OBERON ALPHA EU

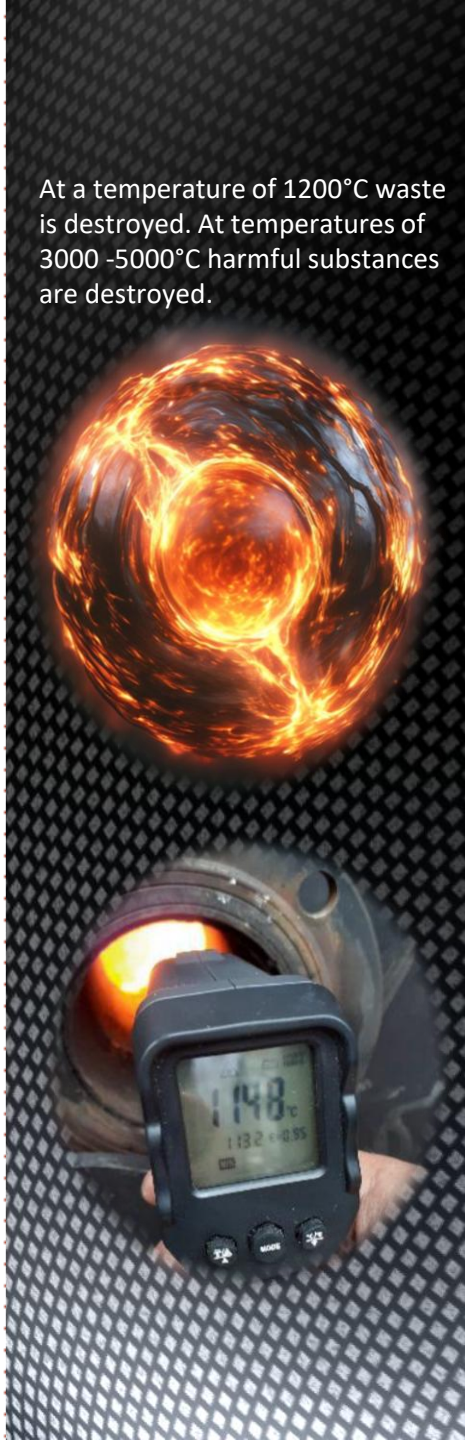
Plasma electromagnetic destructor for eco waste disposal

Plasma electromagnetic destructor for ecological waste recycling

- **Plasma-chemical technology allows destruction at temperatures up to 5000 °C.**
- **Simultaneous disposal and neutralization of waste.**
- **Complete combustion of gases generated during waste disposal (no cleaning required, no synthesis of dioxins, furans and other persistent organic pollutants (pops) occur.**
- **Amount of ash from 0.2 to 5% (does not contain dioxins and furans).**
- **Absence of slags to be disposed of or buried.**

A fundamentally new result in waste management, which cannot be achieved at incinerators using traditional technologies!

At a temperature of 1200°C waste is destroyed. At temperatures of 3000 -5000°C harmful substances are destroyed.



Plasma electromagnetic destructor for waste recycling

The quality of the processes is ensured by their implementation in the vortex layer. This is the chaotic movement of ferromagnets in a rotating magnetic field. In the vortex layer a complex interaction with the processed product occurs resulting into grinding of solids in liquid and dispersion media due to mechanical movement of ferromagnets, affecting the surface of solid particles. Electric fields and the electrolysis process change in the physical and chemical properties. High electromagnetic field works as a powerful disinfection factor. The device is used to intensify various types of physical and chemical processes.

COF (concentrated organic fertilizer). The unit for processing of liquid biological and chemical waste.

COF
The unit of preparation of liquid biological and chemical waste for processing .

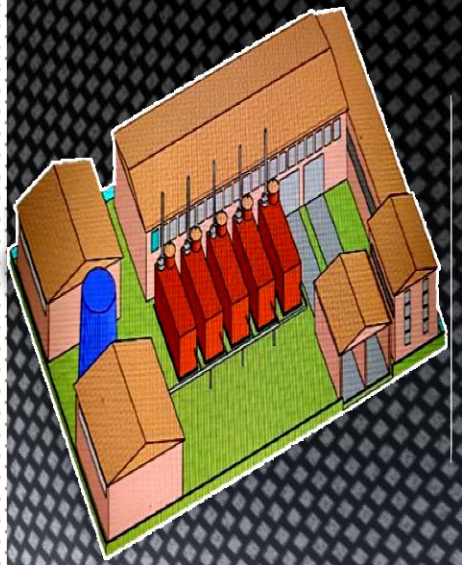
This is a device that is used to intensify various types of physical and chemical processes

Plasma electromagnetic destructor for waste recycling

The waste disposal unit allows to:

- completely recycle industrial, municipal solid and liquid household waste, including wet wood chips and sawdust, automobile tires,
- solve the problem of slag formation, storage and disposal of secondary waste,
- eliminate harmful emissions into the atmosphere and the presence of dioxins and furans in the ashes,
- increase the autonomy of the site (facility) during waste destruction + energy is generated and water for technical needs is produced,
- Increase profits through associated energy generation,
- Significantly reduce the area for waste collection,
- Start operation as soon as possible,
- Provides opportunities through great efficiency.

