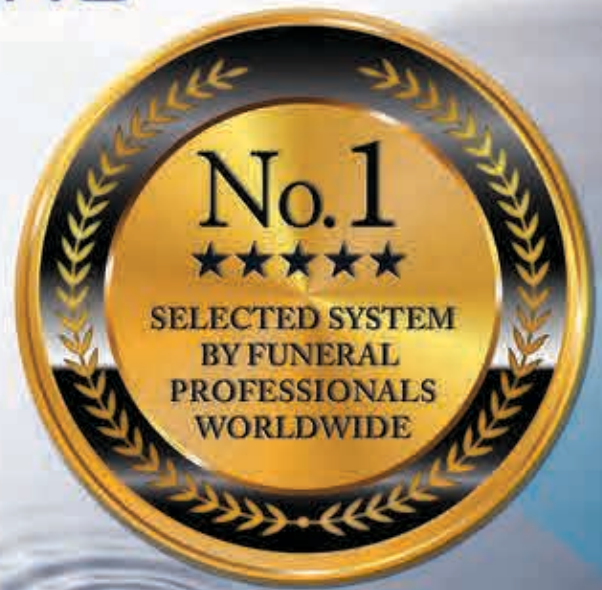




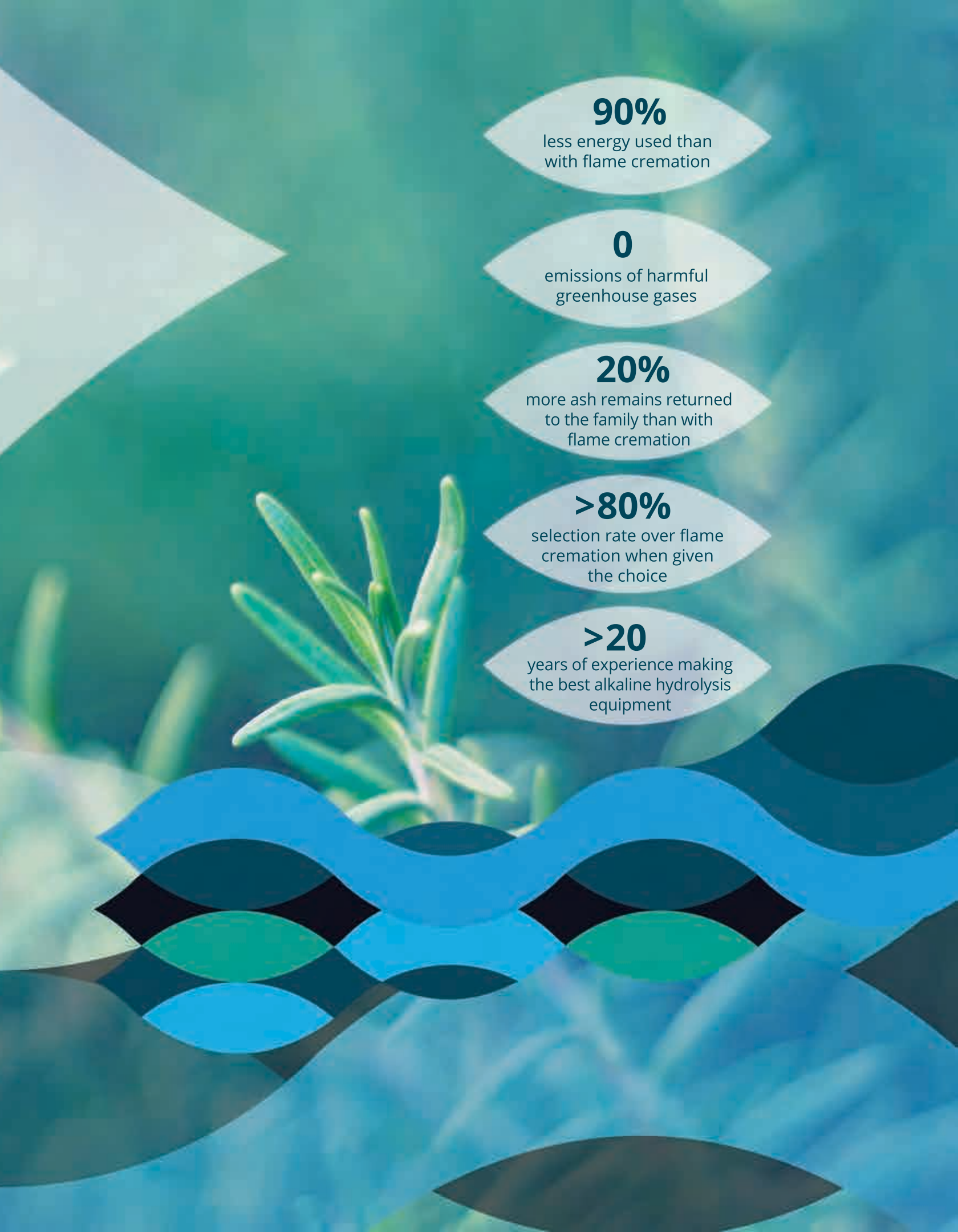
BIO-RESPONSE SOLUTIONS



Alkaline Hydrolysis
HUMAN SYSTEMS



a safe &
eco-friendly
alternative
to flame cremation
and burial



90%

less energy used than
with flame cremation

0

emissions of harmful
greenhouse gases

20%

more ash remains returned
to the family than with
flame cremation

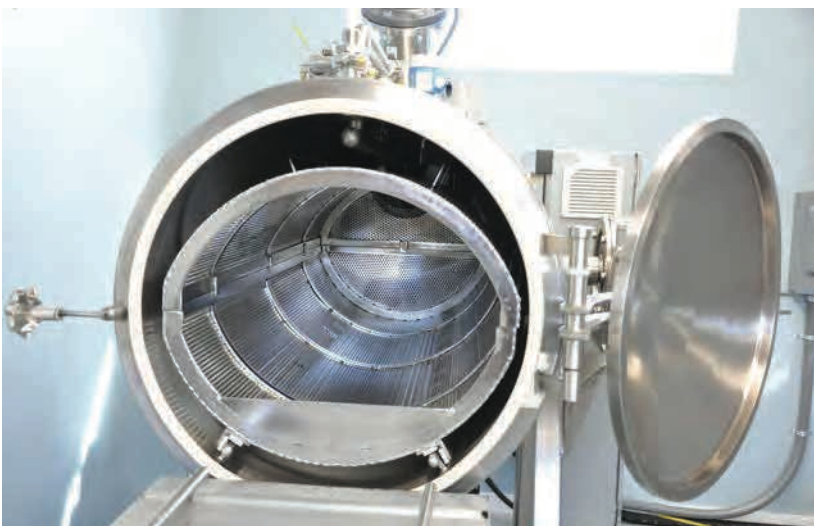
>80%

selection rate over flame
cremation when given
the choice

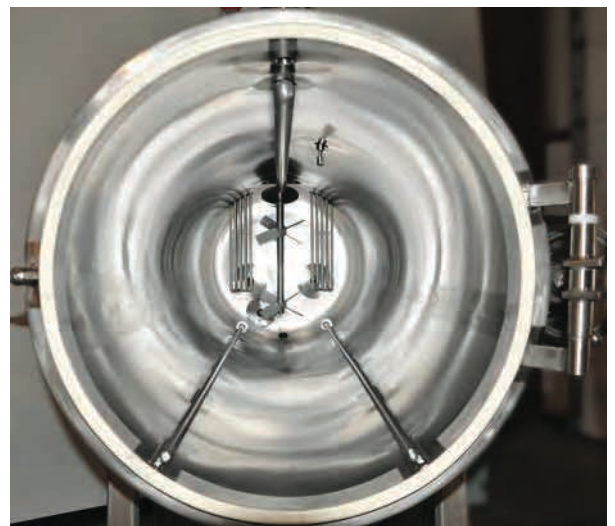
>20

years of experience making
the best alkaline hydrolysis
equipment

