

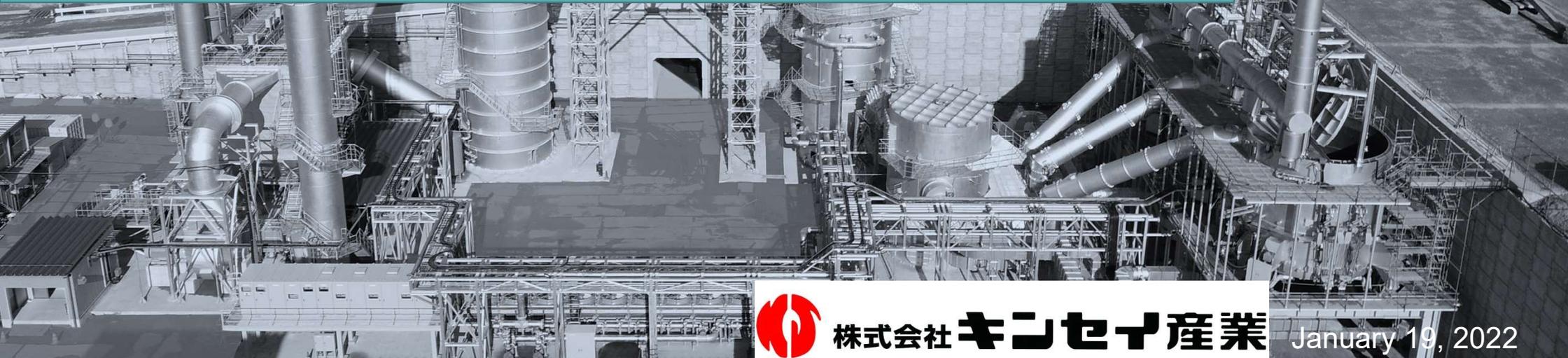
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# The Incinerator of the infectious medical wastes

Incineration is the best solution to the infectious medical waste.

Rieko Yokoo

Kinsei Sangyo. General Manager of technical service department



株式会社 **キンセイ産業**

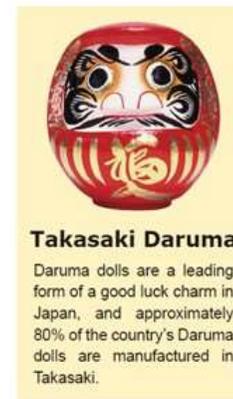
January 19, 2022

# Company Profile

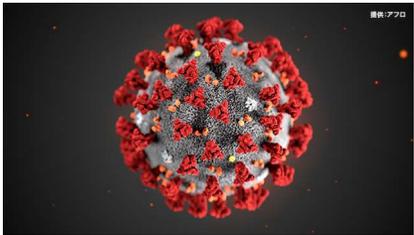


Corporate Name ; KINSEI SANGYO CO.,LTD  
Established ; March, 1967  
Main Office ; 1-1 Miyahara-machi, Takasaki-shi, Gunma  
Representative ; President Masamoto Kaneko  
Employees ; 60 (Male:50 Female:10)

Equipment installation: over 2700  
Heat energy plant maker  
Unique technology of gasification



# How to treat Infectious medical wastes?



The new coronavirus

## In the Corona disaster

The new coronavirus has spread around the world with an unprecedented speed and intensity of infection.

In medical institutions, all the equipment used in the treatment of infected patients, the clothes of medical personnel, the clothes of infected patients, and everything they touch are discharged as infectious medical waste.



Infectious medical wastes In the white bucket



Intravenous bag、rubber gloves...

# Medical waste treatment

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Incineration(generally), Melting, Autoclave, Microwave

	Gasification combustion	Incineration second	Melting	Autoclave	Microwave
① Disappearance of Infectivity	○	○	○	△	△
② Pretreatment	○	△	△	○	○
③ Air pollutants	○	△	△	○	○
④ Volume reduction	◎	○	◎	△	△
⑤ Operation cost	○	△	×	△	△
⑥ Initial cost	○	○	△	○	○
⑦ Energy recovery	◎	○	◎	×	×

