ECOMAG PYROLATOR

Municipal SOLID Waste Management Machine

By

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Authorized Distributors

Agenda

- Key Challenges In Solid Waste Mgt.
- ECOMAG Introduction
- ECOMAG Technology Details
- ECOMAG Environmental Norms Test Results
- Appendix

Common Urban Garbage Disposal - Challenges & Health Hazards

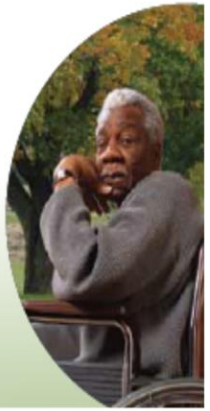
Common Urban Garbage Disposal – Challenges & Health Hazards

Up in Smoke

Open burning of garbage poses health risks to those exposed directly to the smoke. It especially affects people with sensitive respiratory systems, as well as children and the elderly.

In the short term, exposure to smoke can cause headaches, nausea, and rashes. Over time, it can increase the risk of developing heart disease. Some of the pollutants contained in the smoke from open burning of garbage can include:

- Dioxins
- Furans
- Arsenic
- Mercury
- PCBs
- Lead
- Carbon monoxide
- Nitrogen oxides
- Sulphur oxides
- Hydrochloric acid



Dioxins, Furans, and Your Health

One of the greatest concerns with open burning of garbage is the health risks posed by the release of dioxins and furans into the environment. Exposure to dioxins and furans has been linked to:

- Certain types of cancers
- Liver problems
- Impairment of the immune system, the endocrine system, and reproductive functions
- Effects on the developing nervous system and other developmental events

In Canada, the open burning of garbage produces more dioxins and furans than all industrial activities combined.

Dioxins, Furans, and Your Environment

Since open burning of garbage is more common in rural and agricultural areas, there is particular concern for high levels of dioxins and furans settling on crops, in our streams, and in our lakes. Dioxins and furans produced by the open burning of garbage are deposited on plants, which are eaten by animals. The dioxins and furans are absorbed by these animals and stay in the food chain until they ultimately end up in our meat and dairy products. In fact, over 90 percent of our intake of dioxins and furans is from our diet.

What Is Open Burning?

Open burning refers to burning garbage in barrels, open pits, outdoor furnaces, woodstoves, or fireplaces. Open burning of garbage is much more harmful to your health and the environment than you may think.

Some people may say, "We've been burning garbage for ages, so what's the big deal now?"

We now understand that open burning of garbage—even seemingly harmless materials like paper, cardboard, yard waste, and construction debris—releases a hazardous mixture of cancer-causing compounds and other toxic substances when open-burned.

Polyvinyl chloride is a material found in children's toys and a variety of other household products. It forms dioxins when burned, which are very toxic. Dioxins can cause growth defects and cancer in children.

ECOMAG PYROLATOR

ECOMAG

MAGNETIC MUNICIPAL SOLID WASTE DECOMPOSITION MACHINE

What is ECOMAG ?

- A unique Garbage Decomposition Equipment, using Magnetic Heat Technology, without using any fuel such as oil or electricity.
- Developed & Made in India.

We change the concept of
Waste Treatment!!!
by
Safe, Simple, Useful, Eco-Friendly Systems

Unique/ Key Product Highlights

1. No Electricity/No Solar/No Petroleum Fuel *
   - Magnetic Heat Technology
   - Chimney alone operates on Electricity (1HP Consumption Motor) with negligible power
2. Feeding Garbage is the Fuel for the Equipment
3. Reduces Land filling substantially
   - Reduces the volume of garbage in the ratio of 200:1 to 300:1 (Ceramic Ash)
4. Total Cost of ownership
   - Low Cost of ownership.
   - Can be operated by unskilled labors
   - Minimal training requirement
   - Easy to operate
   - Minimal Maintenance support required




ECOMAG - Manages these & Much more !! .....Ecofriendly & Safe




ECOMAG – What is Can't Manage ?

