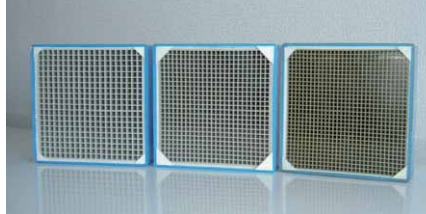


Catalytic decomposition of  
dioxins generated in incineration

# 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

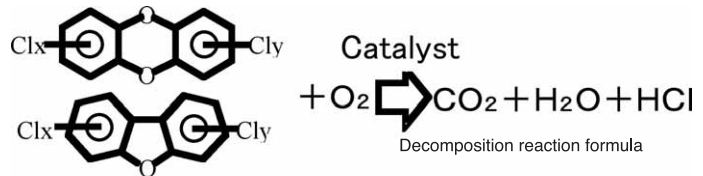
## Overview (Technical principles, actions, etc.)

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

- Japan: Over 110 deals closed at garbage/industrial waste incinerators and funeral halls. In most cases, the catalyst units are chosen by those clients as standard equipment.**
- Korea: Over 10 deals closed at garbage incinerators and funeral halls.**
- It is expected to further expand the Asian market in the future.**

## 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 bag filters is more effective.  
Space-saving catalysis device can be installed on existing facilities.

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