Alkaline Hydrolysis Systems for Human Disposition



System with the basket container inside



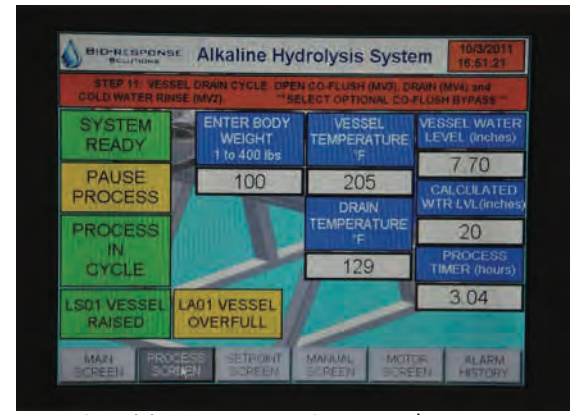
Inside of the system
without the basket container



Very simple installation



Large color 10-inch touch-screen HMI



Intuitive operator & control screens

4 benefits of TIP Technology

1. More environmentally friendly → *Uses less water, less alkali, and less energy*
2. Design prevents maintenance → *Door and seals are above the liquid level*
3. Remains are fully enclosed → *Rest assured the final remains are secure*
4. Simplified remains collection → *Collect all final remains in a few minutes*



