Evacle™

Bio Medical Waste & Healthcare Solutions

Providing an Affordable &
Environment Friendly On-Site
Medical Waste Treatment Solution

Effective, Safe &
Environment Friendly

www.evacle.com

Providing a Cutting-Edge On-Site Solution for Medical Waste Treatment

What is Medical Waste?

Approximately 80%
General Waste

Approximately 20%
Hazardous, Infectious & Toxic

World Health Organisation (WHO) defines medical waste as all types of waste generated by the health care services. Almost 15-20% of this medical waste is regarded as potentially infectious and hazardous causing over 260,000 human immunodeficiency virus (HIV) and 21 million Hepatitis (HEPA) B infections as a result of poorly managed waste. The current methods of medical waste systems are not only environmentally unfriendly but also not cost efficient in the long run.

This treatment eliminates the transfer of infectious virus and bacteria from the source and thus helps in the prevention of contracting infectious diseases like Covid-19 among medical front liners, patients and other related personnel. This machine is therefore is an excellent solution for healthcare in hospitals and healthcare centres.

The World Health Organization estimates that:

- **21 Million HEPA B virus infection**
- **2 Million HEPA C virus infection**
- **260,000 HIV virus infection**

Pathological

Radioactive

Pharmaceutical

Evacle 80

Sharps

Infectious

Evacle 80 - An Innovative Technology Expanding Safety for the Environment

A revolutionary in-house solution that shreds and sterilizes medical waste, eliminating the need for storage, transportation and incineration. The final product is a liquid phase that can be sent down the regular drainage system and a lower volume of shredded waste, that can go to the regular municipality waste.

1	2	3	4
Input Hazardous Waste	Shredding	Mixing & Sterilization	Separation & Output

A Robust Four Shafts Erosion Free Shredder

- Efficient
- Durable
- Low Wear & Tear

Evacetic – How does it work?

As part of our solution, once the waste has been shredded, it goes through a sterilization process simultaneously while being rigorously agitated. Intense studies show that this enables elimination of resistant bacterial spores and sterilization to STAATT level IV, thus making the nontoxic residue liquid to be safe enough to be discharged down the regular drainage system.

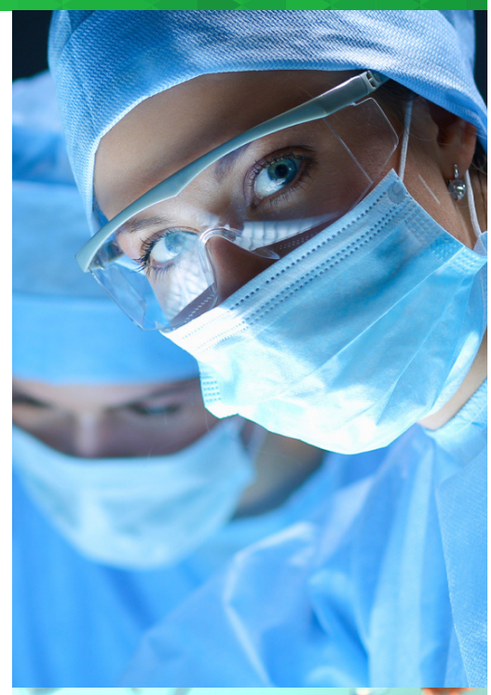
We call it 'Evacetic' - which is based on the known powerful sporocide Peracetic Acid (PAA).

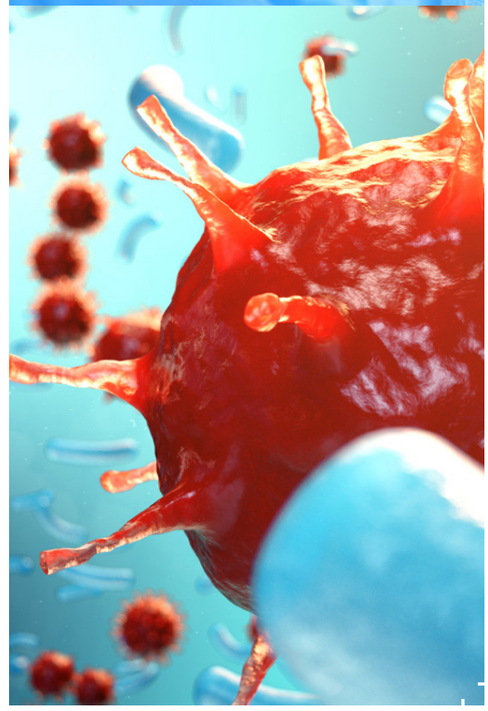
Biocidal Effect of PAA in 40˚C Temperature of Action

