

## Improved Eco-friendly & Energy Efficient Electric Sanitary Pad Incinerator “GreenDispo”

### Problems of Menstrual Waste Management in India

- ✚ Very large numbers of menstrual (sanitary) pads are being used by women during their estimated 32 reproductive years.
- ✚ Assuming menstrual cycles in a given year, with requirement of 8 - 12 napkins per cycle, the average requirement of a woman is approx. 4500 napkin in her life time
- ✚ As per 2013 estimate by CSE (Down to earth magazine, 2013), 432 million sanitary napkins were used per month. With much improved awareness & affordability, this figure has gone up significantly today.
- ✚ If an estimated 121 million girls and women are currently using an average of eight disposable (non-compostable) sanitary pads a month, the waste load generated in India is estimated to be;

- 1.021 Billion Pads Disposed Monthly
- 12.3 Billion Pads Disposed Annually
- 113,000 Tons of Menstrual Waste Annually

[Source-International Institute for Population Sciences (2017)]



### Guidelines on Disposal of Sanitary Pad

#### National Guidelines on Disposal of Sanitary Pad (MDWS, 2015)

Common practices
Throw them unwrapped into fields, rooftops, etc.
Wrap them in paper/ plastic bag and throwing them outside
Drying, wrap in paper/plastic bag and throw in dustbins (mostly non-rural)
Burrry them for de-composting
Throw them in latrine / toilets
Burn it (rural areas and peri-urban areas)
Use small scale incinerators (community or school level)
Municipal waste management / burning in health clinics (more urban)

#### Recommended options for disposal of different materials

Material	Disposal into pit latrine	Deep burial	Composting	Pit burning	Incinerator
Used tissues, paper, cloth, cotton	✓	✓	✓	Less recommended	✓
Cotton napkins (reusable or commercial)	Less recommended	✓	✓	Less recommended	✓
Commercial napkins with plastic and liners	Not recommended	✓	Not Possible	Not recommended	Only recommended with good incinerator

## GreenDispo: An incinerator with Improved Technical Design

- ✚ Improved combustion chamber design and pad holder.
- ✚ Optimization of A/F ratio.
- ✚ Optimization of heating cycle & duration.
- ✚ High temperature incineration without higher energy consumption.
- ✚ Safety aspects.
- ✚ Post-combustion heater (secondary) with 2 seconds retention time.
  - Burns at **high temperatures exceeding 800° C**, suitable for unbleached pads and those with high cellulose content- still energy efficient.
  - In a further improvement with **Post Combustion Heater exceeding 950±50 °C** with over 2 sec. resident time, to passively control toxic emissions produced when burning polymeric and chlorinated products.

**Model 1:** Improved Sanitary Pad Incinerator for unbleached pads and those with high cellulose content.

**Model 2:** Improved Sanitary Pad Incinerator with post combustion flue gas heater at about 1000 °C for pads with high moisture content and super absorbent polymers. (Under laboratory testing)



**GreenDispo**

### Operational Parameters

- ✚ Capacity: 30-60 pads/hr
- ✚ Feed Rate: 5-15 pads/15 min
- ✚ Primary Combustion Chamber Temp.: 800 ± 50 °C
- ✚ Secondary Heater Temp.: 1000 ± 50 °C

## Beneficiaries

- ✚ Commercial Offices, Urban Societies and Community Toilets
- ✚ School/Colleges and Hostels
- ✚ Centralised Waste Disposal Facilities
- ✚ Other community places.

## IPR Status

- Joint IP under tri-partite MoU among ARCI, CSIR-NEERI and SA.
- Indian Patent App. No. 201821021430 is filed.

## Technology Licensee

- ✚ Sowbal Aerothermics (SA)  
80/A Teachers Colony, Trimulgherry Post,  
Secunderabad, Telangana 500015  
Email: [info@sowbal.com](mailto:info@sowbal.com) Tel: 040 2799 2453