Metal & Metal Scrap

Metal CANS

Building Debris /Stones

Glass Waste

Advantages/Merits of - ECOMAG

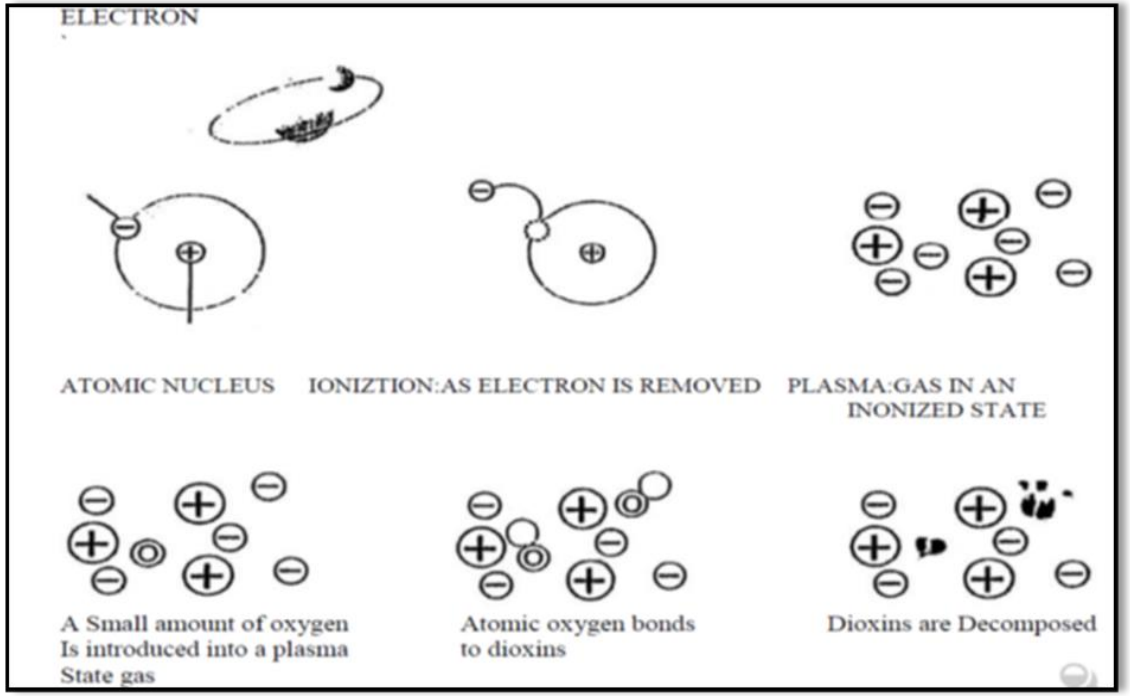
- It eradicates all septic/poisonous substances (example, Hospital Generic wastes & other contagious substances like virus and bacteria)
- The residual output is Ceramic ash, which can be used for various purposes like home painting and is good for road asphalting and Brick Making
- Is a unique apparatus for garbage disposal which generates a special Magnetic Heat Decomposition method, without using any fuel such as oil or electricity.
- Reduces the volume of garbage in the ratio of 300:1, 200:1
- There is no flame required to burn the organic waste, thus less smoke, even after dumping petrochemical Products such as vinyl, plastic, etc .

Advantages/Merits of - ECOMAG

- Organic waste residues can be used as a by-product for improving soil conditions and can act as a disinfectant, after mixing with water.
- The duration of decomposition depends on the ratio of moistness of garbage. It is recommended the moisture is maintained below 65%.
- It has been proven that the Toxic substances put in this system revealed that there was no emission of any toxic nature in spite of processing at low temperature (400 C ~ 650C).
- As compared to the incinerators which operate on high temperatures and require secondary combustion system, ECOMAC requires no such operation and does not require higher temperatures as it has the unique feature of Magnetic Decomposition.

ECOMAG- Key Technical Highlights & advantages

- Theory of Plasma
- Plasma (is an ionized gas, in which some electrons are removed from atoms and molecules and are free) is created by permanent magnets at high temperatures, 400–650°C.
- When a small amount of oxygen is absorbed into the plasma, highly reactive, negatively charged oxygen ions (Atoms and molecules)that have lost electrons are positive ions (positively charged);
- Electrons that have been removed are negative ions (negatively charged) are formed. This oxygen (negative ions) is highly oxidative, thus decomposing dioxins and other harmful compounds by oxidation



ECOMAG - Key Technical Highlights and advantages

Working Principle

- Closed chamber Destruction with plasma and ionization techniques at OXYGEN STARVED condition.
- The decomposition temperature is around 400 - 600 degree C depending on the solid waste input.
- Does not require Main Stream Energy Sources like Electricity, Solar Power or Petroleum fuel for organic substances for decomposition

