupational safety and health practices

ENVIRONMENTAL

No chemical emission, fumes, gas or vapor. No water used or rejected

Cutting edge technology with virtually no environmental impact

Low noise, odor and other inconvenience

Bacteria reduced by 6 log 10 => 99.9999%

CASE STUDIES - SERVICE PROVIDER



GLOBAL SOLUTIONS FOR SERVICE PROVIDER

We offered a turn-key solution to a nation-wide medical waste company that provides medical waste management services. They ensure medical waste removal is in accordance with all state and federal guidelines, and do so at an affordable price.

The company wanted to reduce its environmental footprint and make savings with lower operational costs. We replaced its autoclaves in two phases with three Ecosteryl units. The company has been able to reduce its operating cost by 29% after one year and increase its profits after three years.

PROJECT DETAILS

Number of clients	434
Tonnage collected and treated per annum	3200 TONS
Number of trucks	54
Previous technology used in the plant	3 x Advanced autoclaves with shredder
Actual technology used in the plant	2 x AMB-Ecosteryl 250
Productivity gained in %	44%
Treatment cost per ton (including amortization)	\$113 per ton
Savings per year	\$298 500

Benefits

- Lower operating costs
- Improvements with compliance and monitoring
- Reduced transportation costs
- Higher profits and better return on investment

CASE STUDIES - HOSPITAL



ON-SITE INSTALLATION IN HOSPITAL

HEALTHCARE FACILITIES usually require accurate monitoring records of their waste. Hospitals and clinics also look to reduce their regulated medical waste output with better segregation and tracking practices.

To improve your on site practices for infection control, AMB proposes a turnkey solution for hospitals administration. With the Ecosteryl on-site technology, it is finally possible to manage your medical waste in the confines of the hospital and save hundreds of thousands of dollars.

PROJECT DETAILS

Number of beds	450 BEDS
Number of patients per year	25 526
Quantity of medical waste generated per year	310 TONS
Previous technology used in the plant	None (service provider)
Actual technology used in the plant	1x AMB Ecosteryl 75 Plus
Return on investment (in years)	6 years
Treatment cost per ton (including amortization)	\$319 per ton
Savings per year	\$66 500

Benefits

- Reduced transportation costs
- Reduction of waste packaging (unnecessary external transfers)
- Lower overall cost
- More accurate infection control and monitoring

SPECIFICATIONS

AMB-SERIAL 75-ECOSTERYL	AMB-SERIAL 125-ECOSTERYL	AMB-SERIAL 250-ECOSTERYL
up to 100 kg/hr	up to 175 kg/hr	up to 300 kg/hr
DIMENSIONS (L X W X H): 4.5M X 4.5M X 3M 4.5 X 5.5M X 5M (SERIAL 75+)	DIMENSIONS (L X W X H): 10M X 3.5M X 5.2M	DIMENSIONS (L X W X H) : 12M X 3.5M X 5.2M
3-PHASE 380V/440V/480V	3-PHASE 380V/440V/480V	3-PHASE 380V/440V/480V
REQUIRED FLOOR SPACE: 28M2 39 M2 (SERIAL 75+)	REQUIRED FLOOR SPACE: 72M2	REQUIRED FLOOR SPACE: 90M2
VOLUME CAPACITY : 1200 L	VOLUME CAPACITY : 2100 L	VOLUME CAPACITY : 3600 L
4.5 TONS	10 TONS	12 TONS
ELECTRICITY : 20-30 KWH / 22-32 KWH (SERIAL 75+)	ELECTRICITY : 45-60 KWH	ELECTRICITY : 60-80 KWH
PRE-SHREDDING WITH CORE-HEATING MICROWAVE IRRADIATION TECHNOLOGY	PRE-SHREDDING WITH CORE-HEATING MICROWAVE IRRADIATION TECHNOLOGY	PRE-SHREDDING WITH CORE-HEATING MICROWAVE IRRADIATION TECHNOLOGY
SYSTEM IS FULLY AUTOMATED AND CONTROLLED BY PLC WITH REMOTE MONITORING	SYSTEM IS FULLY AUTOMATED AND CONTROLLED BY PLC WITH REMOTE MONITORING	SYSTEM IS FULLY AUTOMATED AND CONTROLLED BY PLC WITH REMOTE MONITORING
FOUR-SHAFT SHREDDER WITH SCREEN (20 KW)	FOUR-SHAFT SHREDDER WITH SCREEN (37 KW)	FOUR-SHAFT SHREDDER WITH SCREEN (37 KW)

OUR FEATURES

FEATURES

Monitoring computer

Keeps comprehensive records of all waste movements. Ecosteryl units can be monitored via an internet or phone connection relaying up-to-date information at each stage.

Environmentally friendly

Shredded waste is reduced to as little as 1/5 its original volume, without neither emitting harmful substances, nor rejecting wastewater nor using water. Ecosteryl is a chemical-free process that uses only electricity.

Installation in 24-48 hours

The equipment can be installed in less than two days and dissembled easily if a relocation of the equipment is required.

Operator Safety

Equipped with safety systems and automatic safety mechanisms. Automatic lift/load system eliminates double and triple waste handling. On board digital controls (automated PLC) / self diagnostics to eliminate worker exposure.

APPLICATION TYPES

Ecosteryl systems are designed to treat regulated medical waste that has been generated by healthcare facilities.

The cutting edge technology uses a patented microwaves disinfection system with a powerful four-shaft shredder designed specifically for hospital waste.

The process was designed to handle a large variety of regulated medical waste, including hospital and laboratory waste, solid and liquid medical waste, human and animal pathological waste, sharps and prickly hospital waste with their containers, cultures and stocks, as well as any other waste listed in state and federal regulations as medical waste.



APPROVALS / CERTIFICATIONS

INTERNATIONAL CERTIFICATIONS VALIDITY

European Directive (CE) Quality Assurance System



ISO 9001:2008 - Quality Management Systems



APPROVALS VALIDITY

AMB Ecosteryl systems are approved for use in the treatment of regulated medical waste in several US states including Florida, New York and California.



Ecosteryl is registered and approved by the Russian Federal Service of Health Care and Social development control.



The AMB process has been tested by the Pasteur Institute and approved under the supervision of the Ministry of Health and the Ministry of the Environment by the French Higher Council of Public Health.



EFFICIENCY TESTING VALIDITY

Pasteur Institute (ISO/IEC 17025 International Standard Accredited Laboratory - Accreditation No. 1-2215)



Learn more at
www.ecosteryl.com



ecosteryl



ECOSTERYL : MEDICAL WASTE DISPOSAL SOLUTIONS
BY AMB

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