CarboX – Ⅱ (KAT-8000W)

SUMIDA

Tractor is not part of the system
Carbo X-II is a mobile/onsite thermal decomposition waste treatment technology

Features of Carbo X-II

- Self-sufficient treatment
  - Able to treat at the source of waste production
- On-site
  - Able to reduce cost of transportation
- Recycle
- Reduciton of Cost
  - Onsite waste treatment enables reduction of transportation cost,
- Diverse opportunities
  - Environment business opportunities
  - Sales and production of carbonized recycled products
- Environmentally friendly
  - Contribution to a cyclic society by use of carbonized recycled products
  - Contribution to avoiding global warming by low carbon operations
- Social contribution
  - Co-benefit operations
Corporate Profiles

Name: SUMIDA

Location: Eco Town Zone, Kitakyushu City

President: Takeshi Fukumura

Established: October 28, 1997

Capital: JPY 81 mil.

Type of business:
Development, design, manufacturing, and sales of carbonization products. Consulting related to environment businesses.

Carbo X-II (Actual facility)
* The tractor not included as part of the facility
Insertion of waste by container boxes
Use of Carbonizing Gas as Fuel

- An energy efficient design using carbonized gas developed from waste
- Reduced time for carbonization due to newly developed heat duct structures

Technology Features

- Use of both carbonized gas and kerosine

Heat duct systems
Air tight carbonization chambers

Technology of Carbonization

- Air tight carbonization chambers and container boxes

☞ Carbon thermal decomposition temperatures 50°C ~ 1,000°C
Various Patents

① 生ゴミの炭化処理車及び生ゴミの炭化処理方法
特許第3693624号（日本） 2005年7月1日取得

② 医療廃棄物の炭化処理システム及び炭化処理車
特許第10－0685278号（韓国） 2007年2月14日取得

③ 医療系廃棄物の炭化処理設備及び医療系廃棄物の炭化処理方法
特許第5004523号（日本） 2012年6月1日取得

④ 廃棄物の間接加熱方式炭化処理システム及びこれを利用した炭化車両
特許第10－1129826号（韓国） 20012年3月16日取得

⑤ 廃棄物の間接加熱方式炭化処理システム及びこれを利用した炭化車両
特許第号（中国） 2014年9月21日取得

国際特許出願 PCT／KR2010／003274号 2010年5月25日
Malaysia/Vietnam
Effective use of carbonized recycled resources

- **Fuel**
  - Odorless household use fuel at 6,500 kcal/kg

- **Industrial**
  - Alternate and auxiliary fuel for coal

- **Agricultural**
  - Prevention of sequential cropping disorders, PH adjustments

- **Soil improvement**
  - Improvement of soil by use of carbon porous

- **Compost**
  - Mixed use with organic fertilizers for acceleration of bacterial activities

- **Water improvement**
  - Adsorption of pollutant materials, de-composting of organic materials by activation of bacteria

- **Dehydration**
  - Moisture retention, deodorization, antifungal, adsorption of formaldehyde

- **Activated carbons**
  - Potable water purification, industrial waste water purification, collection of gas, removal of dioxin
Onsite, carbonization thermal treatment to prevent livestock diseases

Livestock diseases
Cow dungs, chicken droppings

Treatment of un-movable epidemic livestock, culled animals, animal dungs

Carbonization thermal treatment
500°C~800°C
Dry thermal sterilization
2hours

*Epidemic prevention
*Sterilization
For Treatment of Medical Waste

Treatment of infectious medical waste

Carbon heat treatment

Sterilization, Prevention of infection
Improvement of hygienic conditions

CarboX-II carbonization
Production of fuel from kitchen waste
Made into Solid fuel

Alternate fuel from kitchen waste and improvement of living environment

Improvement of waste environment in places without public waste management services

Improvement of hygienic conditions
Oil palm waste is left untreated in palm forest and farms.

CarboX-II (carbonization)
Production of fuel and active carbon

Materials for Active Carbon

Palm oil residue

Carbonization

Re-cycle
Bio carbonization of Palm oil waste

Palm Oil waste

Recycled products (biomass cokes)

Bio carbon from palm oil waste
Carbox X- II (KAT–8000W)

Thank you for your attention

SUMIDA