The productivity of one plant is up to 5 tons of waste per hour. Total productivity when combining several plants into a complex is unlimited. The independence of the installations from each other ensures the possibility of choosing the operating mode of the complex and their separate units.



Plasma electromagnetic destructor for waste recycling

- From 0.5 to 5 tons of waste is managed,
- from 0.06 to 2 MW of electricity is produced,
- from 3.5 to 10 MW of heat (temperature up to 115 ° C, pressure up to 5 Bar),
- from 6 to 76 tons of water for technical needs.

Energy generation may exceed the energy required for the destruction process itself. Simultaneous disposal of waste and generation of energy both for own needs and commercial use. The resources produced during destruction ensure the full or partial autonomy of the site.

Plasma electromagnetic destructor for waste recycling

Characteristics	PE Destruction	Current Technologies
Power Consumption	low	high
Energy generation	high	low
Wet waste	disposes of	does not recycle
Recycling and disposal of secondary waste	not required	required
Highly toxic dioxins, furans and benzapyrene	missing	present
Gas purification	not required	required

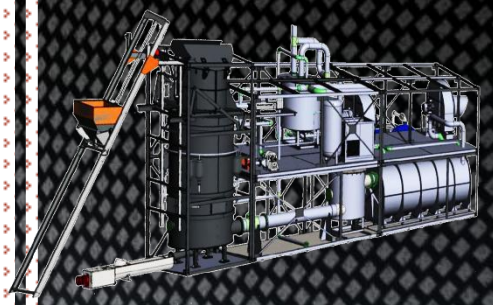
A unique combination of low energy consumption, associated energy generation, minimum of secondary wastel, destroys persistent organic pollutants (both in ash and in mold)

Plasma electromagnetic destructor for waste recycling

Polluting substance	Emission index (mg/m3)	
	Destruction	Technology from the reference book
Benzopyrene	< 0,000210	<0,001
Nitrogen oxide and dioxide	<123	< 200
Carbon monoxide	<7,6	< 50
Limit hydrocarbons C12-C19	< 1,12 + 0,28	< 10
Hydrogen chloride	≤ 0,31	<10
Hydrogen fluoride, soluble fluorides	<0,75	<1

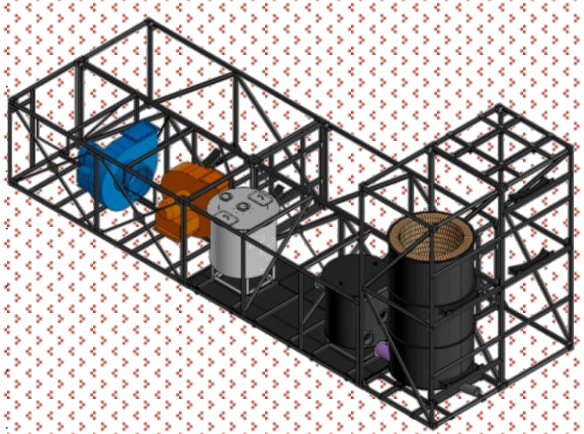
The results of destruction exceed the technological performance of the best available technologies for waste disposal and neutralization, including thermal methods.

The conclusion of the Government environmental expertise was obtained for the technical documentation "Technology of plasma chemical waste disposal/ thermal method". GEE) No. 86 1 01 1 05 0097 22. The indicators of pollutant emissions were not confirmed. Test report No. IL11 52192 dated 11/28/2024,



