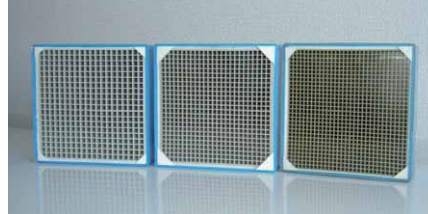


Catalytic decomposition of  
dioxins generated in incineration

# Catalytic decomposition of dioxins

## Feature

- Catalytic decomposition of dioxins needs no secondary treatment.
- High-performance durable decomposition system.
- Sakai Chemical Industry's catalysts are recyclable (with some special exceptions).
- Ammonia works to remove nitrogen oxides at the same time.



Catalysts



Reactor

Industrial waste incinerator/Urban garbage incinerator

## Overview

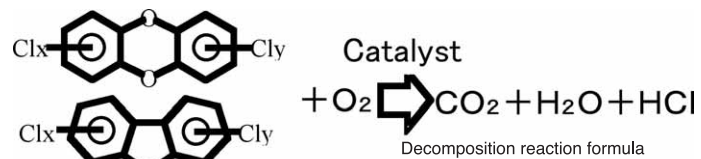
(Technical principles, actions, etc.)

Applications for nitrogen oxide removal from garbage incineration exhaust are growing in demand. Concern about the toxicity of small amounts of dioxins contained in exhaust from garbage incinerators has also grown in the last several years.

Making most of its proprietary technologies established in nitrogen oxide removal catalysts, Sakai Chemical Industry developed a catalyst for dioxin decomposition.

Sakai Chemical Industry is the world's only manufacturer engaged in the whole process of catalyst production, from supply of titanium oxides, a primary ingredient for catalysts, to finished product delivery. We are proud of our record of satisfying various customer needs.

Form: 150 mm Square honeycomb grid  
Pitch: 7.4 mm (20 cell x 20 cell) - 3.7 mm (40 cell x 40 cell)  
Components: Vanadium pentoxide, tungstic trioxide, molybdenum sesquioxide, etc., titanium oxides (carrier)  
Available temperature range: 160 - 350°C  
Dioxin composition performance: 99% and higher



■ Table: Catalyst size

Pitch (mm)	7.4	6.0	5.0	4.2	3.7
Cell size (cell # x cell #)	20×20	25×25	30×30	35×35	40×40
Aperture (mm)	6.23	4.98	4.13	3.65	3.19
Inner wall thickness (mm)	1.15	0.90	0.80	0.58	0.50
Opening ratio (%)	69.0	69.0	68.1	72.7	72.5
Contact area (m <sup>2</sup> /m <sup>3</sup> )	442	553	660	795	908

## Introductory Track Record

- **J a p a n** : Several hundred deliveries to garbage/industrial waste incinerators and funeral homes. Many of them adopt the catalyst as a standard.
- **South Korea/China**: More than 10 deliveries to garbage incinerators and funeral homes.
- **The product has already been delivered to some countries and regions in Asia.**

## Effects

- ◎ **Removes at least 99% of dioxins generated during incinerations.**

(e.g.) Before catalysis 5ng-TEQ/Nm<sup>3</sup>  
⇒ After catalysis 0.05ng-TEQ/Nm<sup>3</sup>

- ◎ **Using ammonia reduces the concentration of nitrogen oxides emitted to 50 ppm or less.**

<Notes> 3 years of operation are guaranteed without any special operational control.  
Combining the catalyst units with wet scrubbers and bug filters is more effective.  
Space-saving catalysis device can be installed on existing facilities.

Water

Energy saving/Energy recovery

Energy storage/Energy creation

New energy

Waste disposal/  
Recycling/  
Resource saving

Air

Soil

Other

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