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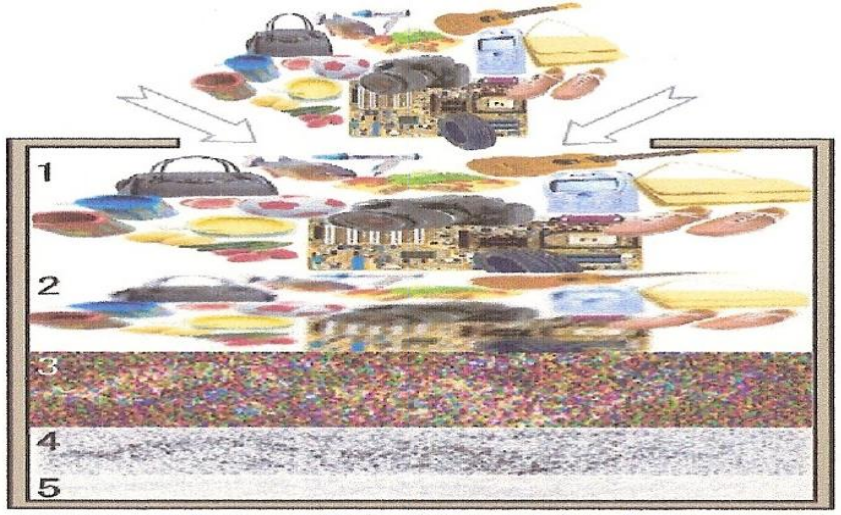
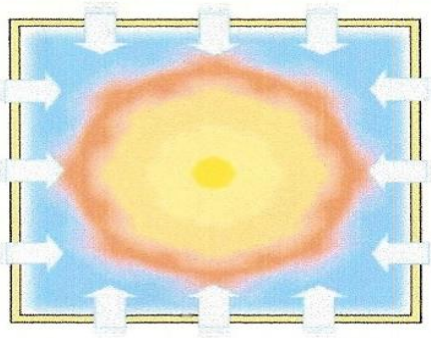
Magnetic Technology



1: Waiting 2: Drying 3: Carbonizing 4: Ashes 5: Ceramic ash

Image of Processing Furnace



The operation process is contenious chemical decomposition with magnetized air and ceramic ash. So, there is almost no poisonous by-products such as dioxins.

Magnetized air

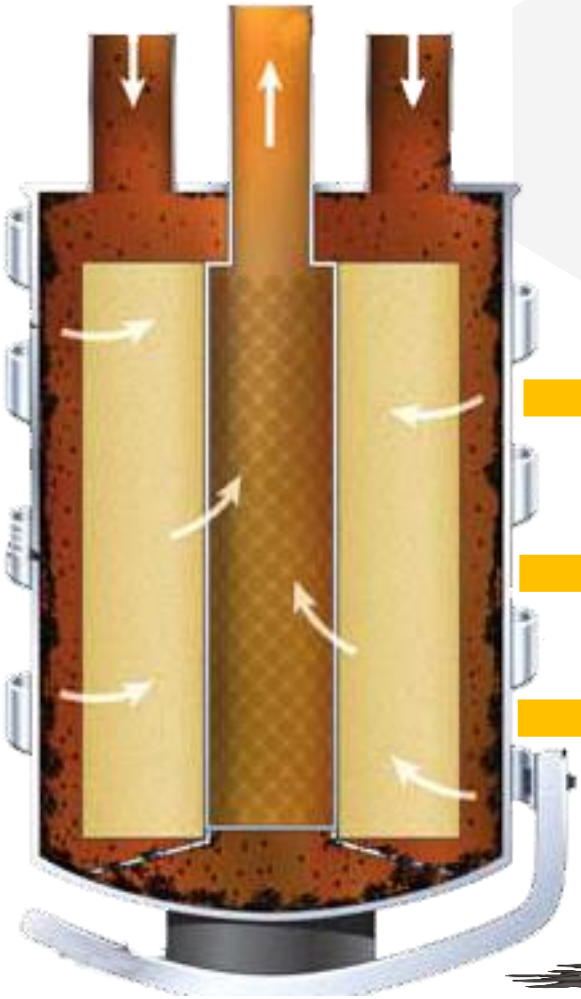
JM-1 is an epoch-making apparatus which treat organic substances with the method of intaking very little air though strong magnets.
This method is idealistic and beyond thecurrent scientific theory.