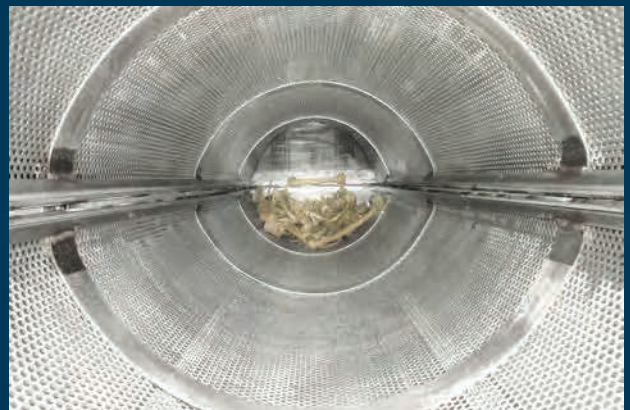
An open system in the horizontal loading position



One system in the angled operating position



Stainless steel basket container lowered on a lift table with the lid removed for transfer



Final remains inside of the basket container following a rinse cycle; remains are concentrated in the bottom end

LT-500

Low TEMPERATURE



Capacity	0-500 lb (0-227 kg)
Operating Temperature	204-208 °F (95.6-97.8 °C)
Operating Pressure	Atmospheric
Processes Per Day	1.5 processes per day 14 - 18 hrs per process

- Simple and fast hand-tightened knobs
- Lowest equipment cost
- Lowest energy consumption
- Lowest cost per process for Aquamation
- Operates on standard utilities
- Optimal for businesses with 200 or fewer cremation cases per year

Example Installations: Low Temperature



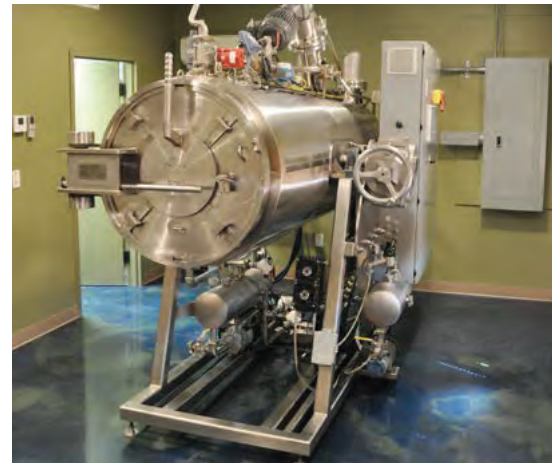
HIGH TEMPERATURE

HT-500



Capacity	0-500 lb (0-227 kg)
Operating Temperature	204-302 °F (95.6-150 °C)
Operating Pressure	Less than 65 psi
Processes Per Day	3 - 4 processes per day 6 - 8 hrs per process
<ul style="list-style-type: none">• State-of-the-art single latch door• Accelerated process• ASME-certified vessel and door• Operates on standard utilities• Low equipment cost• Bio-Response High Temp systems can be operated at user-selected lower temperature	



