PROMED MEDICAL WASTE STERILIZATION SYSTEMS

BIOHAZARD

VERTISA ENVIRONMENTAL TECHNOLOGIES

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THE COMPANY

Vertisa Cevre Tek. Ltd. Sti. is a young and dynamic company which has been formed by individuals who have vast experience and a long reputation in the Medical Waste Sterilization industry.

Vertisa's aim is to become the preferred supplier for the Medical Waste Treatment business. Our company develops complete medical waste sterilization related solutions for hospitals, clinics and industrial size medical waste treatment facilities in general.

By utilizing our 20 year experience and know-how, we provide equipment that is adapted to the specific needs of the industry, that could only be developed by a sterilization expert.

Our company operates under ISO 9001, ISO 14001, OHSAS 18001 quality standards, and our products are manufactured according to European Union Directives like PED (2014/68/EU), 2006/42/EC, 2014/30/EU and European Union Norms like EN285.

We continually invest in an on-going Research and Development programme, to extend the areas of application for our sterilization technology and to ensure that our customers are able to extract the maximum value from our products, whilst contributing to their environmental targets.

We support our customers through the complete cradle to grave lifecycle management of the waste sterilization plant, from the initial testing of the material at Vertisa's test facility, through design and supply to the physical on-site installation of a full commercial plant and subsequent technical and managerial support and service.

At Vertisa, we are passionate about viewing these challenging wastes as a resource while ensuring the waste sterilization process is as efficient and sustainable as possible.

OUR PRODUCTS - PROMED MEDICAL WASTE STERILIZATION SYSTEMS

Our brand PROMED is the most widely used solution in Turkey and Europe for the sterilization and decreasing of volume of waste originating from public health.
PROMED is the most innovative model in the field of "medical waste disposal" and has been designed by Research and Development department engineers using our vast experience in this field.

MISSION STATEMENT

Vertisa 's vision is to provide innovative solutions to the medical waste management industry all around the globe while continually strive to achieve full compliance with the environmental regulations.

We wish to form long lasting mutually beneficial relationships with our clients while contributing in the continually improvement of the medical waste industry in the countries that our products operate.

OUR GOALS

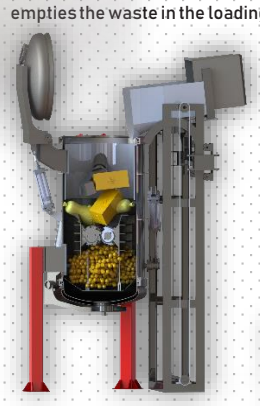
- To become the largest supplier of medical waste sterilization equipment in the industry
- To achieve an outstanding reputation in each of the countries where our products operate, by providing innovative and state of the art products.
- To provide training programs to our clients to enhance the industry and safe handling of medical waste.
- To continually look for improvements in product design and implementation of our products.
- To provide an environment for our staff to become self empowered.

PROMED®

PRE SHREDDING CYCLE STAGES

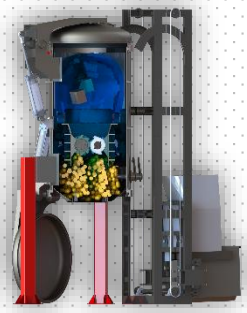
1 - LOADING

At the beginning of the cycle, once the upper lid opens, the automatic elevator empties the waste in the loading chamber. As the upper lid closes shredding starts.



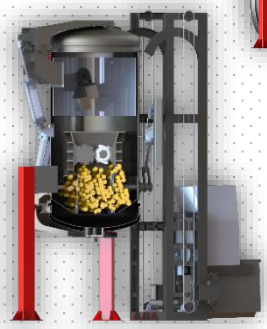
2 - SHREDDING

The shredder, controlled by the PLC, changes rotation direction due to the "anti blocking" capability that prevents the blades to get jammed. Our special design shredder is capable of grinding very hard materials like surgical stainless steel instruments and hard ceramics. The mixing device in the upper chamber will provide the continuous feeding of the shredder.



3 - HEATING AND STERILIZATION

Heating is achieved by injecting saturated steam until the homogeneous temperature in the upper and lower chamber reaches 134°C (274 F). Sterilization is completed by maintaining 134°C (274 F) - 138 °C (280 F) temperature and equivalent pressure for a period of 10 – 15 minutes. These factors provide the possibility to decrease the pathogenic contamination level in the medical waste by 8 Log 10 value.