Kill times (in minutes) according to the suspension method of Dosimetric Leaf Gap DLG with 10^7 - 10^8 CFU / ml in the initial inoculum

Application concentration (%) as PAA 100%	0.01	0.025
Time it takes for sterilization		
Gram-Positive Bacteria		
Staph. aureus	1	0.5
Strept. faecalis	1	0.5
Gram-Negative Bacteria		
Enterobacter aerogenes	1	0.5
Ps. aeruginosa	1	0.5
Salmonella types	1	1
Yeasts		
Sacch. cerevisiae	1	0.5
Cand. mycoderma	3	1
Molds		
Penicilium camerunese	3	1
Asp. niger	10	5
Mucor spec.	3	1
Sporulators		
Bac. cereus	1	0.5
Bac. subtilis	1	0.5
Bac. mesentericus		
Thermophile sporulators	1	0.5
Clostridium perfringens	1	0.5

Source: major PAA producer





Evacle 80 – Greater Productivity, Simple to use & Cost Effective

In just under 20 minutes the Evacle 80 sterilizes to STAATT level IV, reducing waste volume by up to 80%

Shredding with 80% volume reduction

Sterilizing

Send to the regular municipality waste

Evacle 80 Typical Treated Waste Volume per Machine(s) according to Number of Beds

No. of Machines	Waste Volume Treated	Estimated No. of beds
x1	Up to 250 kg per day	500
x2	Up to 500 kg per day	1000
x3	Up to 750 kg per day	1500

** 1 shift per day may vary according to Medical Waste Mix*

STAATT Recommendations & Good Treatment Practice

Sterilization is internationally accepted to be defined as "the probability of a single viable microorganism occurring on and/or in a system after sterilization"*. When analyzing the elimination of microorganisms from a system, it is acceptable to examine efficacy in terms of log reduction achieved by the process.

* Source: Sean Moran. Sterilization and disinfection. In: Engineering science of water treatment unit operations, 2018.

STAATT IV

Inactivation of vegetative bacteria, fungi and lipophilic or hydrophilic virus, parasites and Mycobacteria at 6 log^{10} reduction or greater, and an inactivation of B. Stearothermophilus spores at a 6 log^{10} reduction or greater

Reference Bacterial Strain	Reduction Rate
Geobacillus Stearothermophilus	> 6 log^{10}

Good Treatment Practice & Performance Monitoring

At Evacle, safety is our top priority. We understand the importance of routine monitoring and the integrity of the sterilization process results. Often, this comes at high costs and complexity, so we have developed a 'Good Treatment Practice' (GTP) system, which provides a cost effective solution on-site, allowing you the ability to monitor performance and have peace of mind.

Biological & Chemical Indicators

In order to carry out routine inspection of the performance of the sterilization process, Evacle can provide kits containing biological indicators recommended by the STAATT. The kit contains 10^6 Geobacillus Stearothermophilus' bacterial spores, allowing for routine tests in compliance with STAATT level IV sterilization recommendations, without the need for an external laboratory. Evacle also provides "Reactive ink" indicators for frequent monitoring of PAA concentration and the entire process parameters.

Evacle 80 Specifications

Unit dimensions

Dimensions	1670 X 785 X 1450mm (WxLxH)
Weight	800 kg

Ambient operation conditions

Temperature	5°C to 40°C
Humidity	30% to 70% Noncondensed

Solid/Liquid separator dimensions - Automatic Screw Conveyor

Dimensions	1000 X 780 X 1930 (WxLxH)
Weight	170 kg

Raw waste compartment dimensions

Dimensions	430 X 600 (WxD)
Waste capacity per cycle	80 litres

Connection requirements (power)

Voltage (imbedded water heater)	3 Phase, 380-400 Vac + N + G, 50 (60) Hz, 32 (A)
Voltage (External water heater)	3 Phase, 380-400 Vac + N + G, 50 (60) Hz, 16 (A)

Connection requirements (water & drain)

Water Connection	¾ BSP
Water Input temp range	10 to 40 °C
Water Input temp (external heater option)	43 °C
Mean water flow rate	≥ 6 litres/min
Drain connection	2" or 50.8mm Diameter

** Drinking water quality, min. 2.5 bar static or 36.3 psi pressure.*

Functional data per cycle

Duration of cycle	15 min<
Effectiveness	STAATT level IV
Power consumption per cycle	0.9 kW/h

Evacle 80

Be Part of the Solution

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ISO 9001 : 2015
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