



>99% of dioxins and furans eliminated using CataFlex™ DiOxi

“The CataFlex™ DiOxi catalytic filter bags supplied by Topsoe ensure that the plant always complies with emissions requirements”

— J. Huijben, Technical Director Dutch Incinerators

Challenge

Facilities that incinerate waste are intensely aware of the need to comply with stringent emissions legislation – and the need to be demonstrably sure of compliance if and when waste material fluctuates in composition and toxicity.

Adsorption by activated carbon is the technology most widely used for capturing dioxins at waste incinerators. However, this approach has significant limitations, which means that plants are often in doubt whether they comply or not. Furthermore, activated carbon only **captures** the dioxins, resulting in new risks when the spent material – now laden with dioxins – has to be dealt with. It does **not** eliminate them.

Solution

Dutch Incinerators provides turnkey thermal waste processing and waste-to-energy solutions. For a new medical waste incinerator for a customer in Thailand, the company wanted to deal with the problematic dioxins and resolve the emissions compliance issue by using catalytic material to convert them into harmless substances.

This was achieved by installing 312 CataFlex™ DiOxi catalytic filter bags, supplied by Topsoe, in the customer's existing bag houses. These work as conventional dust filter bags for removing particulates, but with the major addition that the fabric is loaded with a proprietary Topsoe catalyst specifically configured to break down dioxins as well as furans.

Outcome

Tests showed that the medical waste incinerator was able to destroy >99% of dioxins and furans in the flue gas, with no injection of activated carbon required. Measurements by SGS Thailand Ltd. documented less than 0.02 ng TEQ/Nm³ remaining – far below the most stringent regulations anywhere in the world.

Using CataFlex™ catalytic filter bag technology, Dutch Incinerators is now able to provide an effective passive dioxin destruction solution that is always operating within the appropriate emissions requirements.

This gives the customer ease of mind about compliance and paves the way to full focus on optimizing plant operation.



Read more
www.topsoe.com/cataflex

CataFlex™ filter bags are designed to treat flue gases in high-dust industrial operations that include:

- Waste incineration
- Biomass boilers
- Power plants
- Cement production
- Glass production
- Steel production

The benefits of using CataFlex™ filter bags include:

- Removes dust and multiple gaseous compounds in one single step
- No need for costly, space consuming tail-end SCR equipment
- Low pressure drop means no need for costly new ID fans or compressed air
- Bags can be inserted into existing filter setups to provide an affordable drop-in upgrade
- Service life and pressure drop are comparable to conventional fabric filters
- No contact between catalyst and potentially harmful particles

Specifications	No treatment	Treatment with CataFlex™ DiOxi
Flue gas flow, Nm ³ /hour (wet)		14,220
Flue gas temperature, °C		220
Dust emission, mg/Nm ³ (wet)	<6,000	<10
Dioxins/furans emission, ng TEQ/Nm ³	<6	<0.02*

*>99% dioxins/furans elimination (TEQ)