Example Installations: High Temperature



Human Alkaline Hydrolysis Systems

Features and Specs: Alkaline Hydrolysis Systems for Human Disposition

Model	Low Temperature	High Temperature	
	LT-500	HT-500	HT-500 INSTITUTIONAL
Operating Temperature	<ul style="list-style-type: none"> 204-208° F (95.6-97.8° C) User-Selected 	<ul style="list-style-type: none"> 204-302° F (95.6-150° C) User-Selected 	<ul style="list-style-type: none"> 204-302° F (95.6-150° C) User-Selected *Requires Institutional Utilities
Operating Pressure	<ul style="list-style-type: none"> Atmospheric pressure 	<ul style="list-style-type: none"> Less than 65 psi (dependent upon selected operating temperature) System features an ASME-certified, 100psi-rated vessel and safeties 	
Turnaround Time <small>Includes heat-up, process, cool-down, discharge, and rinse)</small>	<ul style="list-style-type: none"> 1.5 processes per day (3 every 2 days) 14 - 18 hours per process 	<ul style="list-style-type: none"> 3 - 4 processes per day 6 - 8 hours per process 	<ul style="list-style-type: none"> 4 - 5 processes per day 5 - 6 hours per process
Door Type	<ul style="list-style-type: none"> 8-latch door with simple and fast hand-tightened knobs 	<ul style="list-style-type: none"> Single-latch ASME -certified door 	<ul style="list-style-type: none"> Single-latch ASME -certified door
Rapid Heat-Up and Cool-Down	<ul style="list-style-type: none"> Optional; please inquire 	<ul style="list-style-type: none"> System includes dry cooler system to cool rapidly and conserve water Rapid heat-up optional; please inquire 	<ul style="list-style-type: none"> This system requires industrial utilities that are available at institutions (such as medical schools). These utilities may include high voltage available chilled water or steam supply Custom design with additional mechanisms and appliances for rapid heat-up and cool-down; multiple options available
Notable Benefits	<ul style="list-style-type: none"> Operates at atmospheric pressure Lowest energy consumption Lowest cost per process for alkaline hydrolysis systems Lowest maintenance Lowest equipment cost 	<ul style="list-style-type: none"> Process is accelerated Allows for more processes per day User can select the operating temperature based on the day's demand (a reduced temperature uses less energy, resulting in lower operating cost) 	<ul style="list-style-type: none"> Includes all benefits of our standard high temperature machine (HT-500) Extremely rapid heat up and cool-down measures allow for even more rapid turnaround times.
Unit Configuration	<ul style="list-style-type: none"> Single Body System 		
Capacity	<ul style="list-style-type: none"> System size (girth-limited): 0-500lb (0-227kg) Larger custom sizes available. Please speak to us to determine which system best fits your needs 		
Discharge Control	<ul style="list-style-type: none"> Automatically controlled (standard) Discharges below regulation temperature and pH 		

Control System	<ul style="list-style-type: none"> • Large 10-inch Allen Bradley PanelView Plus 7 color touch-screen HMI • Allen Bradley Compact Logix PLC control system • Intuitive operator & control screens • Manual override screen for testing and troubleshooting • UPS (Uninterruptible Power Supply; safety power backup for power outage) • UL-listed NEMA 12 control Panel • Units available in English or Metric measures; multiple languages available • Ethernet or phone modem diagnostics to allow factory assistance to anywhere in the world (requires Ethernet connection) • Optional Operator Remote Monitoring to monitor process screen from an office computer, home computer, or smart phone
Required Utilities	<ul style="list-style-type: none"> • Fresh water supply (cold and hot water recommended) • Electricity: Systems are built custom to customer's specifications Typical configurations: 208/220 Single-phase, or 208-600V 3-phase, 50 or 60 Hz • Vent line (small 1" 1.5" line) • Drain/sewer connection or alternative solution • Internet connection
Equipment Options Available	<ul style="list-style-type: none"> • Option: Load cells (system automatically weighs body and liquid alkali if applicable) • Option: Liquid chemical injection • Option: Energy-efficient rapid cooling device • Option: Specialized filter system • Option: Custom-sized machine (for example, 1000 lb capacity single-body LT unit) • Option: Any customization is possible; we are a full engineering firm
Convenience Options Available	<ul style="list-style-type: none"> • Option: Dissolvable opaque heavy-duty body bags (available with zipper or adhesive closure) • Option: Cycle report printer • Option: Operator Remote Monitoring to monitor process from a select external device (i.e. computer or smart phone); includes capability for machine to email and text message alerts to the equipment owner and/or operator • Option: Integrated wireless Ethernet modem where hardwired internet connection is not possible (for factory diagnostics and/or Operator Remote Monitoring)
Recommended Ancillary Equipment	<ul style="list-style-type: none"> • Lift table (with or without a scale) • Cremated remains processor • Scale (if not built in to machine or lift table; to weigh deceased) • Convection drying oven • Hot water heater (highly recommended; to provide the equipment with hot fill and hot rinses) • Bio-Response can supply or assist with sourcing ancillary equipment for simplified purchase
Notable Benefits <div data-bbox="75 1402 340 1587">  <p>PATENTS PENDING PATENTS ISSUED</p>  <p>BIO-RESPONSE SOLUTIONS</p> </div>	<ul style="list-style-type: none"> • Patented Technology • Simple, fast and easy installations • No expensive steam generator/boiler required • Operates with standard utilities available to most facilities, funeral homes, and commercial locations • No additional storage tanks required • No submerged pump seals • TIP Technology offers numerous advantages • Low equipment cost, simple operation, and reliability • Lower operating cost than flame/fire based cremation • Does not require EPA Air-Quality permitting, regulation, or tracking • Does not require retort/incinerator zoning considerations for emissions • Cutting edge remote diagnostics system saves you money • Experienced team with 24/7 support • Our customers LOVE their systems! • <i>Systems in California and Europe require CA and EU specific models. Please inquire.</i>

Why choose *Aquamation?*

Families *have expressed:*

- They are grateful to have a choice.
- They prefer a process that does not use fire or flame.
- They prefer getting 20% more of their loved ones' ashes returned to the family.
- They believe this to be a more gentle option than flame-based cremation.
- They value the decreased environmental impact of the process — no emissions, less energy, and smaller carbon footprint.