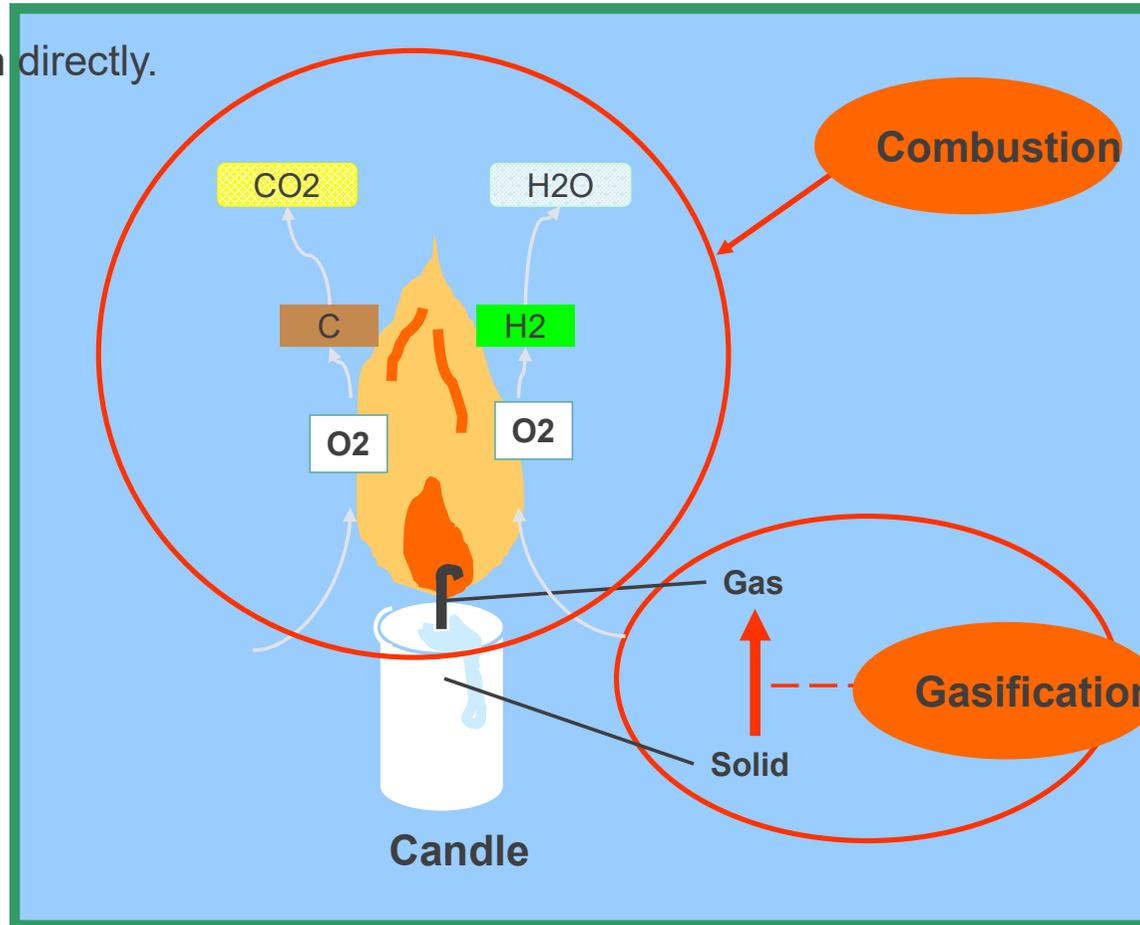
KINSEI original technology : Dry Distillation Gasification Combustion System

# Gasification is...

## Chemical Reaction

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Candle does not burn directly.