Plasma electromagnetic destructor for waste recycling

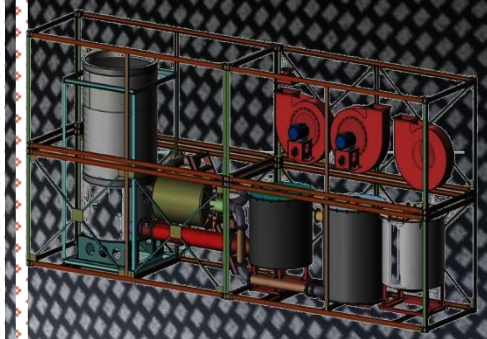
Name of the parameter	Meaning
MSW performance	from 0.5 to 5 tons/hour
Performance of the residue according to ZHBO	from 10 to 40 m3/hour
Productivity of medical and petrochemical waste	from 0.7 to 7 tons/hour
Wastewater (sludge) treatment capacity (optional)	from 12 to 55 m3/hour
Industrial water capacity (with evaporation unit)	from 6 to 76 tons/hour
Shredder plant performance	10 tons/hour
Electricity consumption	60-110 kW/h
Parameters of heat energy transfer (hot water)	5 Bar / 115 °C
Degree of destruction (recycling)	from 95 to 99.8%
Reactor operating pressure, MPa: nominal / maximum	0.002(0.02) kgf/cm2 / 0.005(0.05) kgf/cm2
Degree of waste hazard	Grades 2-5
Maximum allowable humidity of raw materials	95%



The installation is configured based on the analysis of the waste composition/ structure. The installation is used for the disposal and neutralization of waste, as well as for the provision of services asa waste management operator.

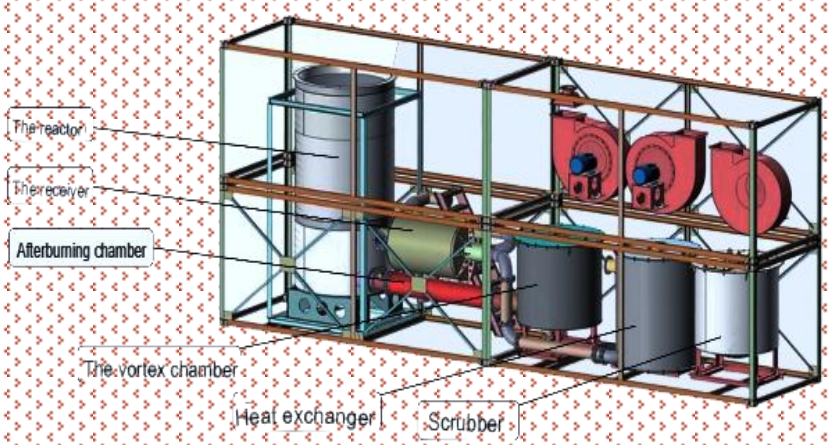
Warranty period 12 months.

Full service life of the installation is 10 years.

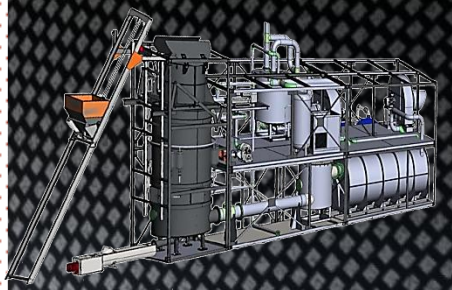


Plasma electromagnetic destructor for waste recycling

- Main components
- Airlock camera with a loading hopper
- Heat chamber
- Gas system
- Cyclone
- High pressure system
- Instrumentation and control system
- Steam and smoke pipe
- Reactor
- Pyrolysis gas system
- Air system
- Heat exchanger
- Electrical engineering system
- Control panel
- Skeleton
- Spacer (2 pcs.)



Additional options: Belt conveyor with electric motor. 6 kW for feeding raw materials into the loading hopper Steam generating machine P=1 MW Fire extinguishing and alarm system Shredder for crushing MSW 2 tons/hour, from e/dv. 20 30 backup Power Generator



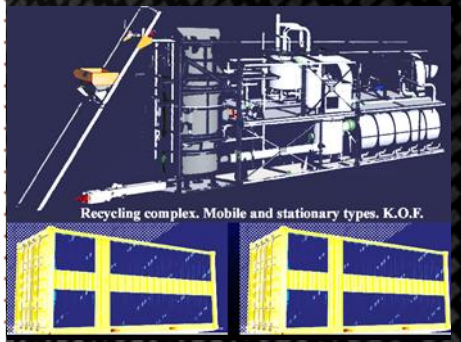
Plasma electromagnetic destructor for waste recycling

Advantages of PE waste destruction technology:

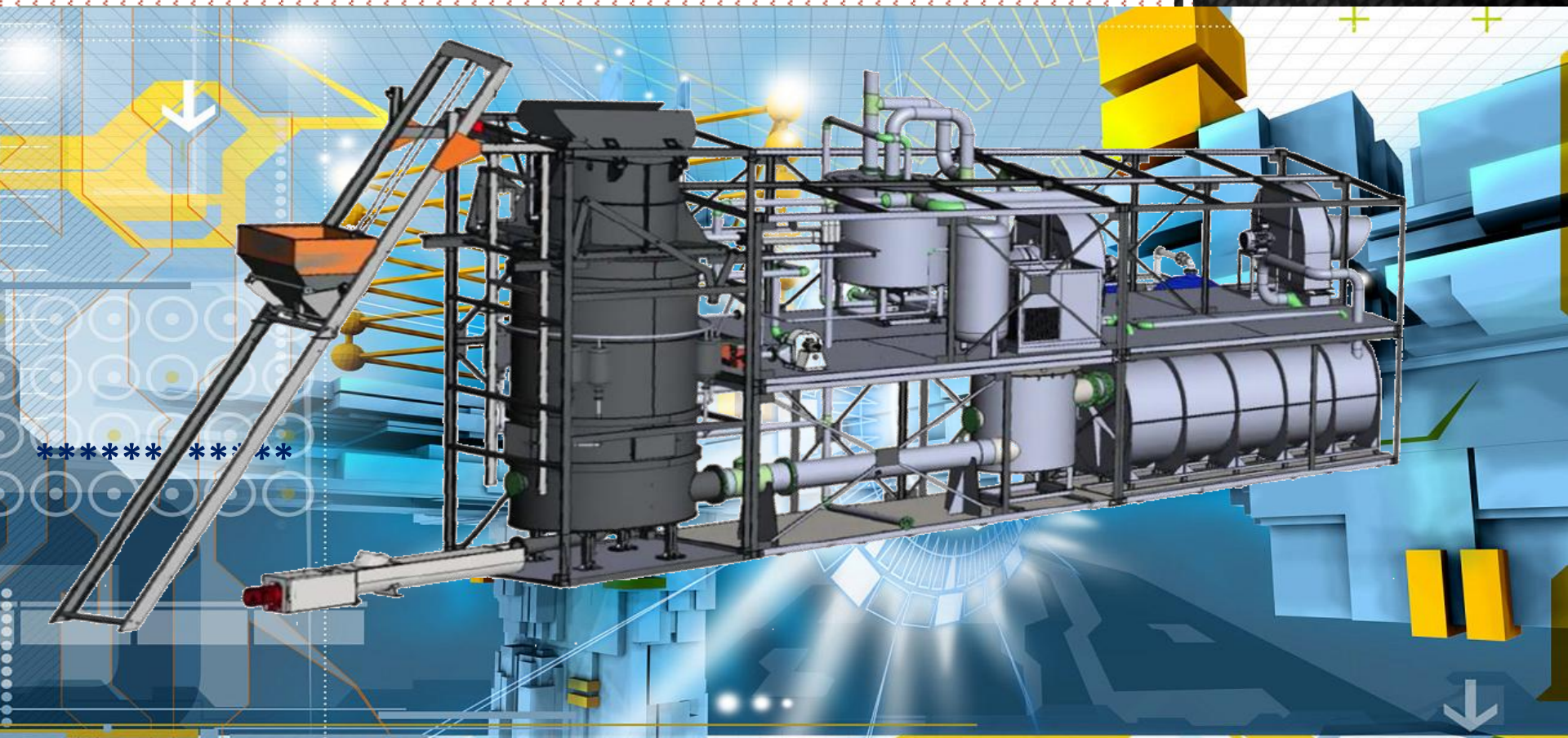
- **Profitability,**
- **Environmental friendliness.**

The possibility of disposal simultaneously with multiple systems of various types of waste with a humidity of up to 95%, including chemical components, oil refining residues, sludge, coal mining (waste paper), computer equipment, medical waste, poultry, farm, livestock waste and many others. Technology compliance with legal requirements (the plant can be operated by a waste management operator). Waste disposal and neutralization without dangerous emissions into the atmosphere and without the formation of persistent organic pollutants in the ash residue. No waste for disposal (slags). Low energy consumption and generation of large amounts of heat or electric energy. The technology does not require natural gas or any other type of fuel. The ability to design and scale technological complexes without performance limitations. Low cost of plant design, construction and operation. No replacement of filter elements is necessary during operation. The installation is operated by 3 employees. Compactness of installation or complex of installations. Fast installation (usually within 4-7 days).

Summary: environmental friendliness, profitability.



Plasma electromagnetic destructor for waste recycling



Thank you for your attention.
Should you have any questions, please do not hesitate to get in touch with us and we will help you to manage waste in your region.