



A Greener Future for Single-Use Disposables

Shred and sterilize onsite. Supports your sustainability goals while delivering an ROI.



Up to
50%
Overall Cost
Savings


Supports
Sustainability
Goals

80%
Waste Volume
Density Reduction


Treated Waste
Recyclable

A Green Shift for Single-Use Waste Treatment

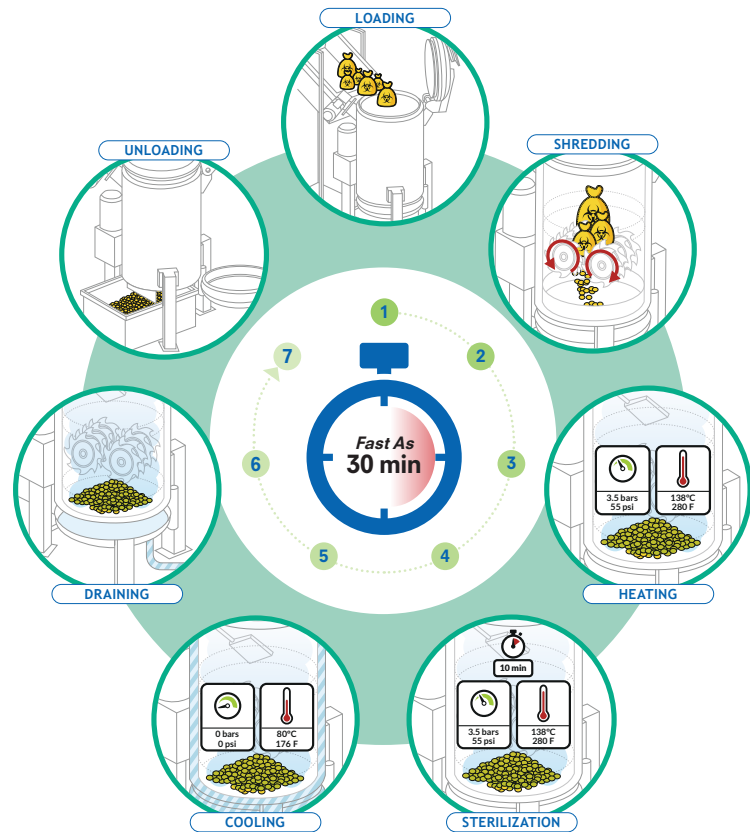
Single-use bioprocessing offers many environmentally-friendly benefits over traditional stainless batch processing, including reduced consumption of water, CIP chemicals and SIP energy. **Current single-use waste treatment methods, however, are costly and not supportive of the industry's green initiatives.**

PRI's bioXstream™ Sterilization System offers a green shift in the handling, treatment and disposal of regulated medical/single-use waste. The bioXstream™ is an on-site shred and steam-sterilization process (validatable 6 log₁₀ reduction) that allows users to sterilize waste before it leaves the facility. Onsite treatment greatly reduces material transport, treatment, and disposal expenses, with typical savings from 30% to 50% over hazardous haul-away services. Avoidance of waste incineration also lowers overall energy use and carbon emissions. The bioXstream™ process reduces waste volumes by more than 80%, and treated material is rendered as common municipal waste, appropriate for recycling and potential reuse.

- Shreds and steam sterilizes >10⁶ inactivation
- Savings up to 50% over existing methods
- Reduces employee handling of material
- Reduces carbon footprint for treatment
- Reduces waste volume by more than 80%
- Treated material rendered as municipal waste
- Treated material may be recycled or repurposed

The Process:

1. **Loading** of waste through the top opening.
2. **Shredding** starts as soon as the lid is closed, sealed and locked. Heavy-duty shredder features automatic reverse rotation to prevent jamming.
3. **Heating** is achieved via steam, raising the temperature to 300° F and pressure at 51 psi.
4. **Sterilization** is achieved by maintaining pressure and heat for 10 minutes (adjustable time/temp to meet material density). Achieves microbial inactivation of >10⁶ reduction.
5. **Cooling** through the flash tank lowers temperature and pressure to prepare for system opening.
6. **Draining** of condensate and water into sanitary drain.
7. **Unloading** of the sterilized waste discharged into a waste tote, while liquid can be sent to an Effluent Decontamination System (EDS).



Compare Treatment Technologies

The chart below shows the ideal attributes of a regulated medical waste treatment system. The bioXstream™ offers the lowest total cost, least space requirement, no harmful byproducts, and broadest range of effectiveness over other technologies.

Attribute	BIOXstream™	Autoclave/ Steam	Incineration	Microwave	Chemical w/ Shredder	Chemical
Low Capital Cost	✓	✗	✗	✗	✗	✗
Low Install Cost	✓	✗	✗	✗	✗	✗
Low Operating Cost	✓	✓	✗	✓	✗	✗
Low Regulation	✓	✓	✗	✗	✗	✗
Low Space Requirements	✓	✗	✗	✗	✗	✗
No Harmful Byproducts	✓	✓	✗	✓	✗	✗
Community Friendly	✓	✓	✗	✗	✗	✗
Safe Emissions/Air Quality	Less Steam Odor	Steam Odor	Air Pollution	Extreme Odor	Chemical Odor	Chemical Odor
Waste Handled						
Sharps	✓	✗	✓	✗	✓	✗
Fluids	✓	✓	✓	✓	✓	✓
Animal Waste	✓	✗	✓	✓	✓	✗
Pathological	✓	✗	✓	✓	✓	✗
Microbiological	✓	✗	✓	✗	✓	✓

KEY: ✓ achieves attribute ✗ moderately achieves attribute ✗ does NOT achieve attribute

Sizes & Specifications:



Data	X-300	X-700	X-1000	X-2000
Volume Capacity	350 L (93 gal)	700 L (185 gal)	1100 L (291 gal)	2500 L (660 gal)
Avg. Process Capacity <i>*see waste density below</i>	35-52 kg/cycle (77-115 lbs/cycle)	70-90 kg/cycle (155-199 lbs/cycle)	110-165 kg/cycle (242-364 lbs/cycle)	250-375 kg/cycle (550-825 lbs/cycle)
Avg. Daily Capacity 3 shifts (24 hrs/day)	2,088 kg (4,608 lbs)	4,176 kg (9,216 lbs)	5,667 kg (12,466 lbs)	10,000kg (22,000 lbs)
Avg. Cycle Time	30 min	30 min	35 min	45 min
Dimensions (L x W x H)	270 x 210 x 330 cm (8.8 x 6.8 x 10.8ft)	460 x 430 x 520 cm (15.1 x 14.1 x 17.1 ft)	490 x 460 x 640 cm (16.1 x 15.1 x 21ft)	490 x 460 x 640 cm (16.1 x 15.1 x 21ft)
Electricity/Cycle	1.7 kWh	3.5 kWh	4 kWh	9 kWh
Water	25 L (7 gal)	30 L (8 gal)	35 L (9 gal)	50 L (13 gal)
Steam	15 kg (33 lbs)	18 kg (40 lbs)	20 kg (44 lbs)	40 kg (88 lbs)
Max Steam Flow	170 kg/h (375 lbs/h)	230 kg/h (507 lbs/h)	370 kg/h (816 lbs/h)	500 kg/h (1,102 lbs/h)

* Assumes Avg. Density of Regulated Medical Waste of 100-150 kg/M3 (0.8 – 1.3 lbs/gal)
All Models Use 8 bars (116 psi) of Steam Pressure, and 87 psi of Compressed Air



Biowaste Sterilization | Solvent Wash & Recovery | Custom Process Skids | Service

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