4 - COOLING AND DRAINING OF CONDENSED WATER

Excess steam in the chamber is removed during cooling phase and the temperature of the grinded sterilized waste is lowered to by injecting cold air in the chamber of the autoclave. The condensed water, that sterile and can be safely discharged into the sewage system is drained with the help of positive pressure or vacuum.

5 - UNLOADING

Once the unloading lid opens and a container is placed below the chamber, the waste trap opens to discharge the sterilized material. As the container is pulled away, the lower lid closes and the sterilizer automatically starts the next cycle.

TECHNICAL SPECIFICATIONS

	PROMED P 2000	PROMED P 1000	PROMED P 500	PROMED P 300	PROMED P 150	PROMED P 100	PROMED P 50
TECHNICAL FEATURES							
Size (L x W x H) (mm)	3000 x 3000 x 7200	2500 x 2500 x 5500	2250 x 2250 x 4200	2000 x 2000 x 3600	2700 x 1700 x 1700	2700 x 1600 x 1600	2700 x 1500 x 1500
Weight (Kg)	4600	2900	2500	2200	2930	2680	2100
Air Pressure (Bar max)	8	8	8	8	8	8	8
Electrical connection required (Kw)	35	20	19	15	35*	30*	30*
WORKING CHARACTERISTICS							
Sterilizing Capacity (Kg/ Hour)	350 – 450	200 -250	150 -175	80 - 100	45 - 55	25 - 35	15 - 20
Process Volume Capacity (Lt.)	2800	1400	750	400	225	150	75
Average Waste Density (Kg/m3)	100 – 150	100 -150	100 -150	100 -150	100 -150	100 -150	100 -150
Average Cycle Time (Min.)	45 - 60	35 - 45	35 - 45	30	30	30	30
Maximum Steam Flow (Kg/Hour)	700	470	320	270	170	140	100
Sterilization Efficiency (SAL)	8 Log_{10}	8 Log_{10}	8 Log_{10}	8 Log_{10}	8 Log_{10}	8 Log_{10}	8 Log_{10}
CONSUMPTION / CYCLE							
Steam (Kg)	40	20	15	11	8	7	6
Electricity (Kw)	15	9	5	4	1.7**	1.5**	1.2**
Water (Lt)	None	None	None	None	None***	None***	None***
Special Consumables	None	None	None	None	None	None	None

*P50 - P100 - P150 includes built in electrical steam boiler ** Electrical consumption of the sterilizer only *** Water consumption of integrated steam boiler: 7 - 12 Lt./ Cycle

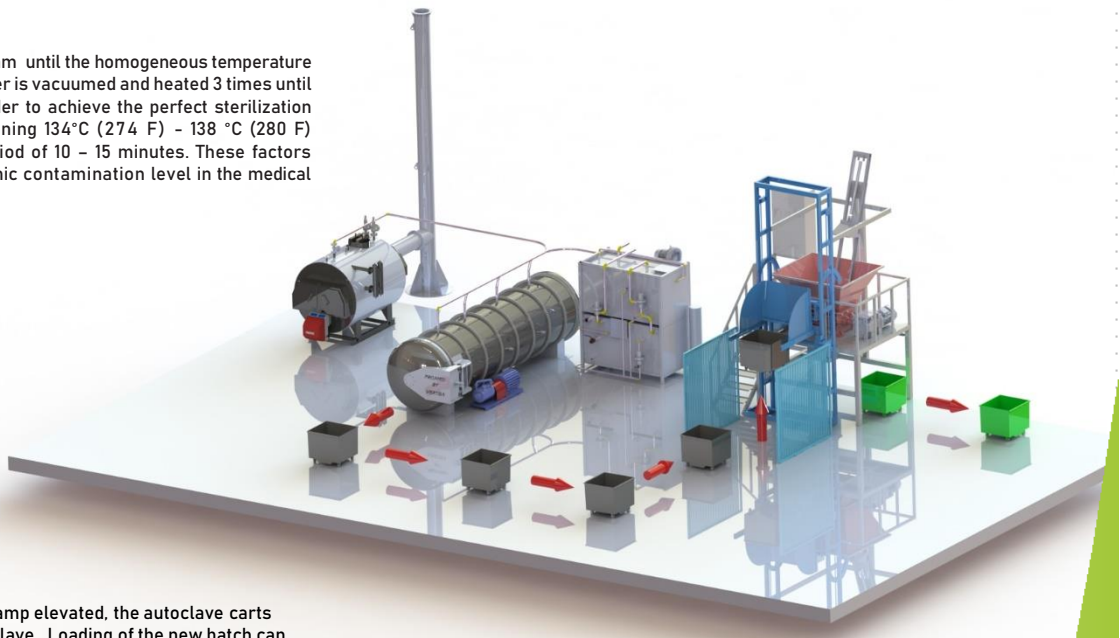
POST SHREDDING CYCLE STAGES

1 - LOADING

Stainless steel autoclave carts filled with waste are loaded into the automatic ramp and then pushed into the autoclave. As the loading is finished the ramp lowers and the loading lid closes.