ECOMAG Disposal Process (Pictorial Representation)

Collected Garbage

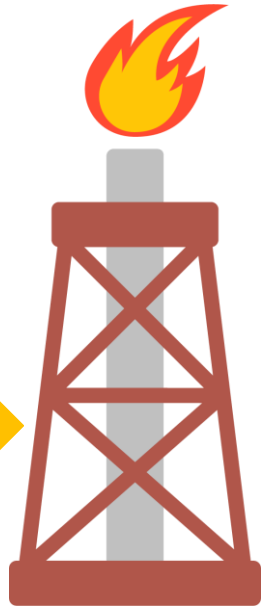
Garbage Input

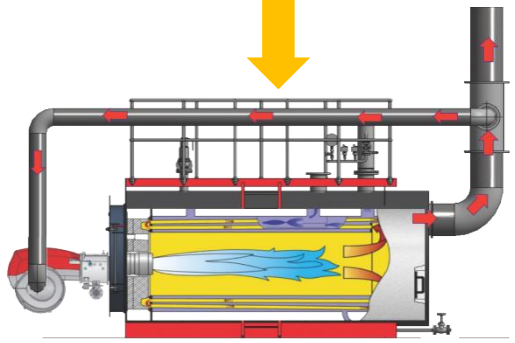
Highly Magnetized Air



Ceramic Ash

Emitted Flue Gases

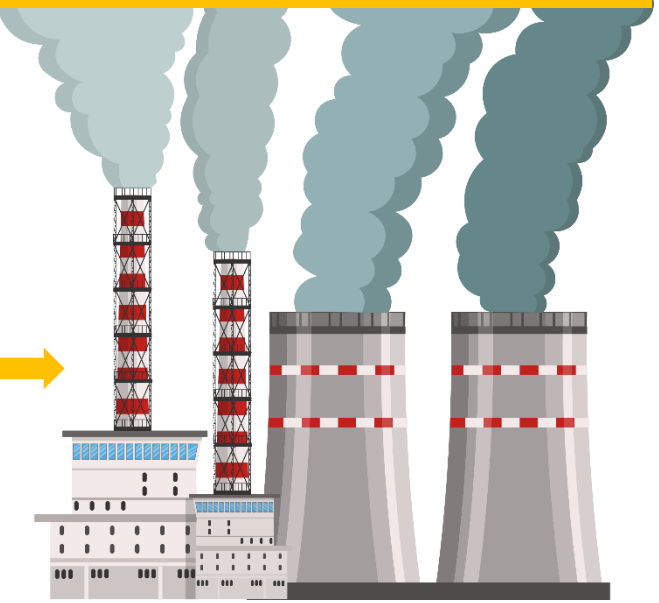




Moisture from the flue gases
is converted to fluid and drained

Clean Air

The gas collected is passed though filter and sent to atmosphere free of other chemicals and odder



ECOMAG - On Site

ECOMAG vs Incinerator

	ECOMAG PYROLATOR	Incinerator
Power	Self-powered	Electricity/ Kerosene/Diesel
Temperature	400C~ 600 C	>800 C
Method	Magnetic Heat Decomposition theory of plasma	Flame Combustion
Additional Equipment	Basic Dry Scrubber	Secondary combustion system and filters
By-Product	Ceramic Ash	Ash

ECOMAG - What Can it Decompose ?

- It decomposes all organic substances !!!
- Does not decompose organic substances which contains > 65% water & substances packed with water.
- For a smooth operation, organic substances should be packed in the furnace as tightly as possible.
- Cannot decompose such inorganic substances as glasses, metals, sand, soil, rock, ceramics, etc.
- Moreover it does not decompose substances generally unaccepted by society, which are volatile and explosive based.

ECOMAG - Special Features of Filtration (DRY SCRUBBER)

DRY SCRUBBER : 3 Stage Filtration with Counter Flow System

❱ Operation

- Scrubbing gas is introduced into the scrubber with 3 stage Filtration.
- First stage filtration is by a metallic Pre filter with 20 micron filtration efficiency.
- Second stage filtration is by Activated carbon filter to absorb Dioxins.
- Third stage filtration is by (Potassium Sulfate) carbon fiber media filtration embedded in a metallic frame with V shape woven media from American Air Filters Inc. USA (AAF).
- The Out let air exhaust shall be through an exhaust fan & chimney .