Funeral Professionals *list the benefits as:*

- Ability to better serve their families by offering another choice.
- Exceptionally high rate of selection by families
- Push the button and leave — no need to attend the process
- Small footprint
- Simple installation — use of standard utilities with no major building modifications
- Very low maintenance — no equivalent to rebricking
- Machines last for many years — systems have been in operation for over 20 years without vessel wear
- No EPA Air Quality Permits required
- Less zoning restrictions — able to place this equipment where flame cremation systems are not allowed due to emissions and/or zoning
- For smaller operations, it is economical to perform a single process (no costly initial shared heat-up expense like that with a flame-cremation system)
- Decreased environmental impact
- A competitive edge in a competitive industry
- No fire — for many reasons (decreased risk, decreased labor, decreased costs)
- Lower operational cost than flame cremation

Why choose our equipment?

- Number 1 selected system worldwide
- Variety of systems and features available — we understand that different businesses need very different solutions
- Systems are smartly designed — simple in form and function, and built with only the best components
- No costly steam generator required
- No added storage tanks
- No submerged pumps or seals
- Designed to fit standard utilities
- Smallest system footprints on the market
- Automatic cooling and discharge controls
- Superior water circulation and simplified remains collection
- Patent pending technologies are game-changing — our machines use the least amount of resources, and they are CLEAN after the process
- We have over 25 years of direct experience with Alkaline Hydrolysis technology
- All products are proudly made in the U.S.A.



BIO-RESPONSE
SOLUTIONS

Family Owned & Operated

**Constant
Innovation**

**Energy
Conscious**

**Cutting-Edge
Technology**

**Over 20 years of
direct experience making
alkaline hydrolysis
equipment**

**Forward
Thinking**



**BIO-RESPONSE
SOLUTIONS**





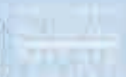
Tour our facility →



← Visit our facebook page



BIO-RESPONSE
SOLUTIONS



Frequently Asked Questions

What is Aquamation?

Aquamation is a method of final disposition that is available for both our human and pet loved ones. The scientific name for this water-based process is alkaline hydrolysis. It is the same process that occurs as part of nature's course when a body is laid to rest in the soil. A combination of gentle water flow, temperature, and alkalinity are used to accelerate the breakdown of organic materials.

What actually happens with Aquamation?

The Aquamation process is performed after any viewing or visitation services the family wishes to have. When it's time for the process, the individual body is respectfully placed in a stainless steel vessel. Alkali is added to the process based on individual characteristics (weight, sex, embalming status), and the vessel fills with water. The solution of 95% water and 5% alkali is heated to 200-300°F, and gently circulated for the entire length of the process.

At the end of the process, all material is broken down to the smallest building blocks; there is no DNA or RNA remaining. The sterile process water is released for recycling (our bodies are approximately 65% water to begin with), and the vessel performs a fresh water rinse for the equipment and remains. When the operator opens the door, only the inorganic bone minerals remain. These minerals are processed into powder and returned to the family in an urn. This final processing step is the same process that is followed with flame cremation. Many families hold a celebration of life or gathering when the loved one's remains are returned to the family's care.

What is the impact of water usage?

Very low. The Aquamation process uses less water than a single household uses in one day (source: water.usgs.gov). This includes all of the water used for the process, along with the clean water rinsing of the final remains and vessel.

Are the ashes different than those from flame cremation?

The ashes from a flame cremation are primarily the mineral remains from the bone, along with some ash from the cremation box or casket, clothing, and anything else that may have been placed in the process with the body. The ashes from Aquamation are only the mineral remains from the bone, as there are no other materials in the ash.

The color of ash from a flame process is typically gray in color, from the carbon discoloration from burning. The color of ash from Aquamation is anywhere from white to a tan color. With both processes, there can be slight variations in color from individual to individual.

The consistency of the ash is also different.

The ash from flame cremation can be described as "chippy" bone fragments. The ash from Aquamation is a homogenous (consistent) powder. With Aquamation, there is 20-30% more ash remains returned to the family.

... Read more on our website: www.aquamationinfo.com/faq

Contact Us

*Do the families
that you serve
deserve a choice?*

Call us at **(317) 386-3500**

Email us at **info@bioresponsesolutions.com**

Visit our facility in **Danville, Indiana.**

Visit our website for more information.

www.aquamationinfo.com



Nobody does it better.



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