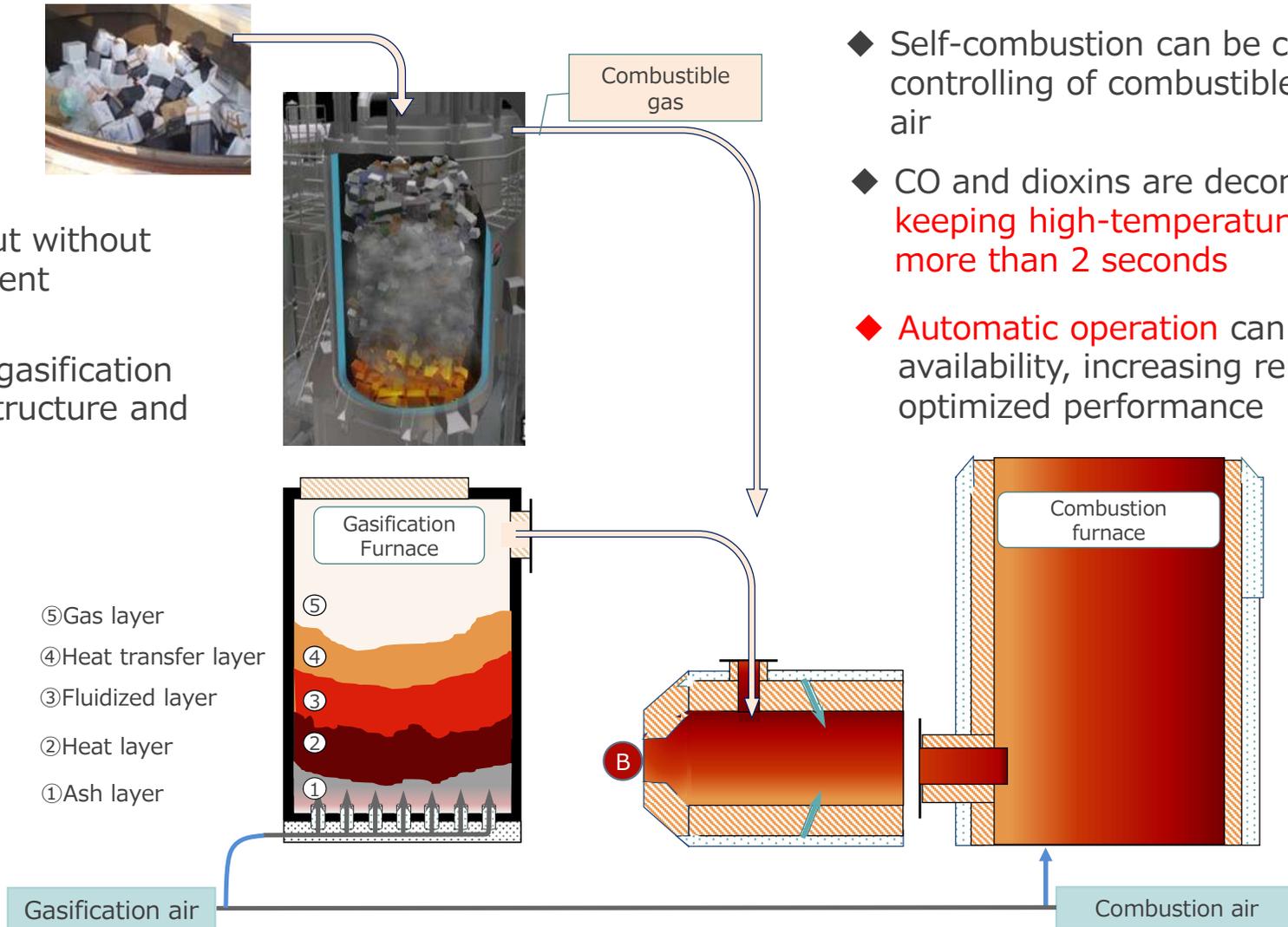
The gas reacts with oxygen in the air

By solid is heated, the solid is changed to a gas

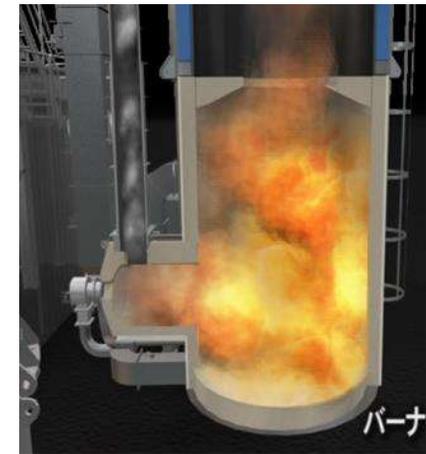
KINSEI technology "gasification" is based on the principles of combustion reaction.

# KINSEI's Dry Distillation Gasification System

- ◆ Batch input without pretreatment
- ◆ The ideal gasification through structure and control



- ◆ Self-combustion can be conducted by feedback controlling of combustible gases mixing with air
- ◆ CO and dioxins are decomposed by **keeping high-temperature combustion for more than 2 seconds**
- ◆ **Automatic operation** can ensuring high availability, increasing reliability and optimized performance



Combustion furnace

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# This is the kinsei's Dry Distillation Gasification System !!



Compact model type 「MGB」  
for hospitals



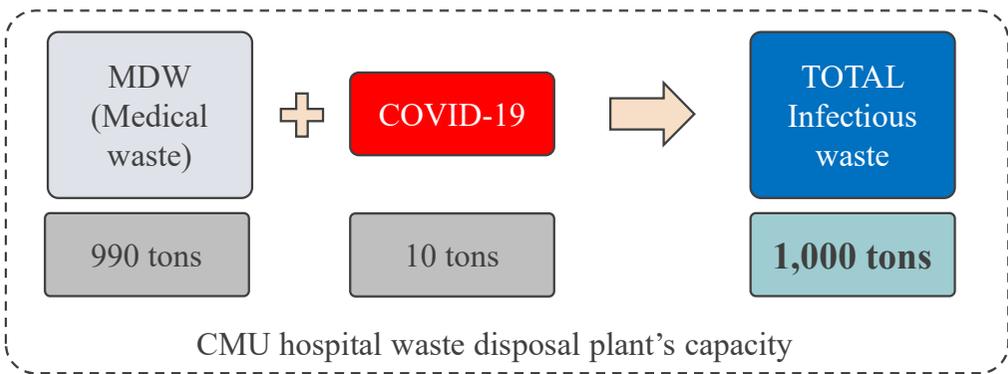
Cool silver body type 「GB」  
for centralized processing plants