❱ Feature Highlights

- Handles high fume loads* Low pressure drop-1.2 kPa (5 in. w.g.)
- Low power use (Runs on 15 AMP/1 HP Motor)* Low maintenance

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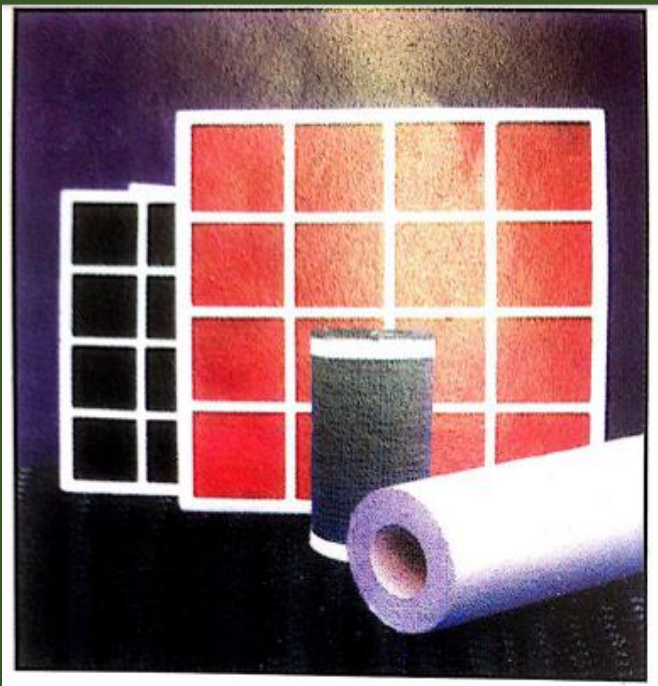
Gas Filtration Technology



CERASORB : gas phase purification systems for adsorption and chemisorption of pollutant gases / activated carbon to remove large organic gases / potassium permanganate to oxidize individual pollutants or as scrubber systems with extremely large inner surfaces and as catalytic converters for industrial usage

ECOMAG – AIR POLLUTION CONTROL & MANAGEMENT TECHNOLOGY

- Technology to control the Air pollution using barrier as well as absorption technology.

- Its a blend of filters in 3 stages to provide dry scrubbing AAF Media DRY FILTER to prevent/ reduction of Dioxins

  - To reduce the effect of dioxin release from decomposer
  - To reduce the effects of dioxin release or increased dioxin levels
  - To reduce dioxin concentrations to well below 0.01 ng TEQ/Nm3 .
  - Installed in a dry process 3 stage filter.
  - High reliability.
  - Low operating costs.
  - Suitable for installation at various waste incineration plants , metal production facilities and for chemical industries.

ECOMAG - POLLUTION CONTROL & MANAGEMENT TECHNOLOGY

About the AAF Media® technology

- Dioxins are readily absorbed from flue gases into Activated carbon – Lime on polypropylene (PP) based media.
- Dioxin molecules tend to migrate to the surface and react with media when they are inside plastics, and so are controlled in the flue gas. This PROCESS helps in reducing dioxin content in the flue gas

Air Pollution Removal Capacity

Media meets the following contaminant removal capacities by weight:

- Hydrogensulfide:17.0%minimum
- Sulfurdioxide:5.0%minimum
- Dioxin :8.0%minimum

For instance,100 Gms Media will remove a minimum of 8 gms of Dioxins. Hence life of filters is 6 months to 1 year

Flue gas entering the system passes upwards through the panel filters at first stage, and into the second stage filter where it has to travel vertically into the 3rd stage filtration and goes out through outlet chimney.

ECOMAG - POLLUTION CONTROL & MANAGEMENT TECHNOLOGY

Residence time

1. The filter size is 600 x 600 mm with cross sectional area of 0.36 mm2
2. The volume of air passing thru is 400 M3/hr with Velocity @ 0.3 m/sec
3. Total height of filter with 3 stages is 1.2 mts.
4. Therefore the residence time is 4 sec.

ECOMAC

Environmental Norms Test Results

Our Future is safe & Secure with ECOMAG