2 - HEATING AND STERILIZATION

Heating is achieved by injecting saturated steam until the homogeneous temperature in the chamber reaches 134°C (274 F). The chamber is vacuumed and heated 3 times until all the air is replaced by saturated steam in order to achieve the perfect sterilization condition. Sterilization is completed by maintaining 134°C (274 F) - 138 °C (280 F) temperature and equivalent pressure for a period of 10 – 15 minutes. These factors provide the possibility to decrease the pathogenic contamination level in the medical waste by 8 Log 10 value.



3 - COOLING AND DRAINING OF CONDENSED WATER

Excess steam in the chamber is removed during cooling phase and the temperature of the sterilized waste is lowered to by first vacuuming and then injecting cold air in the chamber of the autoclave. The condensed water, that sterile and can be safely discharged into the sewage system is drained with the help of positive pressure or vacuum.

4 - UNLOADING

Once the unloading lid opens and the automatic ramp elevated, the autoclave carts with sterilized waste are removed from the autoclave. Loading of the new batch can be completed and start a new cycle immediately.

5 – SHREDDING

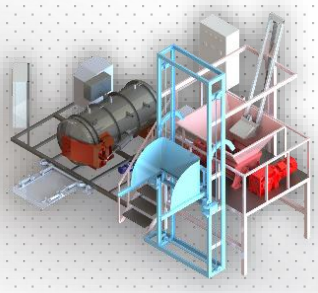
The autoclave carts with the sterilized medical waste are loaded into the automatic elevator that will empty the waste on the shredder.
The shredder, controlled by the PLC, changes rotation direction due to the "anti blocking" capability that prevents the blades to get jammed.
Our special design shredder is capable of grinding very hard materials like surgical stainless steel instruments, glass, hard plastic, thin metal sheets and hard ceramics.
A hydraulic ram will force the waste on the blades to provide the continuous feeding of the shredder.

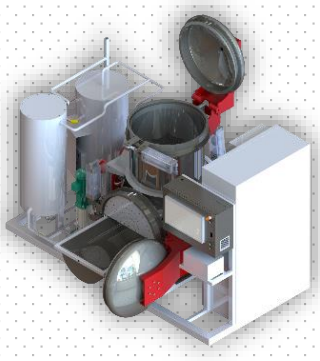
TECHNICAL SPECIFICATIONS

	PROMED A 1000	PROMED A 500	PROMED A 300	PROMED A 150	PROMED A 75
TECHNICAL FEATURES					
Size (L x W x H) (mm)	6000 x 2500 x 2500	3500 x 2250 x 2250	3000 x 2000 x 2000	2200 x 1500 x 1500	1500 x 1500 x 1500
Weight (Kg)	6400	4600	2800	1850	1450
Air Pressure (Bar max)	8	8	8	8	8
Electrical connection required (Kw)	35*	35*	19*	17*	17*
WORKING CHARACTERISTICS					
Sterilizing Capacity (Kg/ Hour)	1000	500	300	150	75
Process Volume Capacity (Lt.)	7500**	3500**	2000**	870**	400**
Average Waste Density (Kg/m3)	100 -150	100 -150	100 -150	100 -150	100 -150
Average Cycle Time (Min.)	45	45	40	30	30
Maximum Steam Flow (Kg/Hour)	950	670	380	290	250
Sterilization Efficiency (SAL)	8 Log_{10}	8 Log_{10}	8 Log_{10}	8 Log_{10}	8 Log_{10}
CONSUMPTION / CYCLE					
Steam (Kg)	70	45	32	13	11
Electricity (Kw)	16***	11***	7***	4***	3***
Water (Lt)	None	None	None	None	None
Special Consumables	Autoclave Bags	Autoclave Bags	Autoclave Bags	Autoclave Bags	Autoclave Bags

* Shredder and Sterilizer total electrical connection requirement ** Net loading volume of the autoclave containers ***Electrical consumption of the Shredder and

WORLDWIDE REFERENCES





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