# JICA Thailand Project

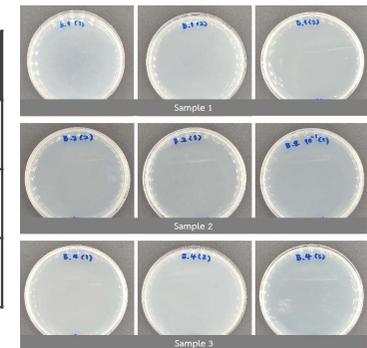
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- ◆ GB-20-2100TYPE was installed in Thai hospital and designed for incinerating infectious waste with disposal capacity of 3 tons per day
- ◆ About 1,000 tons of infectious waste were disposed during 2 years – every months is dispose around 60 tons at normal operation
- ◆ 0 ~ 5 % of those Total waste is COVID-19 related infectious waste
- ◆ Biological tests of bottom ash was not detected
- ◆ **GB-20** is certified the environmental friendly waste incineration plant, by emission gas result – which 10 major criteria have CLEARED the standard



Biological Tests of Bottom Ash	
Criteria	Analyzed result
Bacillus stearothermophilus	Not Detected
Bacillus subtilis	Not Detected



# References

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WAIZU LADIES CLINIC  
(SAITAMA) MGB-30



CENTRAL PROCESSING  
PLANT(THAILAND) MGB-100



MAHARAJ NAKORN CHIANG MAI  
HOSPITAL(THAILAND) GB-20



HENSUNGUN(KOREA)  
GB-80T-15,500SB



OKAMOTO(IBARAGI)  
GB-30W-9,000SB



JYOMO HOSPITAL  
(GUMMA) MGB-200



ISHII HOSPITAL(GUMMA)  
MGB-100



TOYAMAKANKYOUSEIBI  
(TOYAMA)GB-200T-55000



SANKYOKANKYOUKAIHATSU  
(SAGA) GB-30W-20,000PB



MONTERU MINOKAMO FACTORY  
(GIFU) GB-10-1,000PB



OE HOSPITAL(TOKUSHIMA)  
GB-7.5



KANKYOUSEIBI(IWATE)  
GB-30W-8,500



MEIJISEIKA KANTO FACTORY  
(SAITAMA) GB-20-2,100SB



DAIICHISEIYAKU SHIZUOKA FACTORY  
(SHIZUOKA) GB-25-2,500-7,100BF

# FAQ

- Q1** We have the impression that the incinerator is not good. Does the Incineration emit noxious gas? Right?



KISNEI gasification system does not emit the gas that exceeds the regulation value. They are the incinerations considering the global environment.
  
- Q2** Does they needs wide spaces?



Our system is so compact. They needs just small spaces.
  
- Q3** Does they needs long periods for the Construction?



No.! Small size one needs only one day.
  
- Q4** Are they expensive?



They are simple construction. So they are not much expensive.

# KINSEI gasification combustion is active in SDGs

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- **Seven international Goals**
- **Several fields** (environment · Climate change measures · medical treatment · energy...)
- **Contributing to problem solving in developed and developing countries**

## ① Our products are considering the global environment.

11, 13 Kinsei's original combustion technology based on scientific evidence further reduces the generation of harmful substances and suppresses dioxins compared to ordinary incinerators. By conserving the air, water quality, and soil environment, the burden on each person's living environment can be reduced.  
12 It can contribute to **the eradication of infectious diseases**, waste management, and the promotion of the 3Rs.



## ② A better environment to the world with advanced technology

13 Stable combustion of our unique system can **suppress CO2 emissions** and contribute to global warming.  
14 Waste plastics that have flowed into the sea area are currently a problem on a global scale both in Japan and overseas. Since the KINSEI gasification combustion plant is **good at treating waste plastics**, this problem can be solved.



## ③ Clean energy to everyone

7 The dry distillation gasification combustion plant is good at stable thermal recycling. Power is generated by **the heat (steam, hot water, etc.)** generated during the combustion of waste.  
9 We can contribute to technological improvement in all countries with our unique technology and research and development.



# Conclusion

- ◎ Incineration is the best solution to the infectious medical waste.
- ◎ 「Dry Distillation Gasification Combustion System」 is especially excellent.
- ◎ Kinsei is familiar with combustion scientifically.
- ◎ Kinsei's 「Dry Distillation Gasification Combustion System」 is one and only technology in the world.
- ◎ Kinsei's incinerator does not emit noxious gas.
- ◎ It is a device that considers the environment.

We can provide the best solution for your needs.

Thank you for your attention!



KINSEI SANGYO CO.,LTD  
株式会社 **キンセイ産業**